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Tsao

(10) **Patent No.: US 8,606,880 B2**
(45) **Date of Patent: Dec. 10, 2013**

(54) **USE OF WIRELESS DEVICES' EXTERNAL STORAGE**

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(73) Assignee: **Sheng Tai (Ted) Tsao**, Fremont, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 2766 days.

(21) Appl. No.: **10/726,897**

(22) Filed: **Dec. 4, 2003**

(65) **Prior Publication Data**

US 2010/0005153 A1 Jan. 7, 2010

(51) **Int. Cl.**
G06F 15/16 (2006.01)

(52) **U.S. Cl.**
USPC **709/219**; 709/203; 709/226; 455/412.1; 455/899

(58) **Field of Classification Search**
USPC 709/200, 203, 217, 219, 226, 245; 455/412.1, 899
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,351,776	B1 *	2/2002	O'Brien et al.	709/245
6,356,941	B1 *	3/2002	Cohen	709/219
6,714,968	B1 *	3/2004	Prust	709/219
6,735,623	B1 *	5/2004	Prust	709/219
6,839,743	B2 *	1/2005	Shim	709/217
6,985,927	B2 *	1/2006	O'Brien et al.	709/213
7,506,034	B2 *	3/2009	Coates et al.	709/219
7,650,621	B2 *	1/2010	Thomas et al.	725/87
7,894,803	B2 *	2/2011	Kamada	455/414.3
2002/0059621	A1 *	5/2002	Thomas et al.	725/87
2002/0123336	A1 *	9/2002	Kamada	455/420
2002/0128036	A1 *	9/2002	Yach et al.	455/552
2002/0133597	A1 *	9/2002	Jhingan et al.	709/228
2003/0191716	A1 *	10/2003	Woods et al.	705/50

* cited by examiner

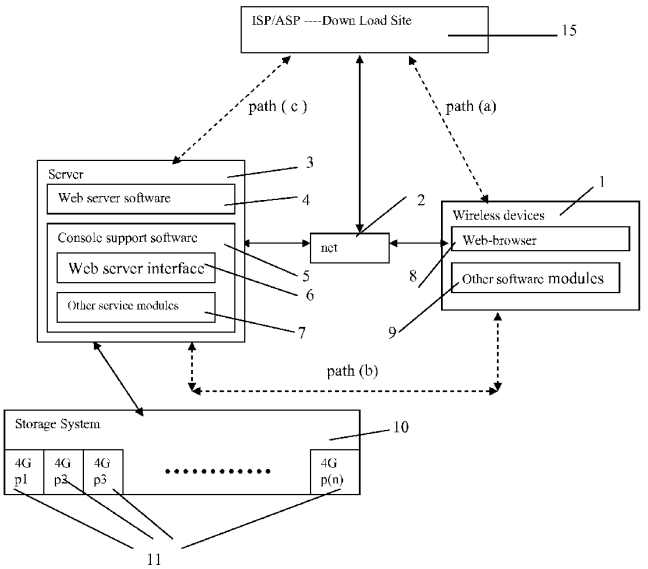
Primary Examiner — El Hadji Sall

(57) **ABSTRACT**

Adapting web-based external storage, wireless device can posses huge amount of storage that current any wireless device's internal storage can not provide. To effectively let the storage server providing external storage (file system) for wireless device, the storage of a storage server need to be partitioned into multiple small storage volume and need to be exported to each specific wireless device. The console support software coupled with web-server software of a server provides both users of wireless device and console through web-browser to perform tasks of creating and utilizing external storage (file system). To support larger number of wireless devices with external storage, a central controlled distributed scalable virtual machine infrastructure can be deployed. The larger number of storage server controlled by a central control system can satisfy unlimited wireless devices external storage needs.

17 Claims, 18 Drawing Sheets

Wireless out-band download



Wireless devices supports in a simple environment

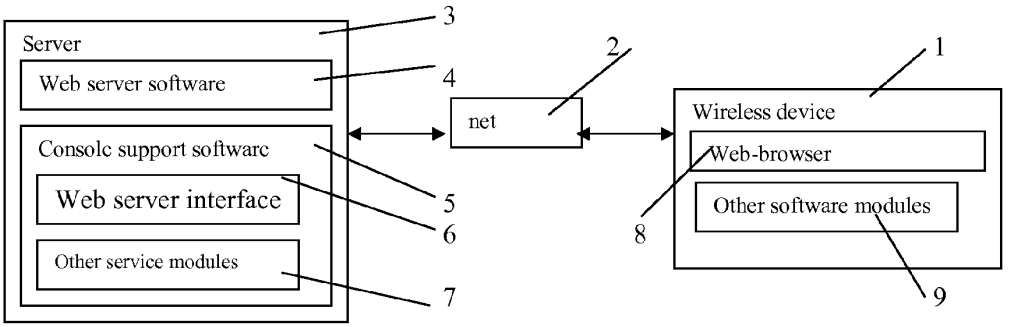


Fig. 1

Wireless devices access external storage through web browser

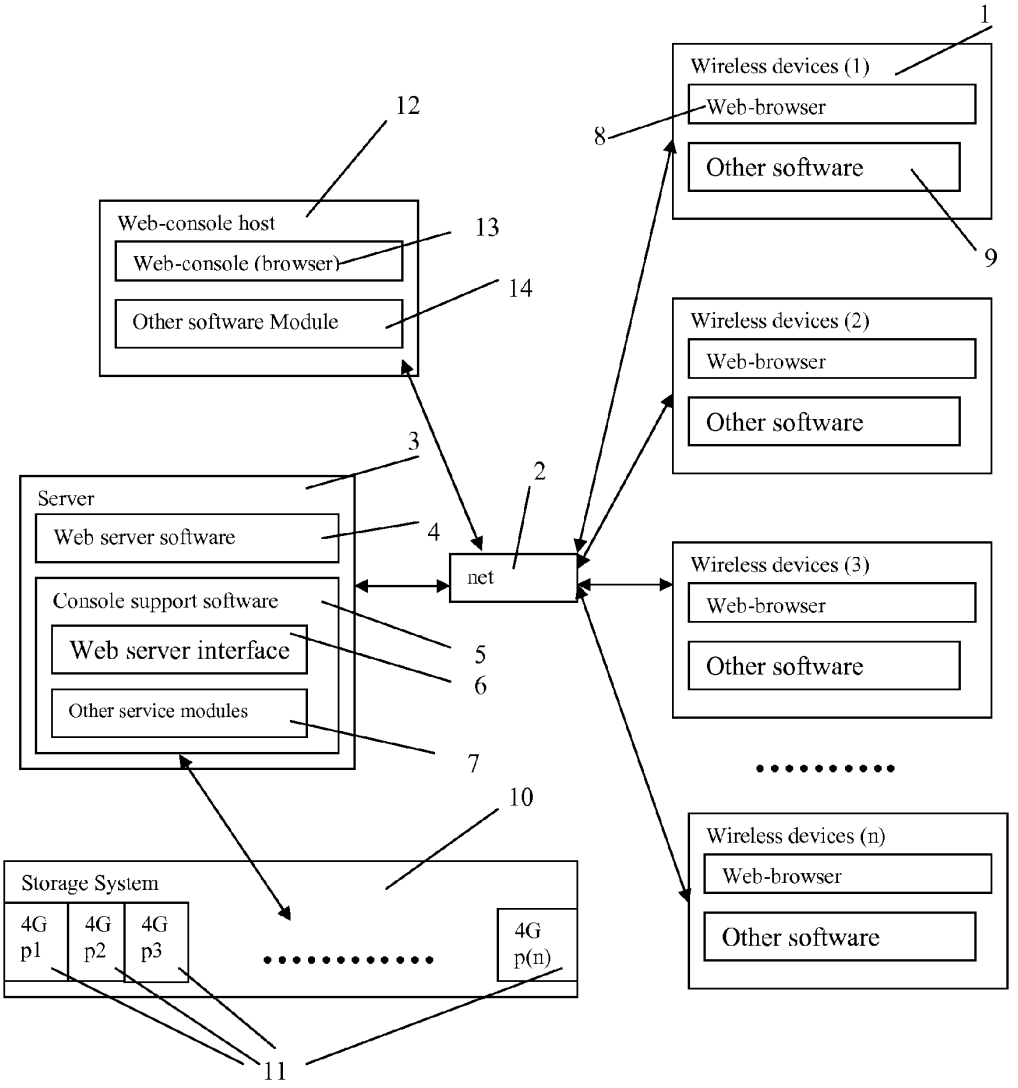


Fig. 2

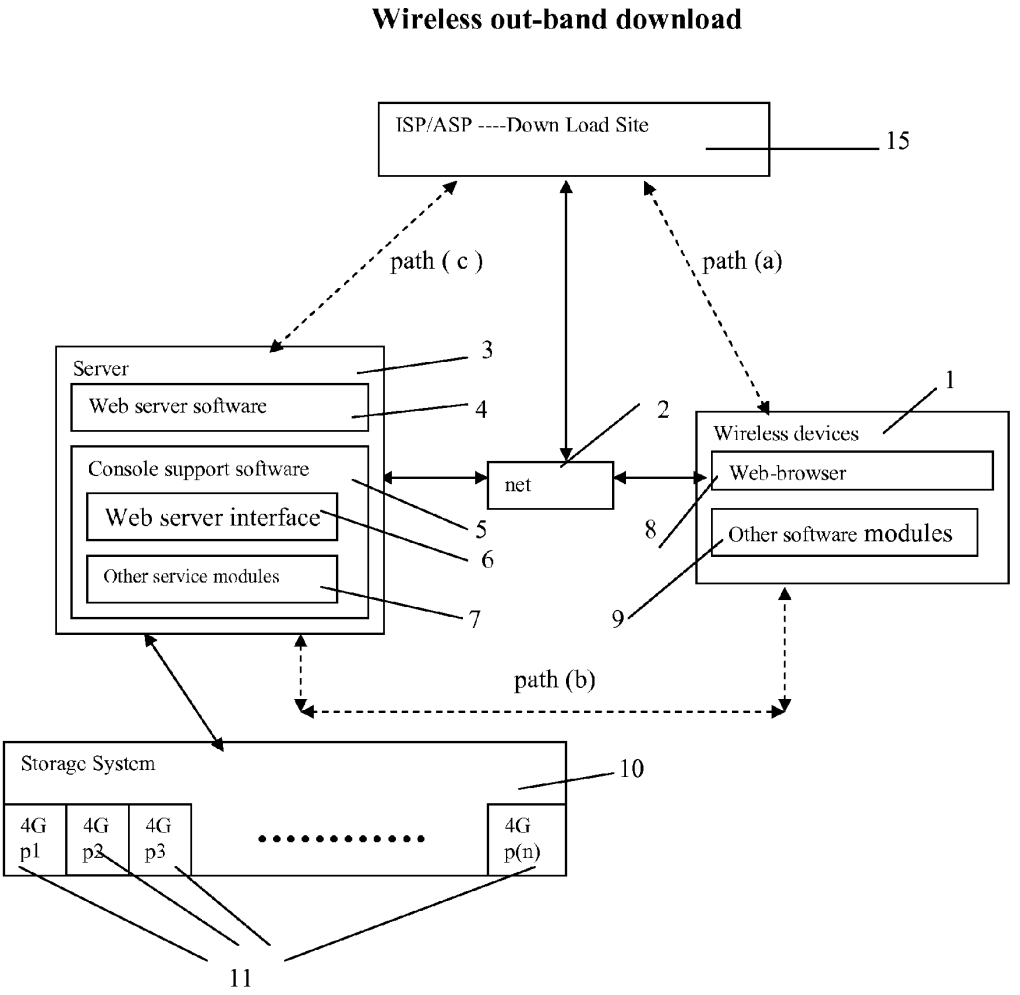

Wireless out-band download
ISP/ASP ----Down Load Site
15
path (c)
path (a)
Server
3
Web server software
4
Console support software
Web server interface
5
6
Other service modules
7
net
2
1
Wireless devices
Web-browser
8
Other software modules
9
path (b)
Storage System
10
4G p1
4G p2
4G p3
4G p(n)
11

Fig. 3

The CCDSVM Support External Device for Huge Number of Wireless Device

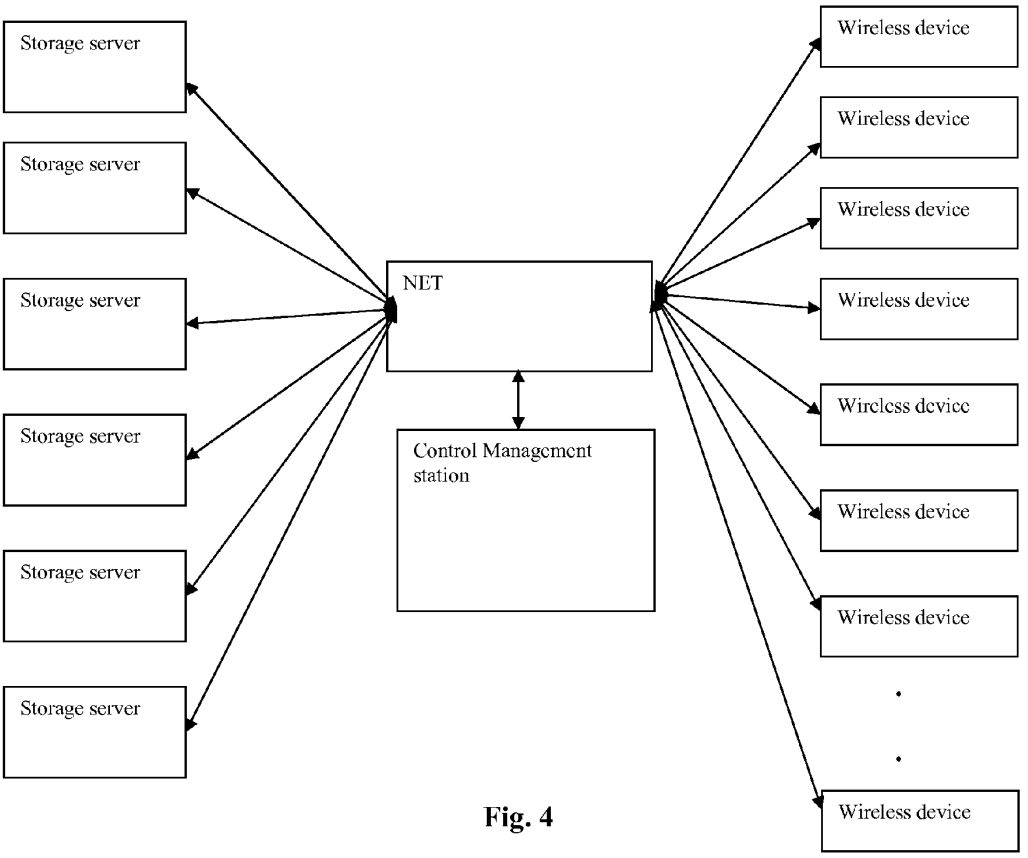


Fig. 4

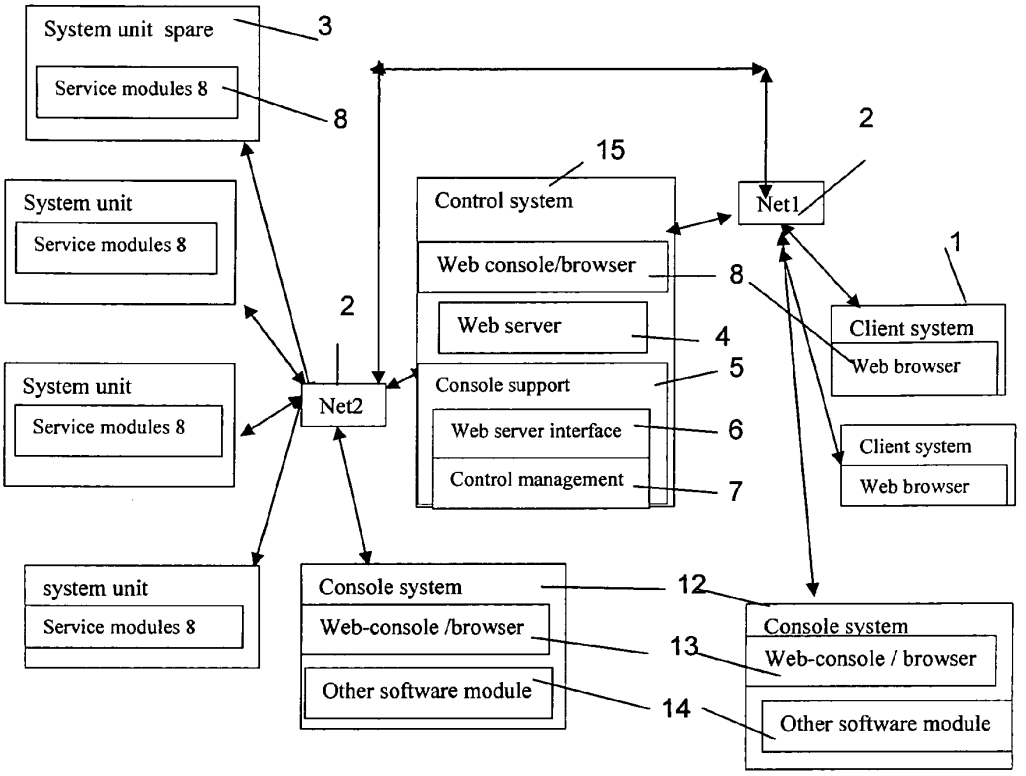

System unit spare
Service modules 8
3
8
15
2
System unit
Service modules 8
Control system
Net1
Web console/browser
8
1
2
Web server
4
Client system
Web browser
System unit
Service modules 8
Net2
Console support
5
Web server interface
6
Client system
Web browser
Control management
7
system unit
Service modules 8
Console system
12
Console system
Web-console /browser
13
Web-console / browser
Other software module
14
Other software module

Fig. 5

A typical Computer system connected into network

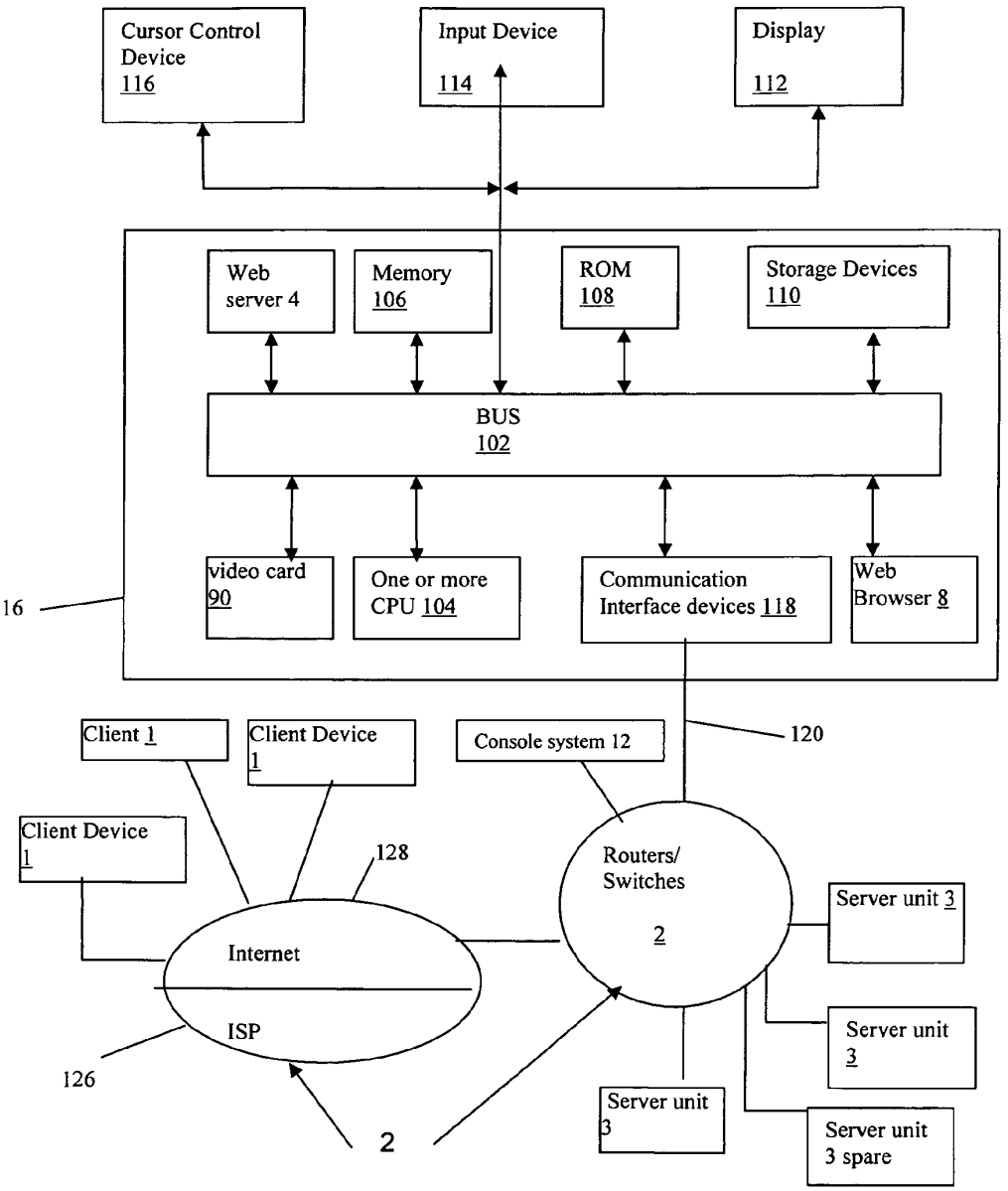


Fig. 6

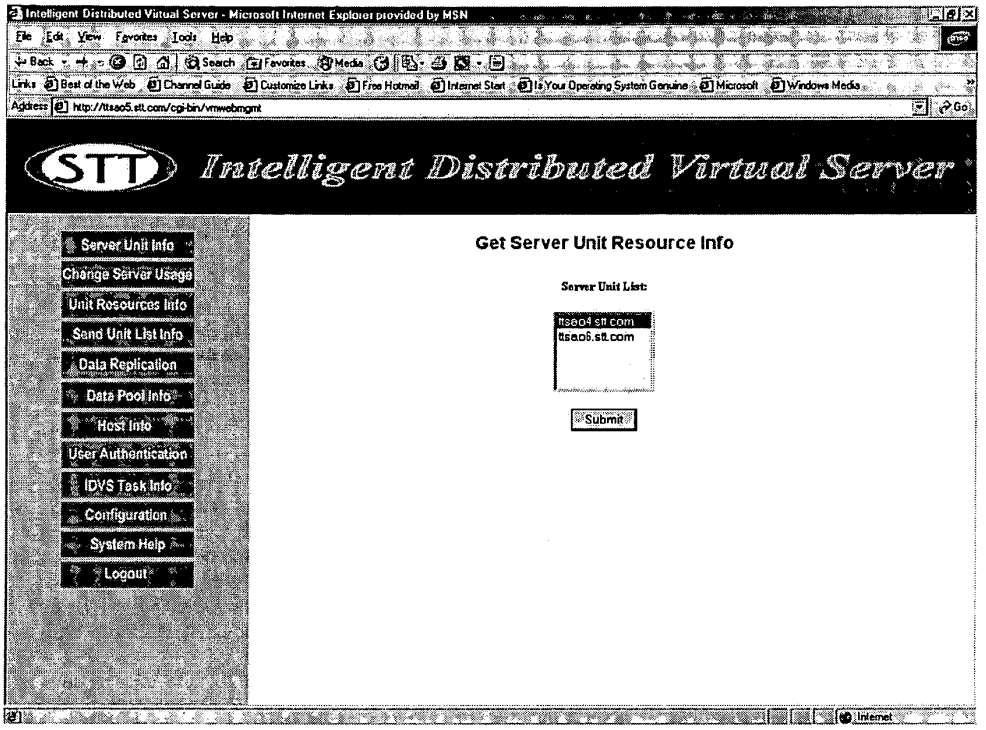

Intelligent Distributed Virtual Server - Microsoft Internet Explorer provided by MSN
Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Get Server Unit Resource Info
Server Unit List:
ttsao4.stt.com
ttsao6.stt.com
Submit

Fig. 7A

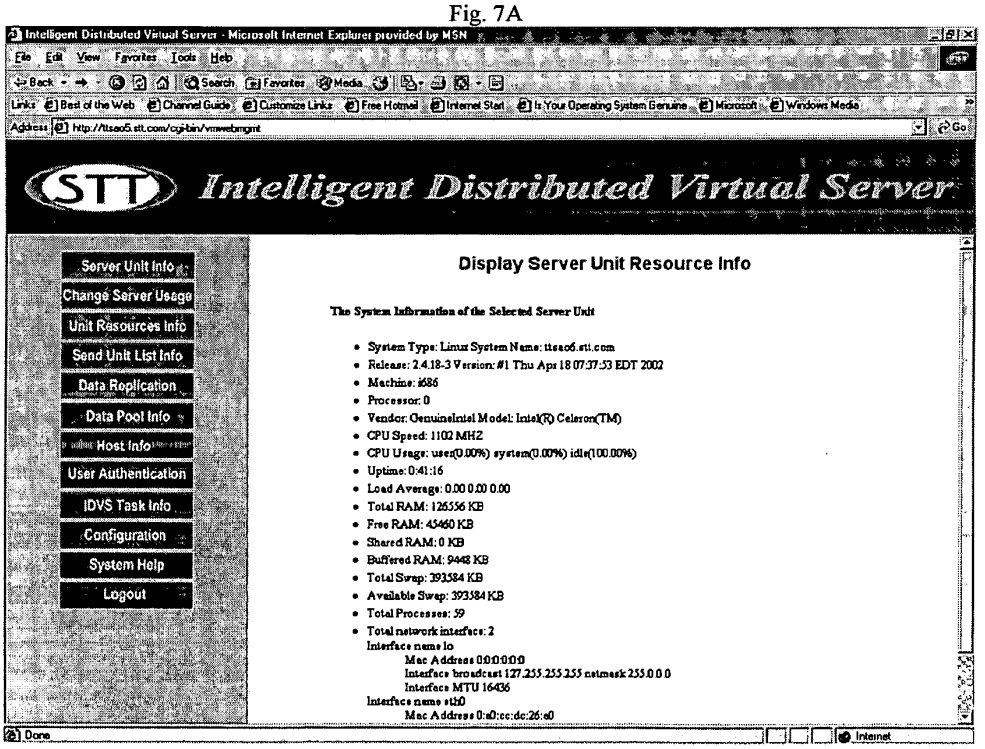

Intelligent Distributed Virtual Server - Microsoft Internet Explorer provided by MSN
Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Display Server Unit Resource Info
The System Information of the Selected Server Unit
System Type: Linux System Name: ttsao6.stt.com
Release: 2.4.18-3 Version: #1 Thu Apr 18 07:37:53 EDT 2002
Machine: i686
Processor: 0
Vendor: GenuineIntel Model: Intel(R) Celeron(TM)
CPU Speed: 1102 MHZ
CPU Usage: user(0.00%) system(0.00%) idle(100.00%)
Uptime: 0:41:16
Load Averags: 0.00 0.00 0.00
Total RAM: 126556 KB
Free RAM: 45460 KB
Shared RAM: 0 KB
Buffered RAM: 9448 KB
Total Swap: 393584 KB
Available Swap: 393584 KB
Total Processes: 59
Total network interfaces: 2
Interface name lo
Mac Address 0:0:0:0:0:0
Interface broadcast 127.255.255.255 netmask 255.0.0.0
Interface MTU 16436
Interface name eth0
Mac Address 0:a0:cc:dc:26:e0

Fig. 7B

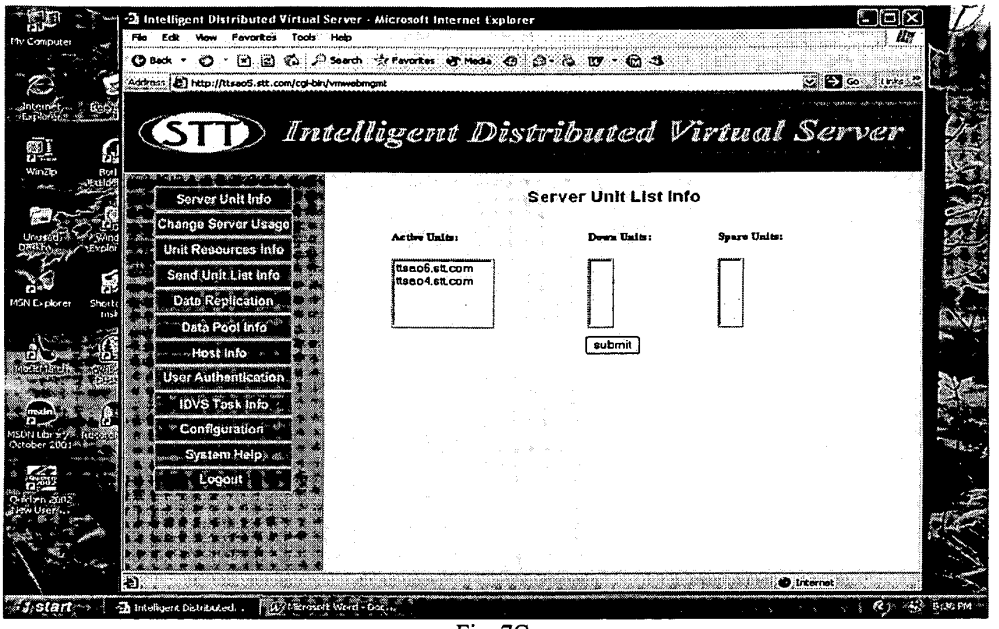

Intelligent Distributed Virtual Server - Microsoft Internet Explorer
Intelligent Distributed Virtual Server
Server Unit List Info
Active Units:
Down Units:
Spare Units:
ttseo6.stt.com
ttseo4.stt.com
submit
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout

Fig. 7C

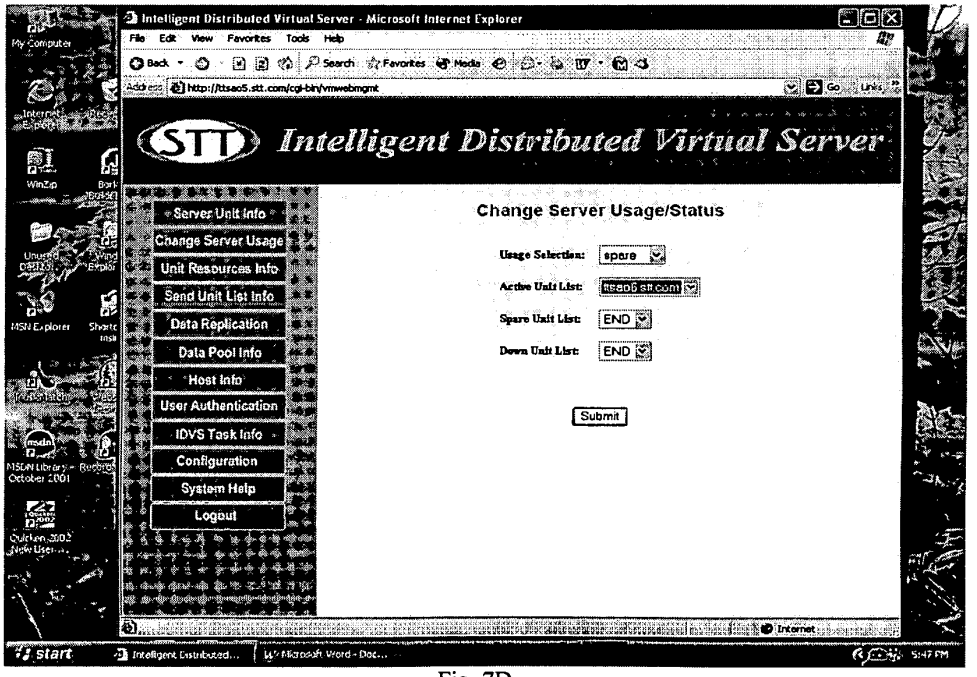

Intelligent Distributed Virtual Server - Microsoft Internet Explorer
Intelligent Distributed Virtual Server
Change Server Usage/Status
Usage Selection: spare
Active Unit List: ttseo6.stt.com
Spare Unit List: END
Down Unit List: END
Submit
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout

Fig. 7D

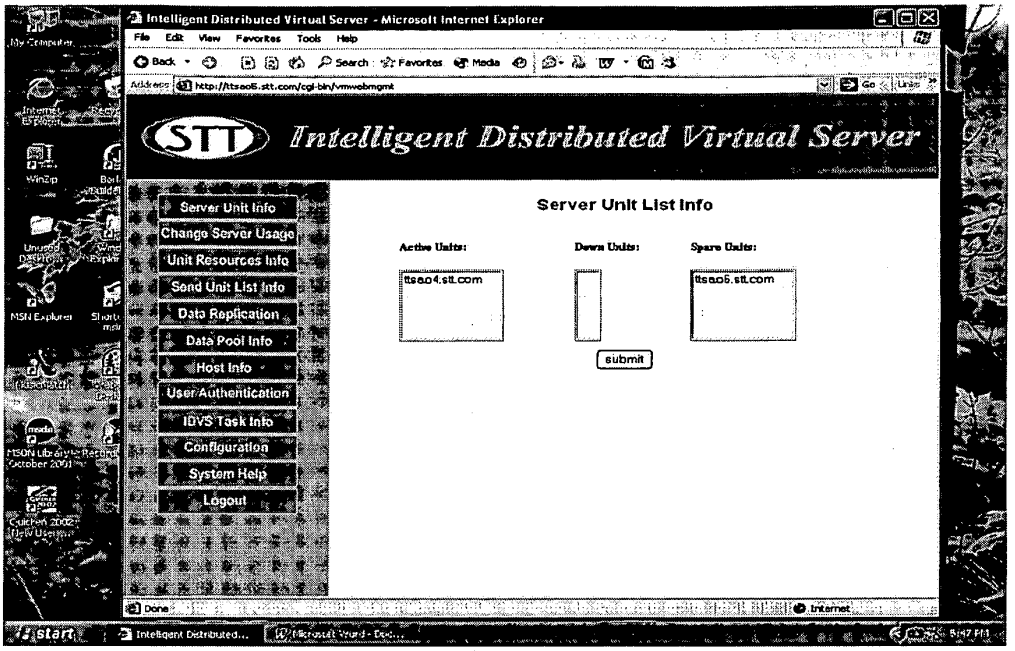

Intelligent Distributed Virtual Server - Microsoft Internet Explorer
Intelligent Distributed Virtual Server
Server Unit List Info
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Active Units:
Down Units:
Spare Units:
ttsao4.stt.com
ttsao6.stt.com
submit

Fig. 7E

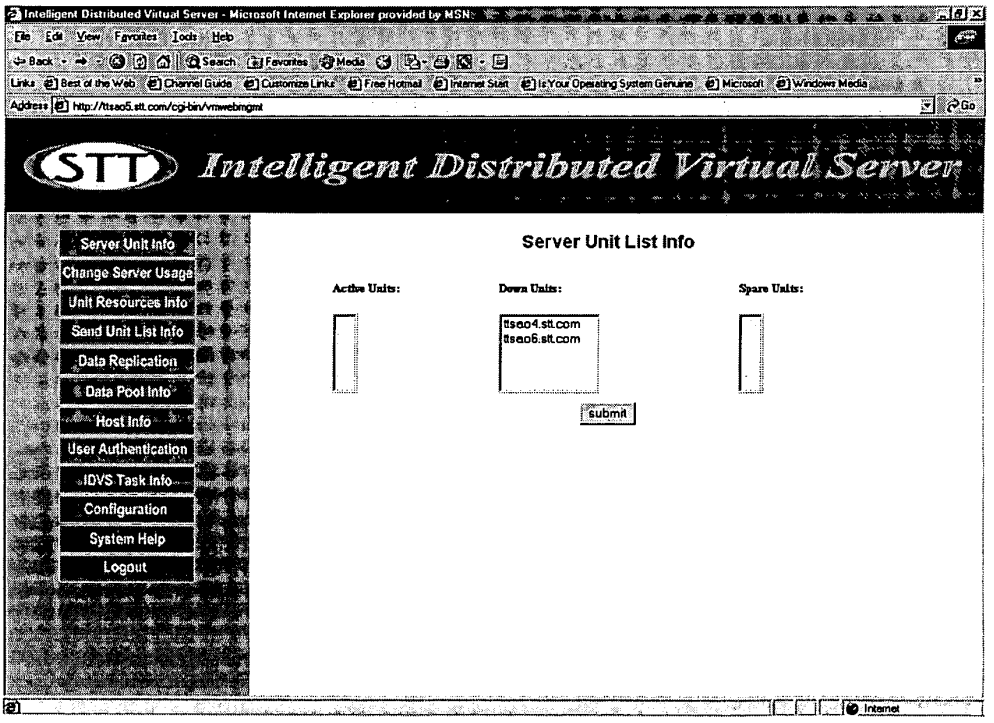

Intelligent Distributed Virtual Server - Microsoft Internet Explorer provided by MSN
Intelligent Distributed Virtual Server
Server Unit List Info
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Active Units:
Down Units:
Spare Units:
ttsao4.stt.com
ttsao6.stt.com
submit

Fig. 7F

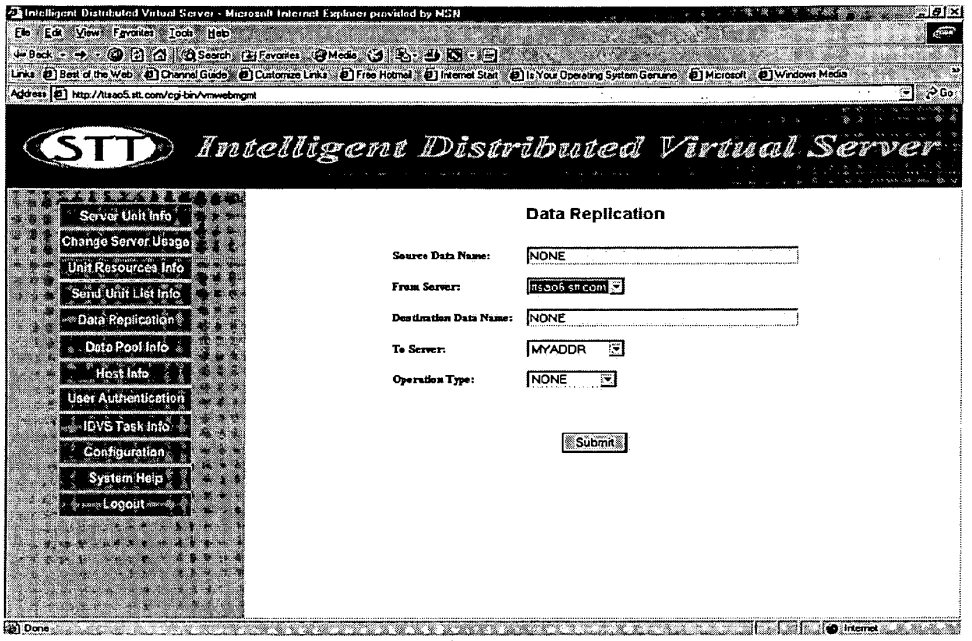

Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Data Replication
Source Data Name:
NONE
From Server:
Destination Data Name:
NONE
To Server:
MYADDR
Operation Type:
NONE
Submit

Fig. 8A

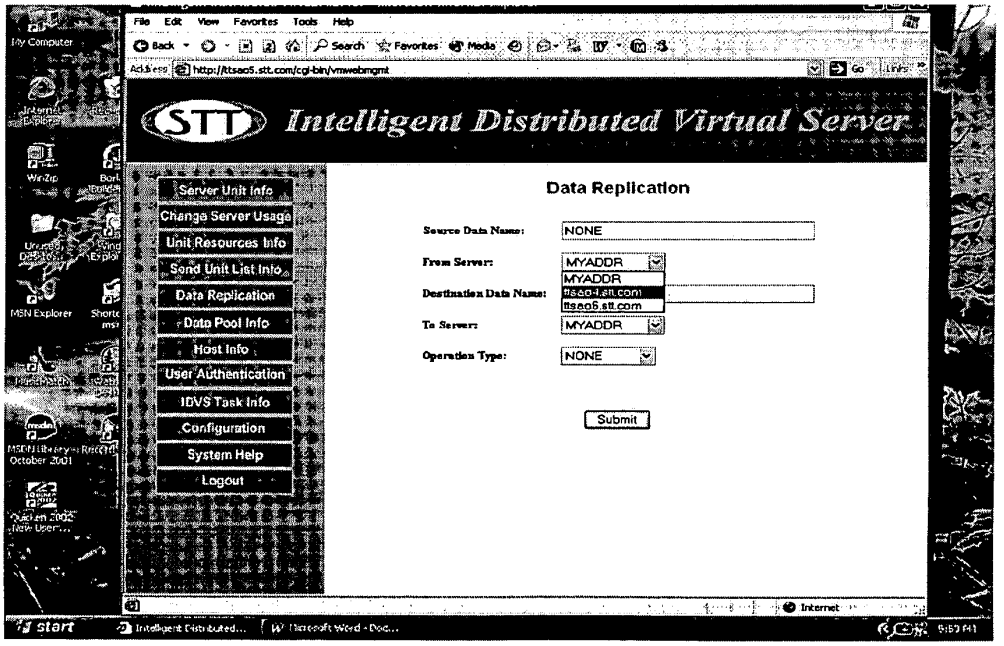

Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Data Replication
Source Data Name:
NONE
From Server:
MYADDR
Destination Data Name:
To Server:
MYADDR
Operation Type:
NONE
Submit

Fig. 8B

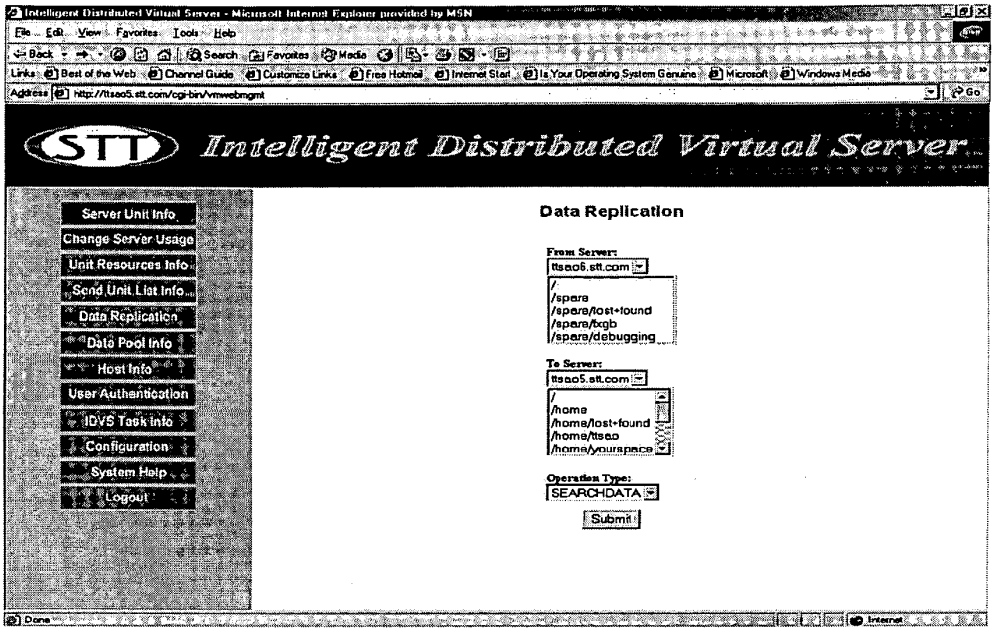

Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Data Replication
From Server:
ttsao6.stt.com
/
/spare
/spare/lost+found
/spare/fxgb
/spare/debugging
To Server:
ttsao5.stt.com
/
/home
/home/lost+found
/home/ttsao
/home/yourspace
Operation Type:
SEARCHDATA
Submit

Fig. 8C

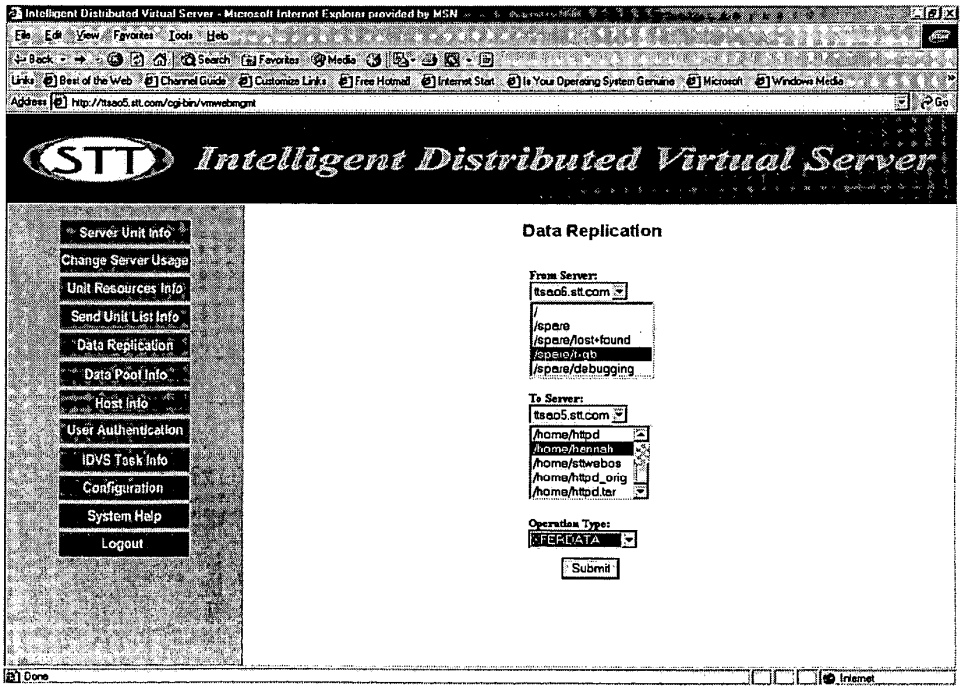

Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Data Replication
From Server:
ttsao6.stt.com
/
/spare
/spare/lost+found
/spare/fxgb
/spare/debugging
To Server:
ttsao5.stt.com
/home/httpd
/home/hannah
/home/sttwebos
/home/httpd_orig
/home/httpd.tar
Operation Type:
FERDATA
Submit

Fig. 8D

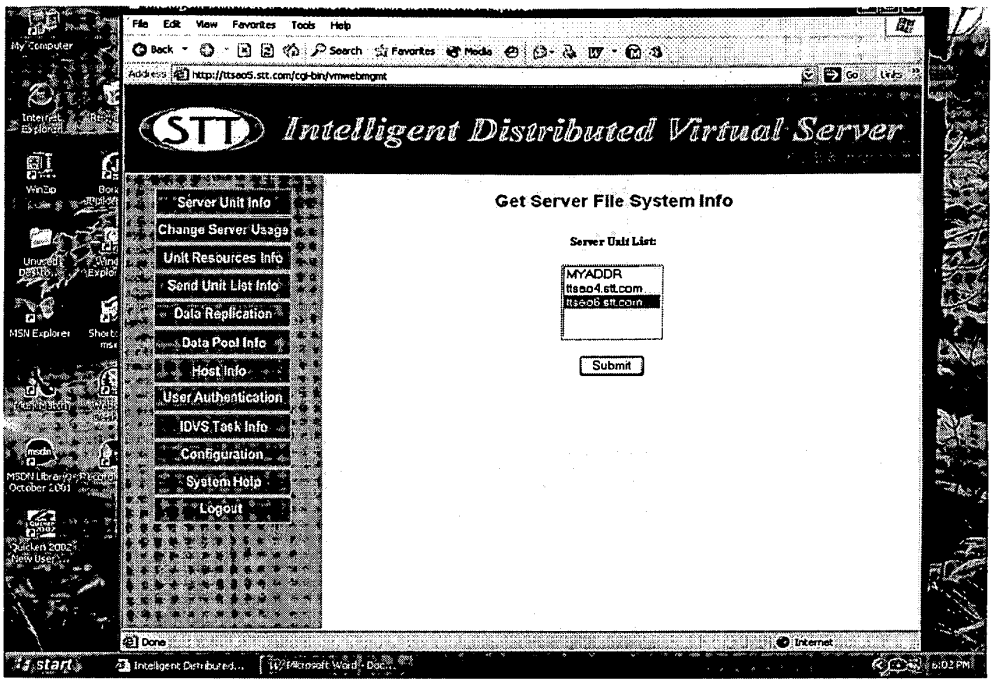
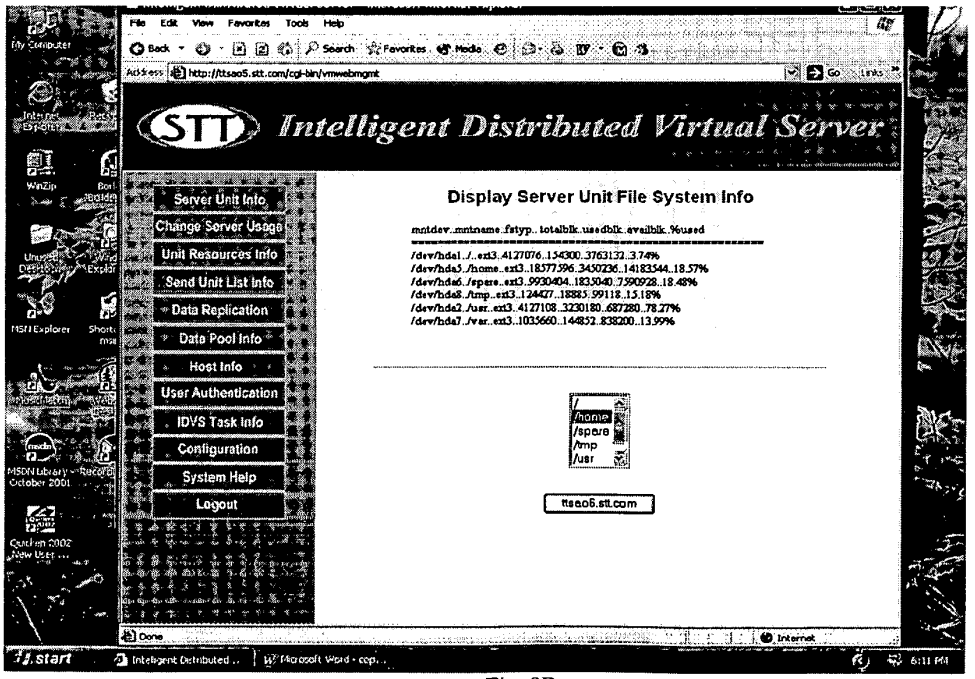

Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Get Server File System Info
Server Unit List:
MYADDR
ttsao4.stt.com
ttsao6.stt.com
Submit

Fig. 9A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Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Display Server Unit File System Info
/home
/spare
/tmp
/usr
ttsao6.stt.com

Fig. 9B

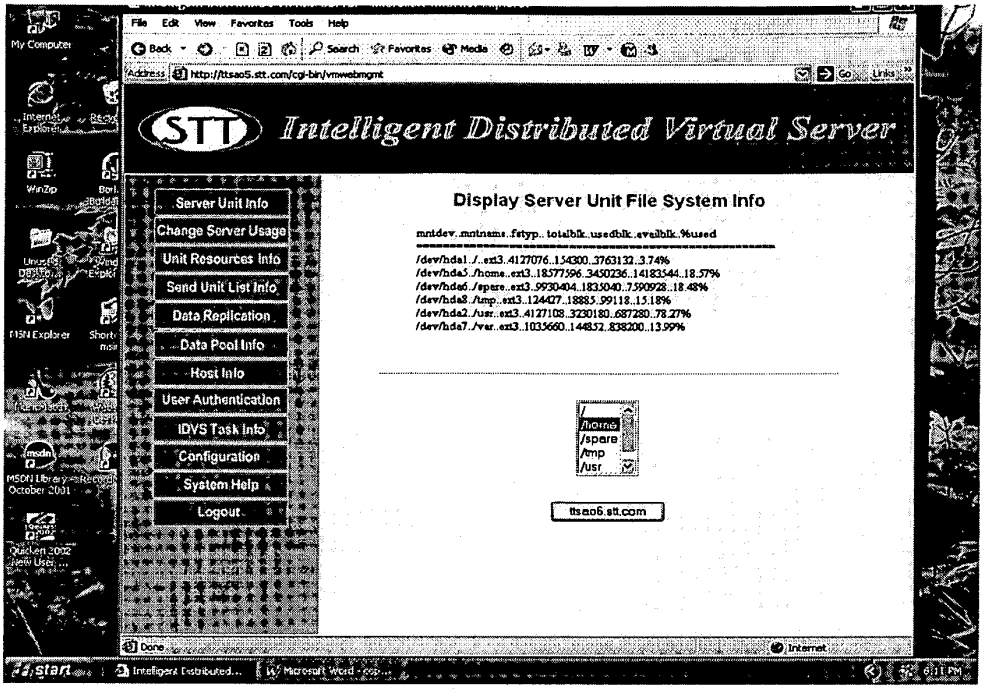

Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Display Server Unit File System Info
/dev/hda1 /..ext3..4127076..154300..3763132..3.74%
/dev/hda5 /home..ext3..18577596..3450236..14183544..18.57%
/dev/hda6 /spare..ext3..9930404..1835040..7590928..18.48%
/dev/hda8 /tmp..ext3..124427..18885..99118..15.18%
/dev/hda2 /usr..ext3..4127108..3230180..687280..78.27%
/dev/hda7 /var..ext3..1033660..144852..838200..13.99%
/
/home
/spare
/tmp
/usr
ttsao5.stt.com

Fig. 9C

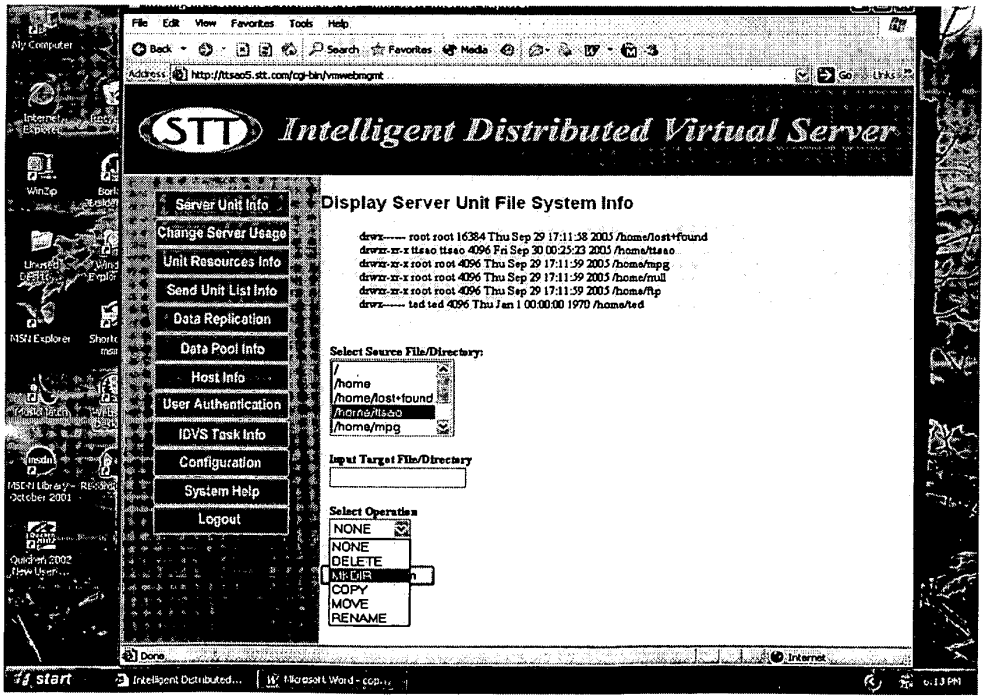

Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Display Server Unit File System Info
drwx------ root root 16384 Thu Sep 29 17:11:58 2005 /home/lost+found
drwxr-xr-x ttsao ttsao 4096 Fri Sep 30 00:25:23 2005 /home/ttsao
drwxr-xr-x root root 4096 Thu Sep 29 17:11:59 2005 /home/mpg
drwxr-xr-x root root 4096 Thu Sep 29 17:11:59 2005 /home/mail
drwxr-xr-x root root 4096 Thu Sep 29 17:11:59 2005 /home/ftp
drwx------ ted ted 4096 Thu Jan 1 00:00:00 1970 /home/ted
Select Source File/Directory:
/home
/home/lost+found
/home/ttsao
/home/mpg
Input Target File/Directory
Select Operation
NONE
NONE
DELETE
MKDIR
COPY
MOVE
RENAME

Fig. 9D

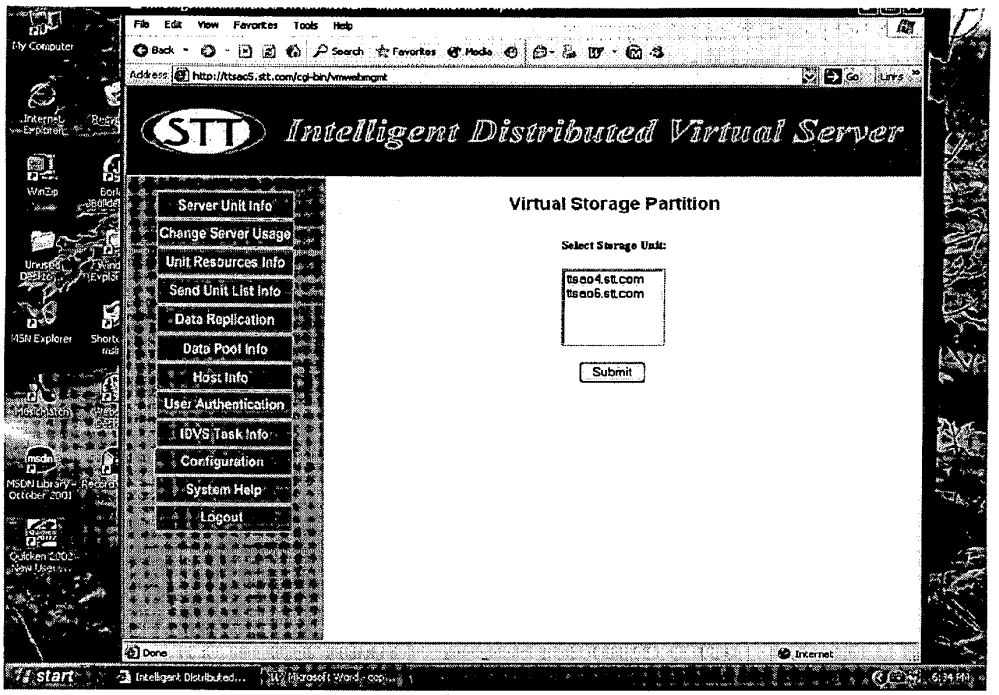


Fig. 10A

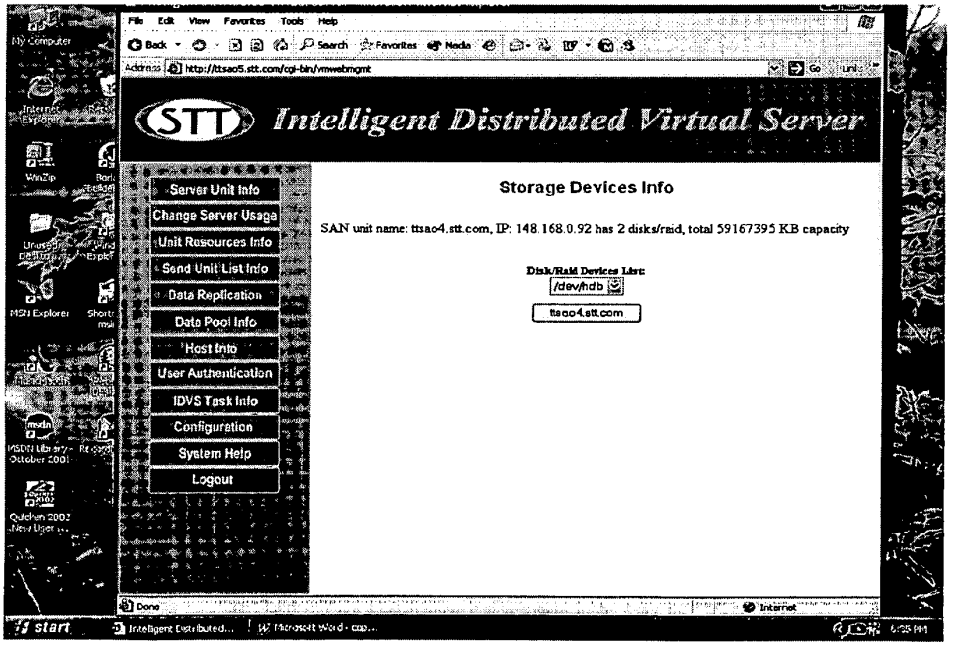


Fig. 10B

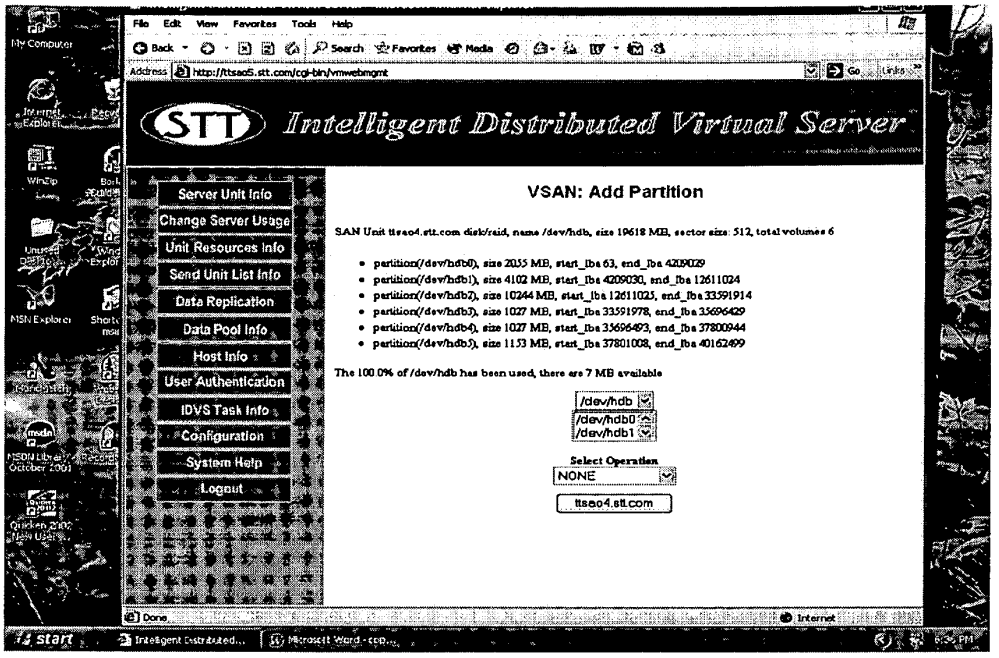


Fig. 10C

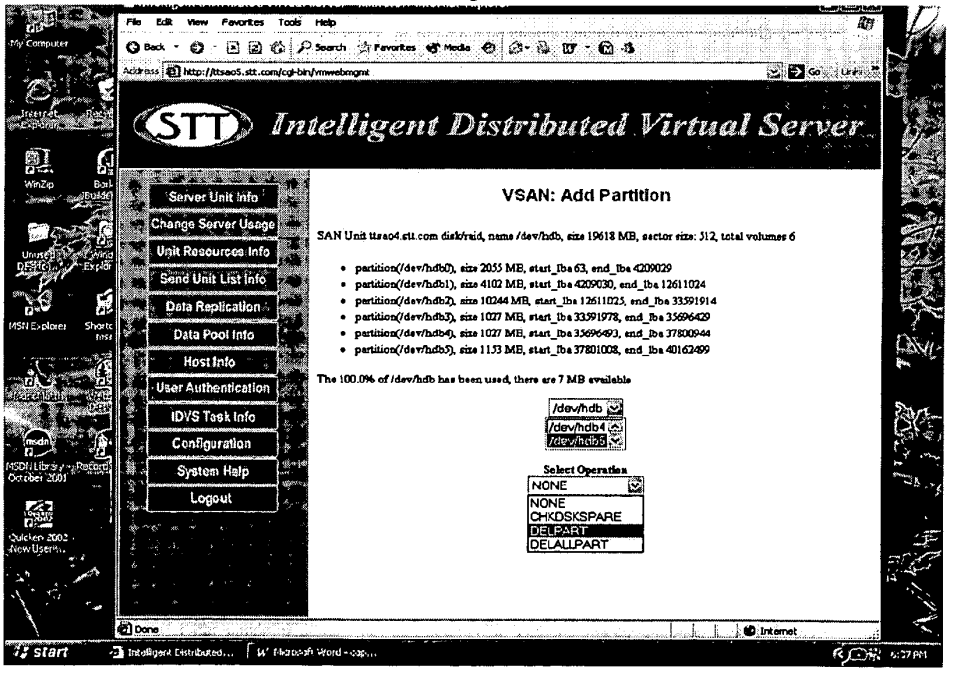


Fig. 10D

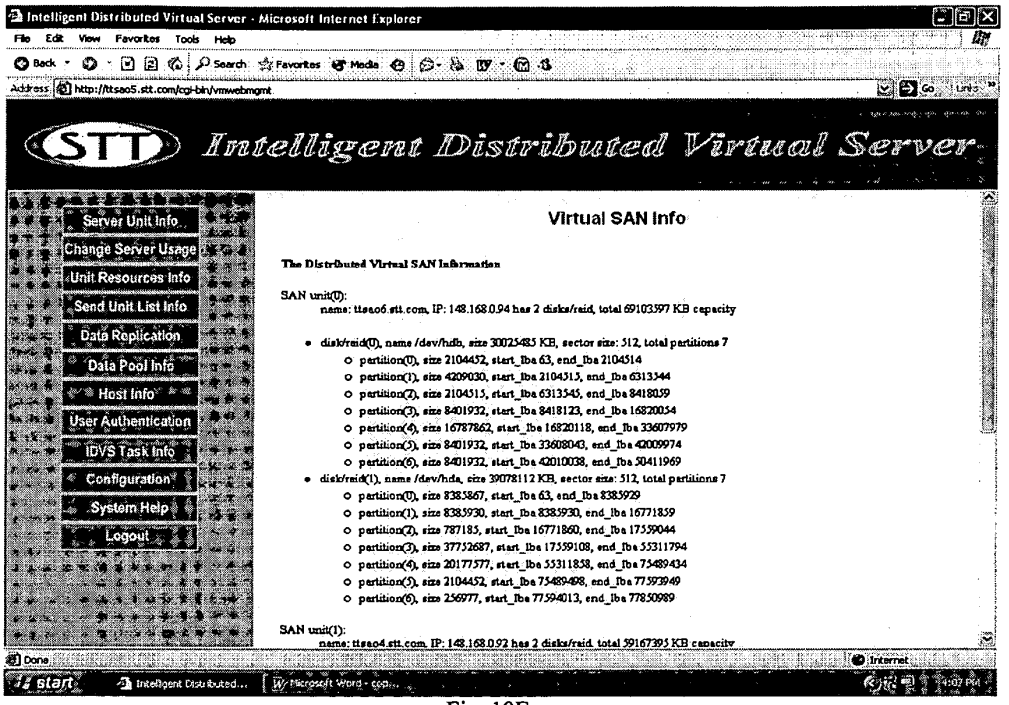


Fig. 10E

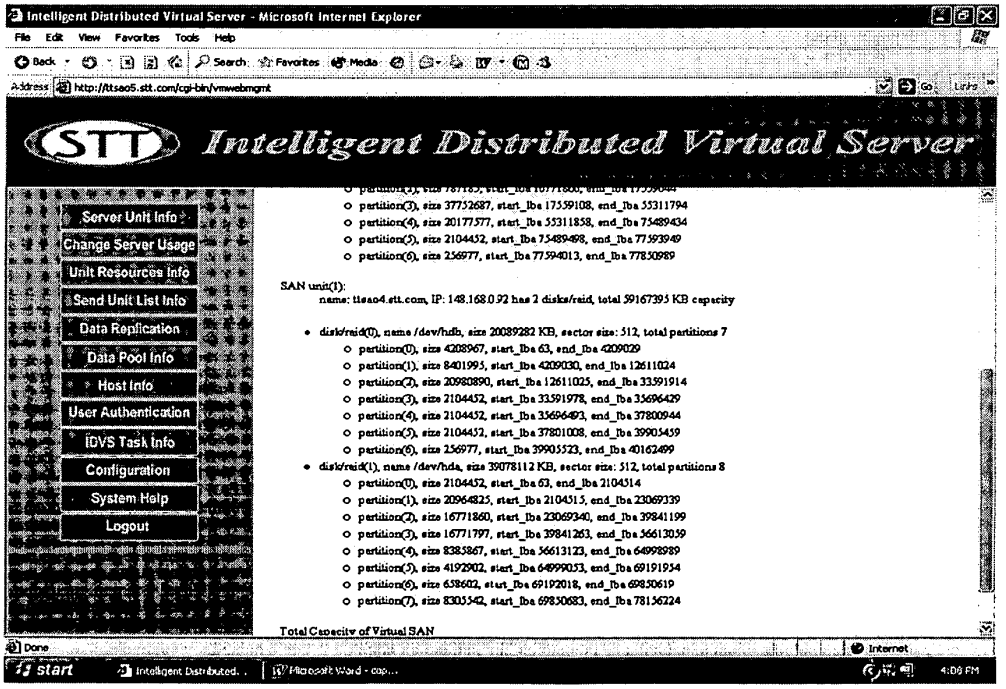


Fig. 10F

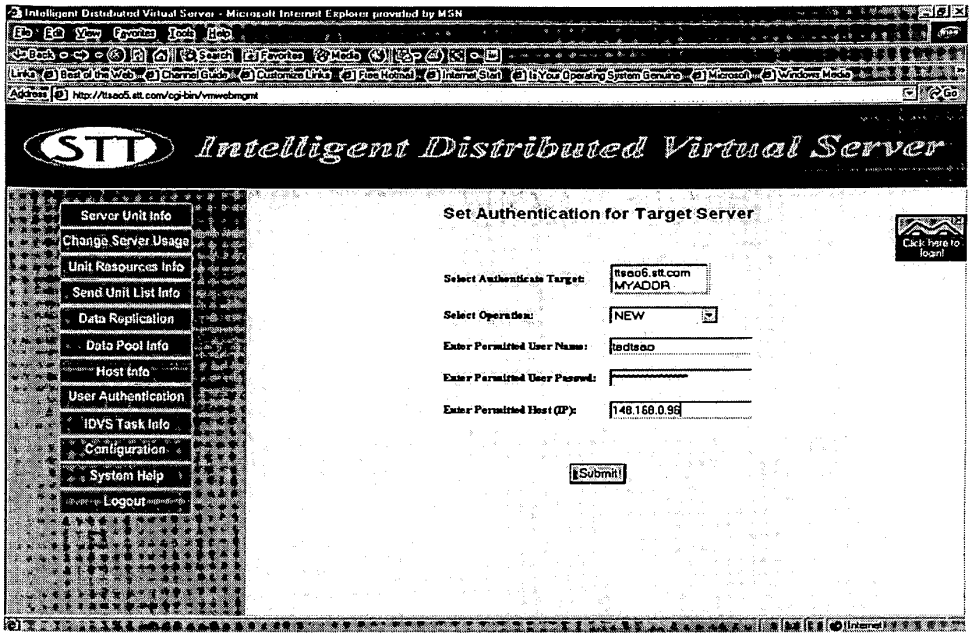


Fig. 11A

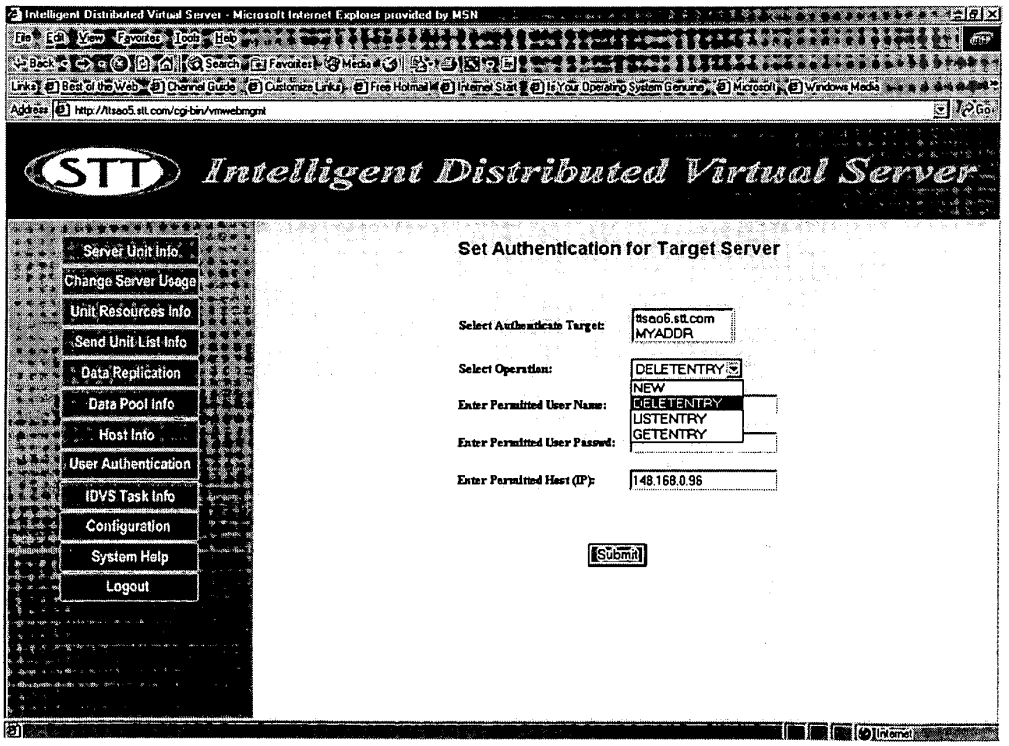


Fig. 11B

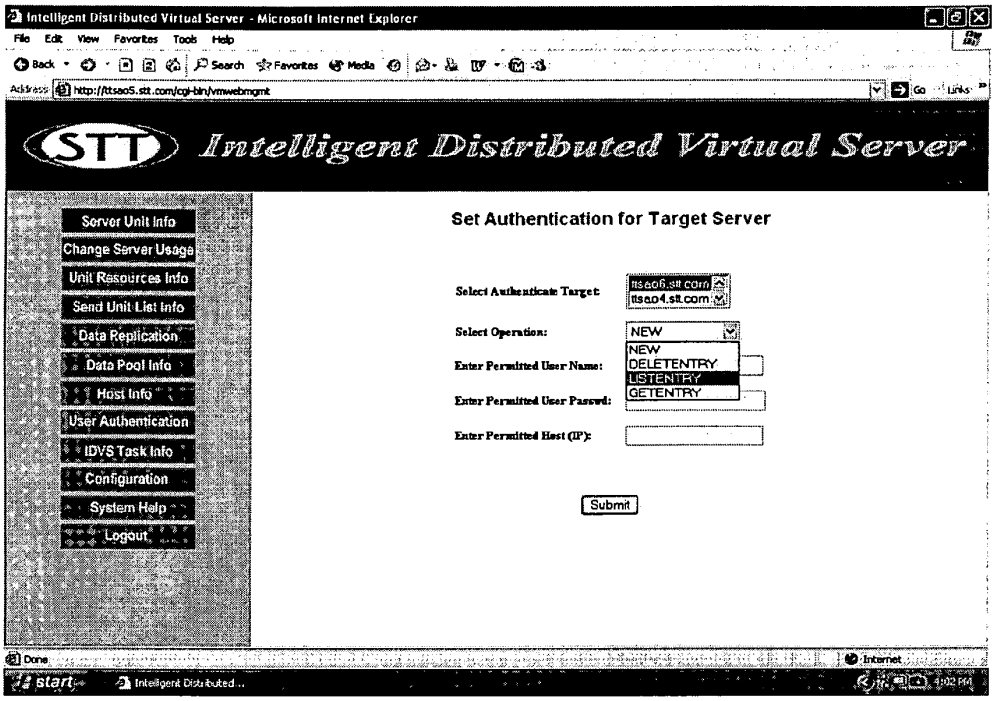

Intelligent Distributed Virtual Server - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://ttsao5.stt.com/cgi-bin/vmwebmgmt
Go Links
STT
Intelligent Distributed Virtual Server
Server Unit Info
Change Server Usage
Unit Resources Info
Send Unit List Info
Data Replication
Data Pool Info
Host Info
User Authentication
IDVS Task Info
Configuration
System Help
Logout
Set Authentication for Target Server
Select Authenticate Target:
ttsao6.stt.com
ttsao4.stt.com
Select Operation:
NEW
NEW
DELETENTRY
LISTENTRY
GETENTRY
Enter Permitted User Name:
Enter Permitted User Passwd:
Enter Permitted Host (IP):
Submit
Done
Internet
start
Intelligent Distributed ...

Fig. 11C

USE OF WIRELESS DEVICES' EXTERNAL STORAGE

CROSS REFERENCE TO PRIOR APPLICATION

This invention relates to the previous invention, application No. 60/401,238 of "Concurrent Web Based Multi-task Support for Control Management System". This invention also relates to previous invention, application No. 60/402,626 of "IP Based Distributed Virtual SAN".

FIELD OF THE INVENTION

This invention focuses on how a wireless device can actually use external storage provided by a storage server. This invention also includes how a wireless device can download data to its external storage.

BACKGROUND INFORMATION

Terminology:

The terminologies described in next few sections reflect the scope and are part of present invention.

The Internal Storage of a System:

The storage media such as hard disk drives, memory sticks, memory etc. is connected to a system directly through bus or a few inches of cable. Therefore, the storage media actually is a component of the system in an enclosure.

The External Storage of a System:

The external storage media is not a component of the system in the same enclosure. Therefore, they have to be connected through a connecting medium (e.g. a cable) such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or such as wireless medium and etc. The storage media of an external storage could be magnetic hard disk drives, solid state disk, optical storage drives, memory card, etc. and could be in any form such as Raid which usually consists of a group of hard disk drives.

The Storage Partition, its Volumes, and the Corresponding File System:

To effectively use storage system, each storage device usually needs to be partitioned into small volumes. After the partition, each of the volumes can be used to establish a file system on it. To simplify the discussion herein, the term of the storage volume, its corresponding file system, and the term of the partition of the storage device are often used without differentiation.

CCDSVM:

It is an abbreviation for a central controlled distributed scalable virtual machine system. The CCDSVM allows a control management station to control a group of systems and provide distributed services to a client system on the Internet, the Intranet, and an LAN environment.

ISP & ASP:

The ISP refers to Internet service provider and the ASP refers to application service provider.

FIGURES

FIG. **1** illustrates an embodiment of the instant application, the FIG. **1** is the same as FIG. **1** of the previous application of the "Concurrent Web Based Multi-task Support for Control Management System" with an exception of replacing a console host with a wireless device.

FIG. **2** is the same as FIG. **1** of the above except that it shows a more detailed storage system controlled by a server. In addition, multiple wireless devices are presented to access the storage system.

FIG. **3** shows a scheme of a wireless device downloading contents from an ISP/ASP or other web sites to an external storage allocated for the wireless device.

FIG. **4** is similar to the FIG. **1** of the previous application of the "IP Based Distributed Virtual SAN" with exception that each IP storage server provides a file system as external storage for each of the wireless devices instead of providing IP based virtual SAN service. Also, each host of mentioned FIG. **1** actually is replaced by a wireless device of present application.

Unless specified, the programming languages and the protocols used by each software modules of instant application, and the computing systems used in this invention are assumed to be the same as described in the previous patent applications.

In addition, in the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

BRIEF DESCRIPTION OF THE INVENTION

Today the wireless users commonly face a problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which are usually limited to 256 MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple gigabytes (GB) of storage for their wireless devices as well as allowing the users to use the GB storage for their multimedia applications, the storage of a server can be used as the external storage for the wireless devices. This technology has been briefly introduced in the previous parent patent applications.

Now let us examine how the external storage can actually be used by the wireless devices. First, let each server unit (e.g. the server **3** of the FIG. **2**) partitions its storage system into volume and each of the volumes will have multiple GB in size. Therefore, each user of the wireless devices can be exclusively assigned and access a specific storage volume. For example, if we need to provide each user a 4 GB storage space, then a 160 GB disk drive can support 40 users. Therefore, a 4096 GB storage system on the server unit can support a total of 1024 wireless devices for users. Further, any data on the wireless device can be transmitted to an assigned storage volume. In addition, the user of the wireless device also can download the multimedia data from an ISP or ASP to the assigned storage volume of a designated server unit through out-band approach shown in FIG. **3**. Finally, the user can use a web-browser, which has a functionality of invoking embedded video or music, to enjoy his/her stored multimedia contents.

These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures:

DESCRIPTION OF THE DRAWINGS

Referring now to FIG. **1**, it demonstrates a configuration comprising a network connecting a wireless device and a server. In the FIG. **1**, Net (**2**) represents a communication link, which may be combined with wireless and wired connection media and guarantee that the communication packets can be sent/received between the wireless device and the server. It is also assumed that the net (**2**) representing an communication infrastructure is built up in such way that a user of a wireless device can access and browse any web-site on the Internet, the Intranet, or a local area network (LAN).

In FIG. **1**, the console support software (**5**) on the server (**3**) can be configured to support web-based multi-tasks for the user of the wireless device (**1**) via a web browser **8**. Further, the user of the wireless device is able to perform creating structured layered files, directories, or folders, and perform data management operations, such as delete, move, copy, rename for data files or folders, directories and etc. on an assigned storage volume associated with the server (**3**).

In addition, the other software modules (**9**) of the wireless device (**1**) is configured to send data to or receive data from the other service modules (**7**) running on the server (**3**) via communication link (**2**) through a suitable IP or non-IP based protocol. The data being sent cold be a digital photo picture, a message and etc.

Also, the console supporting software (**5**) of the server (**3**) and the other software modules (**9**) of the wireless device (**1**) can be implemented with any suitable languages such as C, C++, Java, etc. depending on the implementation.

Besides, the web-browser (**8**) of the wireless device (**1**) can be implemented any suitable software. The web browser is configured to communication with web server software (**4**) on the server (**3**) with any other web server through the HTTP protocol.

On the other hand, FIG. **2** has demonstrated that the storage system **10** of a server **3** can be allocated to multiple wireless devices. First, the storage system (**10**) of the server (**3**) can be partitioned into multiple storage volumes (**11**) by administration staff through a web-console (**13**) of a console host (**12**).

Second, the storage system (**10**) of the server (**3**) can be partitioned in such way that each of the wireless devices can be allocated with a storage volume having a desired size, therefore, the server **3** can support maximum numbers of the wireless devices.

In addition, the storage connection media could be any kind of cables, such as SCSI cable, IP cable, Fiber cable etc. or could be wireless communication media. The storage system itself could be various types.

Finally, the storage system **10** can be accessed by each of the wireless devices through IP or non-IP based network and protocols.

FIG. **3** has demonstrated that a user from a web-browser (**8**) on a wireless device (**1**) can download data from a known web-site (**12**) to his/her allocated external storage (**10**) on the server (**3**). The dash-lined path (a) represents a communication channel between the wireless device (**1**) and a remote downloading web-site (**12**) that provides downloading contents. The dash-lined path (b) represents a communication channel between the wireless devices (**1**) and the storage server (**3**). The dash-lined path (c) represents a communication channel between the server **3** and the remote web-server (**12**).

THE DETAILED DESCRIPTION OF THE INVENTION

The Use of the External Storage by the Wireless Device:

The FIG. **2** shows a simplified diagram of the wireless devices (**1** of FIG. **2**) using the external storage system (**10** of FIG. **2**) of the server (**3** of FIG. **2**) for effectively resolving the storage limitation problem for the wireless devices (**1** of FIG. **2**).

Partition Storage Volumes (FIG. **2**)

With this invention, the entire storage (**10** of FIG. **2**) on the server (**3** of FIG. **2**) needs to be partitioned into suitable size of volumes (**11** of FIG. **2**) such as 4 GB for each volume. This will allow the server **3** to serve maximum number of the wireless devices (**1** of FIG. **2**). With the web console support software (**5** of FIG. **2**) of the server (**3** of FIG. **2**), tasks of partitioning the storage system **10** can be done through a web-console (**13** of FIG. **2**) on a console host (**12** of FIG. **2**) by an administrative staff.

In order to support storage partitioning, first the console support software (**5** of FIG. **2**) of the server (**3** of FIG. **2**) must send storage information of the server (**3** of FIG. **2**) to the web-console (**13** of FIG. **2**) of the console host (**12** of FIG. **2**). The storage information includes each storage device's name and total size etc. Second, based on the received storage information the administration staff on the console host (**12** of FIG. **2**) can use a web-console (**13** of FIG. **2**) to fill out and send the storage partition information to the console support software (**5** of FIG. **2**) of the server (**3** of FIG. **2**). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from the web-console (**13** of FIG. **2**) of the console host (**12** of FIG. **2**), the console support software (**5** of FIG. **2**) of the server (**3** of FIG. **2**) performs the actual storage partition to divide the entire storage into multiple small volumes. Finally, for each small storage volume, a corresponding file system could be built up.

Assign Storage Volumes (FIG. **2**):

Each of the storage volumes together with its corresponding file system (**11** of FIG. **2**) on the storage system (**10** of FIG. **2**) of the server (**3** of FIG. **2**) needs to be exclusively allocated and exported to a specific wireless device (**1** of FIG. **2**) by the console support software (**5** of FIG. **2**) of the server (**3** of FIG. **2**).

Data and Storage Volume Management (FIG. **2**)

With the support of the console support software modules (**5** of FIG. **2**) of the server (**3** of FIG. **2**), the user of the wireless device (**1** of FIG. **2**) can via the web-browser **8** of FIG. **2** setup folder/directory structure on the file system of his/her assigned external storage volume (**11** of FIG. **2**). In addition, the user of the wireless device (**1** of FIG. **2**) can via the web-browser **8** of FIG. **2** perform all data management operations such as delete, copy, move, rename etc. for file system.

In order to support such data management on the external storage (**10** of FIG. **2**) allocated to the wireless device (**1** of FIG. **2**) via the web-browser **8** of FIG. **2**, first the console support software modules (**5** of FIG. **2**) of the server **3** of FIG. **2** must communicate with the web-browser (**8** of FIG. **2**) of the wireless device (**1** of FIG. **2**). Therefore, the user from the web-browser (**8** of FIG. **2**) of the wireless device (**1** of FIG. **2**) can choose desired data management operations and send operation information to the console support software modules (**5** of FIG. **2**) of the server **3** of FIG. **2**. The mentioned operations include establishing folder/directory, copying, moving, or reaming data file etc. Second, upon receiving the data management operation, the console support software modules (**5** of FIG. **2**) of the server **3** of FIG. **2** actually process/executes these requested operations for the assigned file system of an allocated storage volume (**11** of FIG. **2**) on the server **3** of FIG. **2**.

Store Data from Wireless Device into External Storage (FIG. **2**)

To store the data such as digital photo pictures or messages into the file system on the allocated storage (**10** of FIG. **2**) of the server (**3** of FIG. **2**), the other software modules (**9** of FIG. **2**) of the wireless device (**1** of FIG. **2**) need to send these data to the other service modules (**7** of FIG. **2**) of the server (**3** of FIG. **2**) via communication link between them. Upon receiving the data, the other service modules (**7** of FIG. **2**) of the server (**3** of FIG. **2**) write these data to the file system of the allocated storage volume (**11** of FIG. **2**) for the wireless

device. The protocol used between these two communication entities could be either IP or non-IP based protocol.

Download Data from a Remote Web Server Site into Allocated Storage Volume (FIG. **3**)

If a user of the wireless device (**1** of FIG. **3**) wants to download a data from a remote web server (**12** of FIG. **3**) into the allocated file system (**11** of FIG. **3**) of the allocated storage (**10** of FIG. **3**) on the server (**3** of FIG. **3**), the following steps are required:

1) The user of the wireless device (**1** of FIG. **3**) via a web-browser (**8** of FIG. **3**) accesses a remote downloading web server site (**12** of FIG. **3**) to obtain information for the downloading via path (a) of FIG. **3**. For example, the user accesses a web-page which contains the data name for the downloading.

2) The other software modules (**9** of FIG. **3**) of the wireless device (**1** of FIG. **3**) obtain the downloading information, which becomes available in the cached web-pages on the wireless device (**1** of FIG. **3**) after the web-browser (**8** of FIG. **3**) accessing the web site (**12** of FIG. **3**).

3) The other software modules (**9** of FIG. **3**) of the wireless device (**1** of FIG. **3**) send the obtained downloading information to other service modules (**7** of FIG. **3**) of the storage server (**3** of FIG. **3**) via path (b) of FIG. **3**.

4) Upon receiving the downloading information from the wireless device (**1**), the other service module (**7** of FIG. **3**) of the storage server (**3** of FIG. **3**) sends a web download request to the web-site (**12** of FIG. **3**) via path (c) of FIG. **3** and receives the downloading data streams from the web server of the web-site (**12** of FIG. **3**).

5) Upon receiving downloading data streams, the other service modules (**7** of FIG. **3**) of the storage server (**3** of FIG. **3**) write the data streams into the allocated file system (**11** of FIG. **3**) on the server (**3** of FIG. **3**) for the wireless device (**1** of FIG. **3**).

Retrieve Data from Allocated Storage for the Wireless Device

1) If a web-browser (**8** of FIG. **2**) on a wireless device **1** of FIG. **2** has embedded video or music functionality, a user of the wireless device (**1** of FIG. **2**) can use the browser to retrieve and play multimedia data file such as video or music stored in the allocated storage volume (**10** of FIG. **2**) located on the server (**3** of FIG. **2**).

2) If there is a need, the other software module (**9** of FIG. **2**) of the wireless device (**1** of FIG. **2**) also can retrieve data file from the allocated file system of the allocated storage volume (**11** of FIG. **2**) on the server (**3** of FIG. **2**).

Support External Storage for a Large Number of the Wireless Devices

If there is a need to provide each user a 2 GB of storage space, then a 160 GB disk drive can support 80 users. A 4096 GB (4 Tera Bytes) storage system on the server unit can support 2024 user. Each of the server units only can efficiently support a limited size of the storage system. In order to support a large number of the wireless devices, such as for 500,000 wireless devices, a larger number of the servers is required, in this case 250 servers is required. In order to let a larger number of the servers to effectively support the larger number of the wireless devices, an infrastructure like CCDSVM is desirable, which has been described in previous patent applications. With the CCDSVM the control management station can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

What is claimed is:

1. A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device;

creating a file system for the storage space allocated for the wireless device;

establishing a link for the wireless device access to the storage space; and

updating the file system whenever a user of the wireless device performs an operation to the storage space,

wherein the updating of the file system comprises

updating the file system for storing a file therein, the storing of a file including to download a file from a remote web server, according to download information for the file cached in the wireless device received therefrom, directly into the storage device when the user via a web browser executed on the wireless device to perform an operation of downloading the file from the remote web server to the storage space instead of downloading the file into the wireless device itself.

2. A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish a link for the each of the wireless devices access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs an operation to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices,

wherein the updating of the file system comprises

updating the file system for storing a file therein, the storing of a file including to download a file from a remote web server, according to download information for the file cached in the each of the wireless devices received therefrom, directly into the storage device allocated thereto when the user via a web browser executed on the each of the wireless devices to perform an operation of downloading the file from the remote web server to the storage space instead of downloading the file into the each of the wireless devices itself; and

the wireless devices, wherein each of the wireless devices is operable access to the storage space allocated to the each of the wireless devices.

3. The method as recited in claim **1**, wherein the operation to the storage space comprises creating from the wireless device a folder in the storage space.

4. The method as recited in claim **1**, wherein the operation to the storage space comprises deleting or moving or copying or renaming, from the wireless device, a file or a folder being stored in the storage space.

5. The method as recited in claim **1**, wherein the link is wireless.

6. The method as recited in claim **5**, further comprising: facilitating a console for an administrator of a service provider to partition a storage device for creating the storage space according to the predefined capacity for the user of the wireless device, wherein the service provider provides services for the wireless device.

7. The system as recited in claim 2, wherein the operation to the storage space comprises creating from the each of the wireless devices a folder in the storage space.

8. The system as recited in claim 2, wherein the operation to the storage space comprises deleting or moving or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

9. The system as recited in claim 2, wherein the link is wireless.

10. The system as recited in claim 9, wherein the server is further configured to facilitate a console for an administrator of a service provider to partition a storage device for creating the storage space according to the predefined capacity for a user of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

11. A non-transitory computer-readable storage medium comprising;

computer program instructions that, when executed by a server, configure the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish a link for the each of the wireless devices access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs an operation to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices,

wherein the updating of the file system comprises

updating the file system for storing a file therein, the storing of a file including to download a file from a remote web server, according to download information for the file cached in the each of the wireless devices received therefrom, directly into the storage device allocated thereto when the user via a web browser executed on the each of the wireless devices to perform an operation of downloading the file from the remote web server to the storage space instead of downloading the file into the each of the wireless devices itself.

12. The storage medium of claim 11, wherein the program instructions further configure the server to facilitate a console for an administrator of a service provider to partition a storage device for creating the storage space for a user of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

13. The storage medium of claim 11, wherein the operation to the storage space further comprises deleting or moving or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

14. The storage medium of claim 11, wherein the operation to the storage space comprise creating from the each of the wireless devices a folder in the storage space.

15. The method as recited in the claim 1, wherein said for the wireless device access to the storage space comprises:

from the wireless device to retrieving a file from the storage device for access to a digital picture, a video, a music or a message being stored therein.

16. The system as recited in the claim 2, wherein said for the wireless device access to the storage space comprises:

from the wireless device to retrieve a file from the storage device for access to a digital picture, a video, a music or a message being stored therein.

17. The storage medium of claim 11, wherein said for the wireless device access to the storage space comprises:

from the wireless device to retrieve a file from the storage device for access to a digital picture, a video, a music or a message being stored therein.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 8,606,880 B2
APPLICATION NO. : 10/726897
DATED : December 10, 2013
INVENTOR(S) : Sheng Tai Ted Tsao

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Delete the title page and substitute therefore with the attached title page showing the corrected number of drawing sheets in patent.

In the Drawings:

FIG. 5 through FIG. 11C have been deleted.

In the Claims:

A) in column 6 line 16, column 6 line 43, column 7 line 36 - column 8 line 1, column 8 lines 22 – 23, column 8 lines 27 – 28, column 8 lines 32 – 33, please replace “storage device” with ---storage space---.

Signed and Sealed this
Twenty-fifth Day of February, 2014

Michelle K. Lee

Michelle K. Lee
Deputy Director of the United States Patent and Trademark Office

(12) **United States Patent**
Tsao

(10) **Patent No.: US 8,606,880 B2**
(45) **Date of Patent: Dec. 10, 2013**

(54) **USE OF WIRELESS DEVICES' EXTERNAL STORAGE**

(75) Inventor: **Sheng (Ted) Tai Tsao**, San Jose, CA (US)

(73) Assignee: **Sheng Tai (Ted) Tsao**, Fremont, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 2766 days.

(21) Appl. No.: **10/726,897**

(22) Filed: **Dec. 4, 2003**

(65) **Prior Publication Data**

US 2010/0005153 A1 Jan. 7, 2010

(51) **Int. Cl.**
G06F 15/16 (2006.01)

(52) **U.S. Cl.**
USPC **709/219**; 709/203; 709/226; 455/412.1; 455/899

(58) **Field of Classification Search**
USPC 709/200, 203, 217, 219, 226, 245; 455/412.1, 899
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,351,776 B1 * 2/2002 O'Brien et al. 709/245
6,356,941 B1 * 3/2002 Cohen 709/219
6,714,968 B1 * 3/2004 Prust 709/219
6,735,623 B1 * 5/2004 Prust 709/219
6,839,743 B2 * 1/2005 Shim 709/217
6,985,927 B2 * 1/2006 O'Brien et al. 709/213
7,506,034 B2 * 3/2009 Coates et al. 709/219
7,650,621 B2 * 1/2010 Thomas et al. 725/87
7,894,803 B2 * 2/2011 Kamada 455/414.3
2002/0059621 A1 * 5/2002 Thomas et al. 725/87
2002/0123336 A1 * 9/2002 Kamada 455/420
2002/0128036 A1 * 9/2002 Yach et al. 455/552
2002/0133597 A1 * 9/2002 Jhingan et al. 709/228
2003/0191716 A1 * 10/2003 Woods et al. 705/50

* cited by examiner

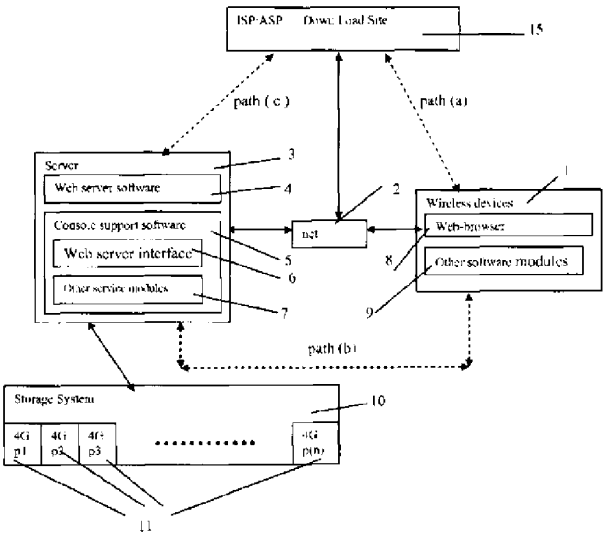
Primary Examiner — El Hadji Sall

(57) **ABSTRACT**

Adapting web-based external storage, wireless device can posses huge amount of storage that current any wireless device's internal storage can not provide. To effectively let the storage server providing external storage (file system) for wireless device. the storage of a storage server need to be partitioned into multiple small storage volume and need to be exported to each specific wireless device. The console support software coupled with web-server software of a server provides both users of wireless device and console through web-browser to perform tasks of creating and utilizing external storage (file system). To support larger number of wireless devices with external storage, a central controlled distributed scalable virtual machine infrastructure can be deployed. The larger number of storage server controlled by a central control system can satisfy unlimited wireless devices external storage needs.

17 Claims, 4 Drawing Sheets

Wireless out-band download



PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5288800

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
STT WEBOS, INC.	12/18/2018

RECEIVING PARTY DATA

Name:	SYNKLOUD TECHNOLOGIES, LLC
Street Address:	124 BROADKILL ROAD, #415
City:	MILTON
State/Country:	DELAWARE
Postal Code:	19968

PROPERTY NUMBERS Total: 8

Property Type	Number
Patent Number:	9219780
Patent Number:	9098526
Patent Number:	8868690
Patent Number:	8856195
Patent Number:	8606880
Patent Number:	9239686
Patent Number:	10015254
Application Number:	15992091

CORRESPONDENCE DATA

Fax Number:

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NAME OF SUBMITTER:	SHENG TAI TSAO
SIGNATURE:	/shengtai tsao/
DATE SIGNED:	12/18/2018
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4
source=Patent-Assigment-by-STT#page1.tif
source=Patent-Assigment-by-STT#page2.tif
source=Patent-Assigment-by-STT#page3.tif
source=Patent-Assigment-by-STT#page4.tif

EXHIBIT B

PATENT ASSIGNMENT AGREEMENT

WHEREAS, **STT WebOS, LLC**, having a place of business at 3906 Borgo Common, Fremont, CA 94538 U.S.A. (hereinafter, "Seller") is the sole and exclusive owner of certain United States and/or foreign patents and/or patent applications listed in Schedule A annexed hereto (collectively referred to as the "Patents"); and

WHEREAS **SYNKLOUD TECHNOLOGIES, LLC**, having a place of business at 124 Broadkill Road, #415 Milton, DE 19968 U.S.A. (hereinafter, "Purchaser") is desirous of acquiring the right, title and interest in, to and under the said Patents (and all foreign counterparts and related foreign patents).

Now, Therefore,

For good and valuable consideration, the receipt of which is hereby acknowledged, Seller does hereby sell, assign, transfer and set over to Purchaser, the Patents aforesaid, and any inventions claimed in said Patent, any reissue or reissues of said Patents already granted and which may be granted, any certificates of reexamination already granted and which may be granted the same to be held and enjoyed by Purchaser for its own use and enjoyment, and for the use and enjoyment of its successors, assigns or other legal representatives, to the end of the term or terms for which said Patents are or may be granted, reissued or extended as fully and entirely as the same would have been held and enjoyed by Seller, if this assignment and sale had not been made; together with all claims for damages by reason of past, current, and future infringement and/or provisional rights under said Patents, with the right to sue for, and collect the same for its own use and behalf, and for the use and behalf of its successors, assigns or other legal representatives.

And, Seller, hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all Letters Patents of the United States on said inventions to Purchaser as assignee of the entire interest, and hereby covenants that Seller has full right to convey the entire interest herein assigned, and that, except as otherwise provided between the Parties, Seller has not executed, and will not execute, any agreements in conflict therewith.

In Witness Whereof, Seller has caused this Patent Assignment Agreement to be executed by its duly authorized representative.

STT WebOS, LLC.

By: _____

Name: SHENG TAI (TED) TSAO

Title: PRESIDENT

Date: 12/17/2018

State of _____

County of _____

On this _____ day of _____, 2018 before me personally appeared _____, to me known to be the person described herein and who executed the foregoing instrument, and acknowledged that he executed the same knowingly and willingly and for the purposes therein contained.

Witness my hand and Notarial seal the day and year immediately above written.

Please see attachment for notary

_____

Notary Public

My Commission Expires:

Patent Assignment Agreement

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of ALAMEDA)

On DEC 17 2018 before me, HONG YOU NOTARY PUBLIC
(insert name and title of the officer)

personally appeared SHENG TAI TSAO,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

HONG YOU
Notary Public - California
Alameda County
Commission # 2262853
My Comm. Expires Oct 15, 2022

Signature _____ (Seal)

SCHEDULE A

Country	Application No.	Filing Date	Patent No.	Issued Date	Status	Title
US	14/623476	2015-02-16	9219780	2015-12-22	Issued	Method and system for wireless device access to external storage
US	14/150106	2014-01-08	9098526	2015-08-04	Issued	Method and system for wireless device access to external storage
US	14/079831	2013-11-14	8868690	2014-10-21	Issued	Method and system for wireless device access to external storage
US	14/153052	2014-01-12	8856195	2014-10-07	Issued	Method and system for wireless device access to external storage
US	10/726897	2003-12-04	8606880	2013-12-10	Issued	Method and system for wireless device access to external storage
US	14/036744	2013-09-25	9239686	2016-01-19	Issued	Method and system for wireless device access to external storage
US	14/977,509	2015-12-21	10,015,254	2018-07-03	Issued	System and method for wireless device access to external storage
US	15/992,091	2018-05-09			Pending	System and method for wireless device access to external storage

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT5080053

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
TS PATENTS LLC	08/02/2018

RECEIVING PARTY DATA

Name:	STT WEBOS, INC.
Street Address:	3906 BORGO COMMON
City:	FREMON
State/Country:	CALIFORNIA
Postal Code:	94538

PROPERTY NUMBERS Total: 33

Property Type	Number
Patent Number:	8812682
Patent Number:	9201961
Patent Number:	8892742
Patent Number:	9009314
Patent Number:	9015321
Patent Number:	9307055
Patent Number:	8745193
Patent Number:	8566463
Patent Number:	7418702
Patent Number:	9288266
Patent Number:	8909976
Patent Number:	9106677
Patent Number:	8903963
Patent Number:	8688772
Patent Number:	8639788
Patent Number:	8473596
Patent Number:	7379990
Patent Number:	9323757
Patent Number:	9317510
Patent Number:	9146932

Property Type	Number
Patent Number:	9390094
Patent Number:	8341258
Patent Number:	8589527
Patent Number:	8812640
Patent Number:	7945652
Patent Number:	8577839
Patent Number:	8977722
Patent Number:	9219780
Patent Number:	9239686
Patent Number:	9098526
Patent Number:	8868690
Patent Number:	8856195
Patent Number:	8606880

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 408-813-0536
Email: ted.tsao@sttwebos.com
Correspondent Name: SHENG TAI ("TED") TSAO
Address Line 1: 3906 BORGO COMMON
Address Line 4: FREMON, CALIFORNIA 94538

NAME OF SUBMITTER:	SHENG TAI TSAO
SIGNATURE:	/shengtai tsao/
DATE SIGNED:	08/02/2018
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 4
source=TS_Patents-Assgin-2-STT-WEBOS#page1.tif
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source=TS_Patents-Assgin-2-STT-WEBOS#page3.tif
source=TS_Patents-Assgin-2-STT-WEBOS#page4.tif

PATENT ASSIGNMENT AGREEMENT

This Patent Assignment Agreement (the "Agreement") is entered into effect on July 18, 2018 (the "Effective Date") among Sheng Tai "Ted" Tsao, STT WEBOS, Inc. ("STT", a Delaware corporation), and TS Patents LLC ("TS Patents", a California limited liability company) (collectively the "Parties"), for assignment of the patents listed in Exhibit A (the "Patents") as well as all pending and future patent applications claiming benefits of one or more of the Patents (the "Applications").

Ted is the majority shareholder and President of STT and is a sole owner of TS Patents, yet STT does not have any percentage of ownership over the TS Patent, but maintained a good business relationship through agreement and contract. Ted is the sole inventor listed in all of the Applications and all but one of the Patents. Ted has assigned some of the Patents to STT. By this Agreement, Ted hereby assigns to STT the Patents and Applications that have not been assigned to STT, as his further investment in STT.

STT has assigned the Patents to TS Patents on January 19, 2017 for good business reasons. Now for other good consideration, TS Patents hereby assigns all the Patents and Applications back to STT ("Assignee") except the Patent No. **9,280,547, 8,799,473, 8,713,442, and 8,396,891.**

The word "assign" is used in this Agreement to mean assigning 100% of the Ted's and TS Patents' right, title and interest in the Patents and Applications to the Assignee for the entire term of the Patents and any reissues or extensions and for the entire terms of any patents, reissues or extensions that may issue from foreign applications, divisions, continuations in whole or part or substitute applications filed claiming the benefit of the Patents or Applications. The right, title and interest thus assigned is to be held and enjoyed by the Assignee and Assignee's successors as fully and exclusively as it would have been held and enjoyed by the Ted had the assignment not been made.

The Parties hereby agree that, upon the execution of the Agreement, STT shall have the right, title and interest in the Patents and Applications. The Parties hereby authorize the United States Patent and Trademark Office to issue any patents resulting from any of the Applications to STT.

[End of Agreement; Signatures on the Next Page]

Ted (Sheng Tai "Ted" Tsao):

Sheng Tai "Ted" Tsao

STT WEBOS, Inc.:

Sheng Tai "Ted" Tsao
Chief Executive Officer

TS Patents LLC:

Sheng Tai "Ted" Tsao
General Manager

Exhibition A (Patents List)

1: Multitasking Family:

	Patent No.	Issue Date	Priority Date	Application No.	Filing Date
1)	8,812,682	08/19/2014	8/6/2002	13/345,581	01/06/2012
2)	9,201,961	12/01/2015	8/6/2002	13/625,121	09/24/2012
3)	8,799,473	08/05/2014	8/6/2002	12/075,314	03/04/2008
4)	8,892,742	11/18/2014	8/6/2002	13/448,807	04/17/2012
5)	9,009,314	04/14/2015	8/6/2002	13/154,109	06/06/2011
6)	9,015,321	04/21/2015	8/6/2002	12/079,521	03/27/2008
7)	9,307,055	04/05/2016	8/6/2002	14/513,695	10/14/2014
8)	8,745,193	06/03/2014	8/6/2002	13/420,954	03/15/2012
9)	8,566,463	10/22/2013	8/6/2002	12/079,482	03/27/2008
10)	7,418,702	09/26/2008	8/6/2002	10/713,904	08/06/2002

2: Centralized Cloud Operations Family:

	Patent No.	Issue Date	Priority Date	Application No.	Filing Date
1)	9,288,266	03/15/2016	08/12/2002	14/511,129	10/09/2014
2)	8,909,976	12/09/2014	08/12/2002	13/663,710	10/30/2012
3)	9,106,677	08/11/2015	08/12/2002	14/530,613	10/31/2014
4)	8,903,963	12/02/2014	08/12/2002	13/916,445	06/12/2013
5)	8,688,772	04/01/2014	08/12/2002	12/009,936	01/23/2008
6)	8,639,788	01/28/2014	08/12/2002	12/013,813	01/14/2008
7)	8,473,596	06/25/2013	08/12/2002	12/944,958	11/12/2010
8)	7,379,990	05/27/2008	08/12/2002	10/713,905	08/12/2002

3: Web Folder Family:

	Patent No.	Issue Date	Priority Date	Application No.	Filing Date
1)	9,323,757	04/26/2016	07/02/2004	14/076,117	11/08/2013
2)	9,317,510	04/19/2016	07/02/2004	14/020,582	09/06/2013
3)	9,280,547	03/08/2016	07/02/2004	13/914,515	06/10/2013
4)	9,146,932	09/29/2015	07/02/2004	13/041,316	03/04/2011
5)	9,390,094	07/12/2016	07/02/2004	14/077,442	11/12/2013
6)	8,341,258	12/25/2012	07/02/2004	13/434,767	03/29/2012
7)	8,589,527	11/19/2013	07/02/2004	13/050,871	03/17/2011
8)	8,812,640	09/09/2014	07/02/2004	12/709,434	02/19/2010
9)	7,945,652	05/17/2011	07/02/2004	11/374,302	07/02/2004

4: Information Sharing Family:

	Patent No.	Issue Date	Priority Date	Application No.	Filing Date
1)	8,713,442	04/29/2014	03/31/2006	13/080,007	04/05/2011
2)	8,396,891	03/12/2013	03/31/2006	13/326,178	12/14/2011
3)	8,577,839	11/05/2013	03/31/2006	12/511,039	07/28/2009
4)	8,977,722	03/10/2013	03/31/2006	13/468,716	05/10/2012

5: Cloud Storage Family:

	Patent No.	Issue Date	Priority Date	Application No.	Filing Date
1)	9,219,780	12/22/2015	12/04/2003	14/623,476	02/16/2015
2)	9,239,686	01/19/2016	12/04/2003	14/036,744	09/25/2013
3)	9,098,526	08/04/2015	12/04/2003	14/150,106	01/08/2014
4)	8,868,690	10/21/2014	12/04/2003	14/079,831	11/14/2013
5)	8,856,195	10/07/2014	12/04/2003	14/153,052	01/12/2014
6)	8,606,880	12/10/2013	12/04/2003	10/726,897	12/04/2003

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT4277893

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
STT WEBOS, INC.	02/16/2017
SHENG TAI TSAO	02/16/2017

RECEIVING PARTY DATA

Name:	TS PATENTS LLC
Street Address:	P.O.BOX 1712
City:	FREMONT
State/Country:	CALIFORNIA
Postal Code:	94538

PROPERTY NUMBERS Total: 38

Property Type	Number
Patent Number:	8799473
Patent Number:	9015321
Patent Number:	9201961
Patent Number:	9307055
Patent Number:	9009314
Patent Number:	8892742
Patent Number:	8812682
Patent Number:	8745193
Patent Number:	8566463
Patent Number:	8856195
Patent Number:	8606880
Patent Number:	8868690
Patent Number:	9239686
Patent Number:	9219780
Patent Number:	9098526
Patent Number:	9448697
Patent Number:	8977722
Patent Number:	8713442
Patent Number:	8577839

Property Type	Number
Patent Number:	8396891
Patent Number:	9449009
Patent Number:	9390094
Patent Number:	9323757
Patent Number:	9317510
Patent Number:	9280547
Patent Number:	9146932
Patent Number:	8812640
Patent Number:	8589527
Patent Number:	8341258
Patent Number:	7945652
Patent Number:	7379990
Patent Number:	8473596
Patent Number:	8639788
Patent Number:	8688772
Patent Number:	8903963
Patent Number:	8909976
Patent Number:	9106677
Patent Number:	9288266

CORRESPONDENCE DATA

Fax Number: (510)580-8592

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 408-813-0536

Email: ted.tsao@sttwebos.com

Correspondent Name: SHENG TAI TSAO

Address Line 1: 3906 BORGO COMMON

Address Line 4: FREMONT, CALIFORNIA 94538

NAME OF SUBMITTER:	SHENG TAI TSAO
SIGNATURE:	/shengtai tsao/
DATE SIGNED:	02/16/2017
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 2

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source=PATENT ASSIGNMENT AGREEMENT (Tsao & STT)#page2.tif

PATENT ASSIGNMENT AGREEMENT

This Patent Assignment Agreement (the "***Agreement***") is entered into effect on January 1, 2017 (the "***Effective Date***") among Sheng Tai "Ted" Tsao ("***Tsao"***), STT WEBOS, Inc. ("***STT***", a Delaware corporation), and TS Patents LLC ("***TS Patents***", a California limited liability company) (collectively the "***Parties***"), for assignment of the patents listed in Exhibit A (the "Patents") as well as all pending and future patent applications claiming benefits of one or more of the Patents (the "Applications").

WHEREAS, two of the Patents, U.S. Pat. Nos. 7,945,652 and 8,396,891, and Applications claiming priority to the two patents, are owned by STT and shall be referred to in this Agreement as the "STT IP";

WHEREAS, All of the Patents and Applications other than the STT IP are owned by Tsao and shall be referred to in this Agreement as the "Tsao IP";

THEREFORE, the Parties hereby agree:

1. STT assigns the STT IP to TS Patents. In exchange, STT shall be entitled to a share of TS Patents' net profit generated from licensing or sale of the STT IP, as the details of such sharing plan shall be set forth in a separate memorandum.

2. Tsao assigns the Tsao IP to TS Patents in exchange for the shares of TS Patents.

3. The word "assign" is used in this Agreement to mean assigning 100% of the assignor's right, title and interest in the Patents and Applications to the assignee for the entire term of the Patents and any reissues or extensions and for the entire terms of any patents, reissues or extensions that may issue from foreign applications, divisions, continuations in whole or part or substitute applications filed claiming the benefit of the Patents or Applications. The right, title and interest thus assigned is to be held and enjoyed by the assignee and assignee's successors as fully and exclusively as it would have been held and enjoyed by the assignor had the assignment not been made.

4. Upon the execution of the Agreement, TS Patents shall have the right, title and interest in the Patents and Applications. The Parties hereby authorize the United States Patent and Trademark Office to issue any patents resulting from any of the Applications to TS Patents.

[End of Agreement; Signatures on the Next Page]

Sheng Tai "Ted" Tsao:

Sheng Tai "Ted" Tsao

STT WEBOS, Inc.:

By: Sheng Tai "Ted" Tsao
Chief Executive Officer

TS Patents LLC:

By: Sheng Tai "Ted" Tsao
General Manager

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 8,606,880 B2
APPLICATION NO. : 10/726897
DATED : December 10, 2013
INVENTOR(S) : Sheng Tai Ted Tsao

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Delete the title page and substitute therefore with the attached title page showing the corrected number of drawing sheets in patent.

In the Drawings:

FIG. 5 through FIG. 11C have been deleted.

In the Claims:

A) in column 6 line 16, column 6 line 43, column 7 line 36 - column 8 line 1, column 8 lines 22 – 23, column 8 lines 27 – 28, column 8 lines 32 – 33, please replace “storage device” with ---storage space---.

Signed and Sealed this
Twenty-fifth Day of February, 2014

Michelle K. Lee

Michelle K. Lee
Deputy Director of the United States Patent and Trademark Office

(12) **United States Patent**
Tsao

(10) **Patent No.: US 8,606,880 B2**
(45) **Date of Patent: Dec. 10, 2013**

(54) **USE OF WIRELESS DEVICES' EXTERNAL STORAGE**

(75) Inventor: **Sheng (Ted) Tai Tsao**, San Jose, CA (US)

(73) Assignee: **Sheng Tai (Ted) Tsao**, Fremont, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 2766 days.

(21) Appl. No.: **10/726,897**

(22) Filed: **Dec. 4, 2003**

(65) **Prior Publication Data**

US 2010/0005153 A1 Jan. 7, 2010

(51) **Int. Cl.**
G06F 15/16 (2006.01)

(52) **U.S. Cl.**
USPC **709/219**; 709/203; 709/226; 455/412.1; 455/899

(58) **Field of Classification Search**
USPC 709/200, 203, 217, 219, 226, 245; 455/412.1, 899
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,351,776	B1 *	2/2002	O'Brien et al.	709/245
6,356,941	B1 *	3/2002	Cohen	709/219
6,714,968	B1 *	3/2004	Prust	709/219
6,735,623	B1 *	5/2004	Prust	709/219
6,839,743	B2 *	1/2005	Shim	709/217
6,985,927	B2 *	1/2006	O'Brien et al.	709/213
7,506,034	B2 *	3/2009	Coates et al.	709/219
7,650,621	B2 *	1/2010	Thomas et al.	725/87
7,894,803	B2 *	2/2011	Kamada	455/414.3
2002/0059621	A1 *	5/2002	Thomas et al.	725/87
2002/0123336	A1 *	9/2002	Kamada	455/420
2002/0128036	A1 *	9/2002	Yach et al.	455/552
2002/0133597	A1 *	9/2002	Jhingan et al.	709/228
2003/0191716	A1 *	10/2003	Woods et al.	705/50

* cited by examiner

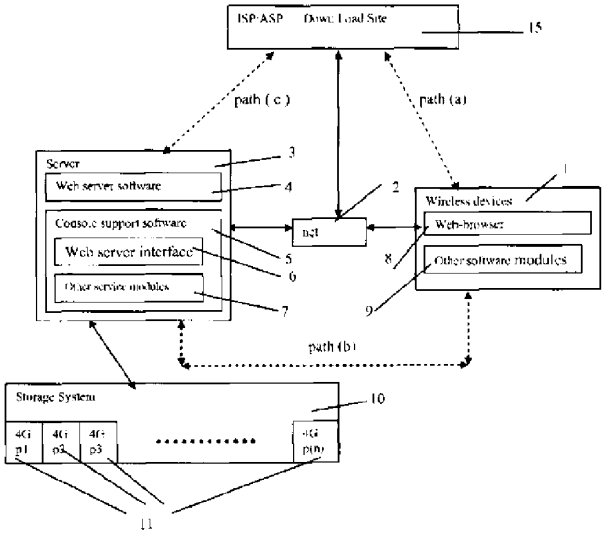
Primary Examiner — El Hadji Sall

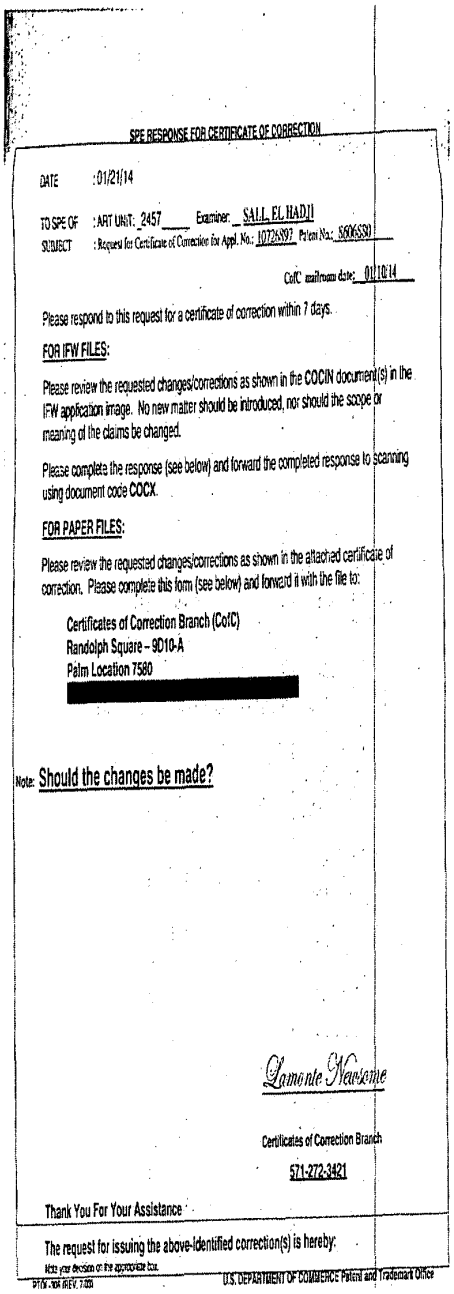
(57) **ABSTRACT**

Adapting web-based external storage, wireless device can posses huge amount of storage that current any wireless device's internal storage can not provide. To effectively let the storage server providing external storage (file system) for wireless device, the storage of a storage server need to be partitioned into multiple small storage volume and need to be exported to each specific wireless device. The console support software coupled with web-server software of a server provides both users of wireless device and console through web-browser to perform tasks of creating and utilizing external storage (file system). To support larger number of wireless devices with external storage, a central controlled distributed scalable virtual machine infrastructure can be deployed. The larger number of storage server controlled by a central control system can satisfy unlimited wireless devices external storage needs.

17 Claims, 4 Drawing Sheets

Wireless out-band download





SPE RESPONSE FOR CERTIFICATE OF CORRECTION

DATE :01/21/14

TO SPE OF : ART UNIT: 2457 Examiner: SALL EL HADJI
SUBJECT : Request for Certificate of Correction for Appl. No.: 10726597 Patent No.: 8806530

CofC mailroom date: 01/10/14

Please respond to this request for a certificate of correction within 7 days.

FOR IFW FILES:

Please review the requested changes/corrections as shown in the COCIN document(s) in the IFW application image. No new matter should be introduced, nor should the scope or meaning of the claims be changed.

Please complete the response (see below) and forward the completed response to scanning using document code COCX.

FOR PAPER FILES:

Please review the requested changes/corrections as shown in the attached certificate of correction. Please complete this form (see below) and forward it with the file to:

Certificates of Correction Branch (CofC)
Randolph Square – 9D10-A
Palm Location 7580
[redacted]

Note: Should the changes be made?

Lamonte Newsome

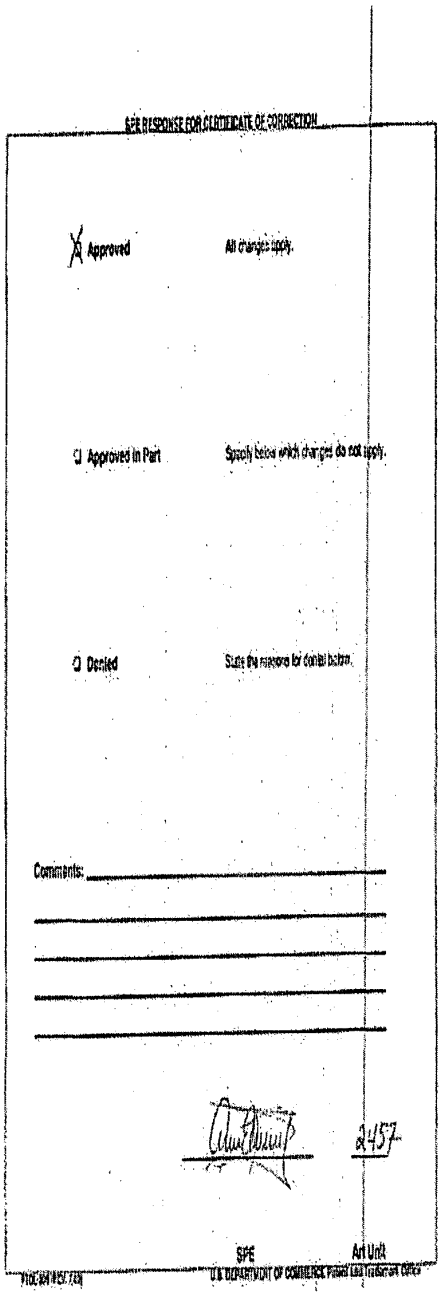
Certificates of Correction Branch
571-272-3421

Thank You For Your Assistance

The request for issuing the above-identified correction(s) is hereby:

Note your decision on the appropriate box.

PTW-308 (REV. 7-03) U.S. DEPARTMENT OF COMMERCE Patent and Trademark Office



B2R RESPONSE FOR CERTIFICATE OF CORRECTION

☒ Approved — All changes apply.

☐ Approved in Part — Specify below which changes do not apply.

☐ Denied — State the reasons for denial below.

Comments: _____

2457

SPE — Art Unit

U.S. DEPARTMENT OF COMMERCE Patent and Trademark Office

SPE RESPONSE FOR CERTIFICATE OF CORRECTION

DATE : 01/21/14

TO SPE OF : ART UNIT: 2457 Examiner: SALL, EL HADJI
SUBJECT : Request for Certificate of Correction for Appl. No.: 10726897 Patent No.: 8606880

CofC mailroom date: 01/10/14

Please respond to this request for a certificate of correction within 7 days.

FOR IFW FILES:

Please review the requested changes/corrections as shown in the **COCIN** document(s) in the IFW application image. No new matter should be introduced, nor should the scope or meaning of the claims be changed.

Please complete the response (see below) and forward the completed response to scanning using document code **COCX**.

FOR PAPER FILES:

Please review the requested changes/corrections as shown in the attached certificate of correction. Please complete this form (see below) and forward it with the file to:

Certificates of Correction Branch (CofC)
Randolph Square – 9D10-A
Palm Location 7580
[redacted]

Note: **Should the changes be made?**

Lamonte Newsome

Certificates of Correction Branch

571-272-3421

Thank You For Your Assistance

The request for issuing the above-identified correction(s) is hereby:
Note your decision on the appropriate box.

SPE RESPONSE FOR CERTIFICATE OF CORRECTION

❑ **Approved**	**All** changes apply.
❑ **Approved in Part**	Specify below which changes **do not** apply.
❑ **Denied**	State the reasons for denial below.

Comments: _____

_____

_____

_____

_____

_____ _____

SPE **Art Unit**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
TITLE:	The Use of Wireless Devices' External Storage
PATENT No.:	8,606,880
ISSUE DATE:	12/10/2013
EXAMINER:	El Hadji Sall
ART UNIT:	2452
Confirmation No.:	4178

REQUEST FOR CERTIFICATE of Correction Pursuant To 37 C.F.R §1.323

COMMISSIONER FOR PATENTS
Office of Data Management Attention: Certificates of Correction Branch
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

This communication directs to providing evidence for the request of removing the Fig.5 to Fig. 11 in last two submissions of request for certificate of correction filed on 1/10/2014 and 12/18/2013 for United States Patent Number 8,606,880 issued December 10, 2013.

Applicant would like to provide evidence (see attached) that a request for withdrawing all new figures has been submitted on 06/12/2009, therefore, the drawings of the applications 10/726,897 shall be restored to the status the same as they filed on 12/04/2003 with all new matters being removed on the 06/12/2009.

Therefore, the request for certificate of correction for removing all 14 figures from the Fig. 5 to Fig. 11 in the patent 8,606,880 is compliance to the 37 C.F.R §1.323.

Applicant submits that the noted errors do not constitute new matter, and correction thereof would not require reexamination.

Pursuant to 37 C.F.R §1.323, Applicant requests that the enclosed Certificate of Correction be approved.

Since each one of the noted errors is not the fault of the Patent Office, payment of $100.00 had already paid on 12/18/2013 by credit card via EFS-Web.

Respectively Submitted

Date: 01/11/2014

By /shengtai tsao/

Sheng Tai (Ted) Tsao

3906 Borgo Common
Fremont, CA 94538
408-813-0536
510-580-8592

Amendments to the Claims are reflected in the listing of claims which begin on page 5 of this paper.

Remarks/Arguments begin on page 13 of this paper.

Appendix, including following documents, begins on page 14 of this paper:

(1) Substitute specification;

(2) Replacement sheet for abstract; and

(3) Replacement figures.

AMENDMENTS TO THE SPECIFICATION

Applicant elects to withdraw amendments to the specification filed after the original filing date of 12/04/2003. A substitute specification, which is the original version filed on 12/04/2003, is included in the Appendix of this paper.

AMENDMENTS TO THE DRAWINGS

Applicant elects to withdraw amendments and/or additional figure(s) filed after the original filing date of 12/04/2003. Replacement sheets of all figures, which is the original version filed on 12/04/2003, are included in the Appendix of this paper.

Electronic Acknowledgement Receipt

EFS ID:	17888747
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG TAI (TED) TSAO - 3906 BORGO COMMON - FREMONT CA 94538 US 4088130536 ted.tsao@sttwebos.com
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	12-JAN-2014
Filing Date:	04-DEC-2003
Time Stamp:	17:07:30
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Certificate of Correction	897-Regarding-drawings.pdf	61008 1dfc2a3b5992eea216039ed7579476aa2ca98ece	no	2
Warnings:					
Information:					
2	Request for Certificate of Correction	req-withdraw.pdf	22133 80854dde1e59191b6be3047dbad91968150ba738	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	83141		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
TITLE:	The Use of Wireless Devices' External Storage
PATENT No.:	8,606,880
ISSUE DATE:	12/10/2013
EXAMINER:	El Hadji Sall
ART UNIT:	2452
Confirmation No.:	4178

REQUEST FOR CERTIFICATE of Correction Pursuant To 37 C.F.R §1.323

COMMISSIONER FOR PATENTS
Office of Data Management Attention: Certificates of Correction Branch
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

This is a continue efforts to request certification of correction due to additional correction are identified rooted from the same cause. Enclosed, in duplicate, is a Certificate of Correction, Form PTO-SB/44, for United States Patent Number 8,606,880 issued December 10, 2013.

A) IN THE CLAIMS:

Column 6, line 16, column6, line 43, and Column 7 line 36 - Column 8 line 1, Column 8 lines 22 – 23, Column 8 lines 27 – 28, Column 8 lines 32 – 33, please replace the "storage device" with --storage space--.

The reason for making this correction is that the limitation of: ".....the storage space..." in the claim 76 and claim 84 submitted on 07/15/2013 for application No. 10/726,897 are expected to be resembled into the allowed claims 31, 33, and 86 as suggested by examiner during an interview. In addition, the limitation of ".... the storage space ..." in the claims 75, 83, and 91 submitted on 07/15/2013 are also expected to be resembled into the claims 93, 94, and 95 as suggested by the examiner.

During the resembling, applicant mistakenly spells the "storage space" with the "storage device" in the allowed claim 31, 33, 86, and the claims 93, 94, and 95 that now are patented claims 1, 2, 11, and 15 - 17.

Applicant submits that the noted errors do not constitute new matter, and correction thereof would not require reexamination.

B) IN THE DRAWINGS:

Please remove (withdraw) all 14 figures from the Fig. 5 to Fig. 11.

The reasons for making this correction is that Applicant mistakenly thought that the replacement drawings from Fig. 1 – Fig. 4 submitted on 10/21/2013 in response a Notice from publication will automatically remove the 14 figures from the Fig. 5 to Fig. 11 submitted on 11/04/2008 that was new matters added to the originally submitted Fig. 1 – Fig. 4, therefore, these figures shall be removed.

Applicant submits that the noted errors do not constitute new matter, and correction thereof would not require reexamination.

Pursuant to 37 C.F.R §1.323, Applicant requests that the enclosed Certificate of Correction be approved.

Since each one of the noted errors is not the fault of the Patent Office, payment of $100.00 had already paid on 12/18/2013. The above-identified fees had being paid by credit card via EFS-Web.

Respectively Submitted

Date: 01/10/2014

By /shengtai tsao/

Sheng Tai (Ted) Tsao

3906 Borgo Common
Fremont, CA 94538
408-813-0536
510-580-8592

PTO/SB/44 (09-07)
Approved for use through 08/31/2013. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.
(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 8,606,880

APPLICATION NO.: 10/726,897

ISSUE DATE : 12/10/2013

INVENTOR(S) : Sheng Tai (Ted) Tsao

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

A) in column 6 line 16, column 6 line 43, column 7 line 36 - column 8 line 1, column 8 lines 22 – 23, column 8 lines 27 – 28, column 8 lines 32 – 33, please replace "storage device" with ---storge space---.

B) remove (withdrawing) total of 14 figures from Fig. 5 - Fig. 11C submitted on 11/04/2008.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

3906 Borgo Common,
Fremont, CA 94538

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	17877674
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG TAI (TED) TSAO - 3906 BORGO COMMON - FREMONT CA 94538 US 4088130536 ted.tsao@sttwebos.com
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	10-JAN-2014
Filing Date:	04-DEC-2003
Time Stamp:	12:36:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Certificate of Correction	certificate-correction2.pdf	64045 330541db291e74bc8f3dbc945c0c9d7c989168ed	no	2
Warnings:					
Information:					
2	Request for Certificate of Correction	req-cerificate-sb0044.pdf	164538 d84322799c9b38e5133601dd301511e4b15de438	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	228583		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
TITLE:	The Use of Wireless Devices' External Storage
PATENT No.:	8,606,880
ISSUE DATE:	12/10/2013
EXAMINER:	El Hadji Sall
ART UNIT:	2452
Confirmation No.:	4178

REQUEST FOR CERTIFICATE OF CORRECTION PURSUANT TO 37 C.F.R §1.323

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Enclosed, in duplicate, is a Certificate of Correction, Form PTO-SB/44, for United States Patent Number 8,606,880 issued on December 10, 2013.

A) IN THE CLAIMS:

Column 6, line 16; column6, line 43; and Column 7, line 36 to Column 8, line 1, please replace "storage device" with "storage space".

The reason for making this correction is that the limitation of:

"…. facilitating to store a file being downloaded from a website directly into the storage space instead of downloading the file into the wireless device itself."

in the patented claim 1, 2, and 11 was presented in the claim 76 and claim 84 submitted on 06/16/2011 – 07/15/2013 for application No. 10/726,897. This limitation is moved from the claim 76 and 84 into the allowed claim 31, 33, and 86 as suggested by examiner. During the moving, it mistakenly spells the "storage device" into the allowed claim 31, 33, and 86 instead of spelled with the original "storage space".

Applicant submits that the noted errors do not constitute new matter, and correction thereof would not require reexamination.

B) IN THE DRAWINGS:

Please remove (withdraw) all 14 figures from the Fig. 5 to Fig. 11C.

The reasons for making this correction is that Applicant mistakenly thought that the replacement drawings from Fig. 1 – Fig. 4 submitted on 10/21/2013 in response a Notice from publication will automatically remove the 14 figures from the Fig. 5 to Fig. 11C submitted on 11/04/2008 that was new matters added to the originally submitted figures, therefore, these new figures shall be removed.

Applicant submits that the noted errors do not constitute new matter, and correction thereof would not require reexamination.

Pursuant to 37 C.F.R §1.323, Applicant requests that the enclosed Certificate of Correction be approved.

Since each one of the noted errors is not the fault of the Patent Office, payment is enclosed of the required fee of $100.00.

The above-identified fees are being paid by credit card via EFS-Web.

Respectively Submitted

Date: 12/18/2013

By: /shengtai tsao/

Sheng Tai (Ted) Tsao

3906 Borgo Common
Fremont, CA 94538
408-813-0536
510-580-8592

PTO/SB/44 (09-07)
Approved for use through 08/31/2013. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 8,606,880

APPLICATION NO.: 10/726,897

ISSUE DATE : 12/10/2013

INVENTOR(S) : Sheng Tai (Ted) Tsao

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

A) in column 6, line 16, column 6, line 43, and column 7, line 36 - column 8, line 1, please replace "storage device" with "storge space".

B) remove (withdrawing) total of 14 figures from Fig. 5 - Fig. 11C submitted on 11/04/2008.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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Electronic Patent Application Fee Transmittal

Application Number:	10726897
Filing Date:	04-Dec-2003
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Filer:	Sheng Tai Tsao
Attorney Docket Number:	

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Certificate of Correction	1811	1	100	100
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
		Total in USD ($)		**100**

Electronic Acknowledgement Receipt

EFS ID:	17694735
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG TAI (TED) TSAO - 3906 BORGO COMMON - FREMONT CA 94538 US 4088130536 ted.tsao@sttwebos.com
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	18-DEC-2013
Filing Date:	04-DEC-2003
Time Stamp:	13:46:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$100

RAM confirmation Number	50
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Certificate of Correction	897certificate.PDF	1263673 5a28c37c80c636ff02151de4bbd24aca0f62199b	no	2
Warnings:					
Information:					
2	Request for Certificate of Correction	897-cerificate-sb0044.pdf	164438 d0d6875d3e514e3568f4ac6bf6d9c9235e4f7493	no	2
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	29331 935e18458be5964c84dca4d98133d47b8f71bf8e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1457442		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/10/2013	8606880		4178

7590 11/20/2013

SHENG TAI (TED) TSAO
3906 BORGO COMMON
FREMONT, CA 94538

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 2766 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Sheng (Ted) Tsao, San Jose, CA;

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/04/2003	Sheng (Ted) Tsao		4178

7590 11/12/2013

SHENG TAI (TED) TSAO
3906 BORGO COMMON
FREMONT, CA 94538

EXAMINER	
SALL, EL HADJI MALICK	
ART UNIT	**PAPER NUMBER**
2457	

MAIL DATE	DELIVERY MODE
11/12/2013	PAPERPAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Response to Rule 312 Communication	Application No.	Applicant(s)
	10/726,897	TSAO, SHENG (TED)
	Examiner	Art Unit
	EL HADJI SALL	2457

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

1. ☒ The amendment filed on *21 October 2013* under 37 CFR 1.312 has been considered, and has been:

a) ☒ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.
Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

Replacement of specification and drawing are entered.

/EL HADJI SALL/
Primary Examiner, Art Unit 2457

Applicant:	Sheng Tai (Ted) Tsao
Title:	The Use Of The Wireless Device's External Storage
Application No.	10/726,897
Filing Date:	12/04/2003
Examiner:	Sall, El Hadji Malick
Art Unit:	2457
Confirmation No.	4178

Response To Notice To File Corrected Papers

Mail Stop Issue Fee
Commissioner for Patents
P.O.Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

This communication is in response to a Notice to File Corrected Application Paper mailed October 14, 2013 in the above-identified application. The Notice sets forth a two month period, or the time remaining from the Notice of Allowance and Fee(s) due, whichever is longer, to respond. Accordingly, this response is timely filed before the Dec. 14, 2013.

In the Notice, the Office remarks that the Fig. 2 and 3 containing data that are cut-off/illegible. In addition, Applicant has found that a label No. 12 has been used twice for the Web-console host in Fig. 2 and the ISP/ASP – Down Load Web Site in Fig. 3. In response, Applicant hereby submits a replacement drawing sheet to correct the alleged defect and a defect found by Applicant self.

The replacement drawing sheet contains figures submitted on 12/04/2003 including the Fig. 2 and 3 without introducing new matters and without any data cut-off/illegible as well as using a label 15 for the ISP/ASP -- Down Load Web Site in Fig. 3. An annotated drawing for the Fig. 3 is also enclosed which has a label 15 for the IS/ASP -- Down Load Web Site.

Additionally, a replacement specification based on a replacement copy of the specification submitted on 04/01/2013 is also enclosed to contain the corrected label 15 for the IS/ASP -- Down Load Web Site. Meanwhile, a markup copy of the specification to mark such

changes for the label of the IS/ASP -- Down Load Web Site is also enclosed. There is no new matters being introduced.

Therefore, a request for the entry for the Fig. 2 and 3 is respectively submitted. In addition, a request for entry of the amended specification is also respectively submitted. Upon entry of the amendment, Applicants submit that the application paper has now been corrected.

It is believed that Applicant has made best efforts in responding to the Notice of 10/14/2013. If there is still any issue, Applicant can be reached at the address and phone listed bellow.

Respectively Submitted

10/21/2013

/shengtai tsao/

Sheng Tai (Ted) Tsao
3906 Borgo Common,
Fremont, CA 94538
408-813-0536
510-580-8592

(Replacement Sheet)

Wireless devices supports in a simple environment

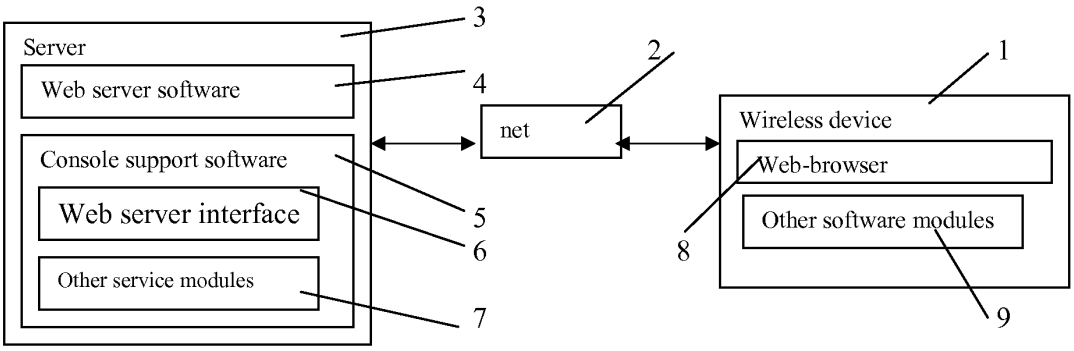

Fig. 1

(Replacement Sheet)

Wireless devices access external storage through web browser

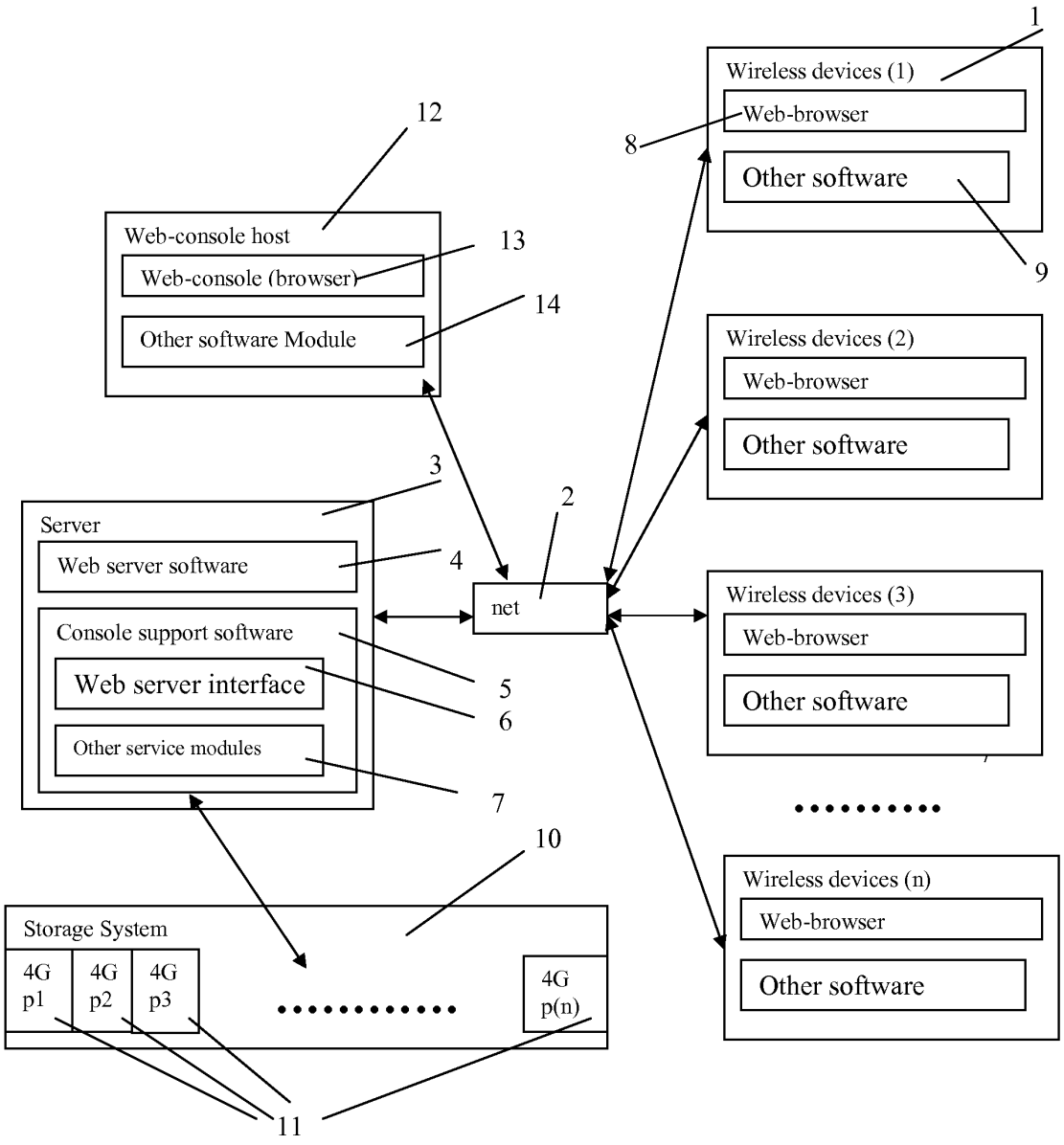

Fig. 2

(Replacement Sheet)

Wireless out-band download

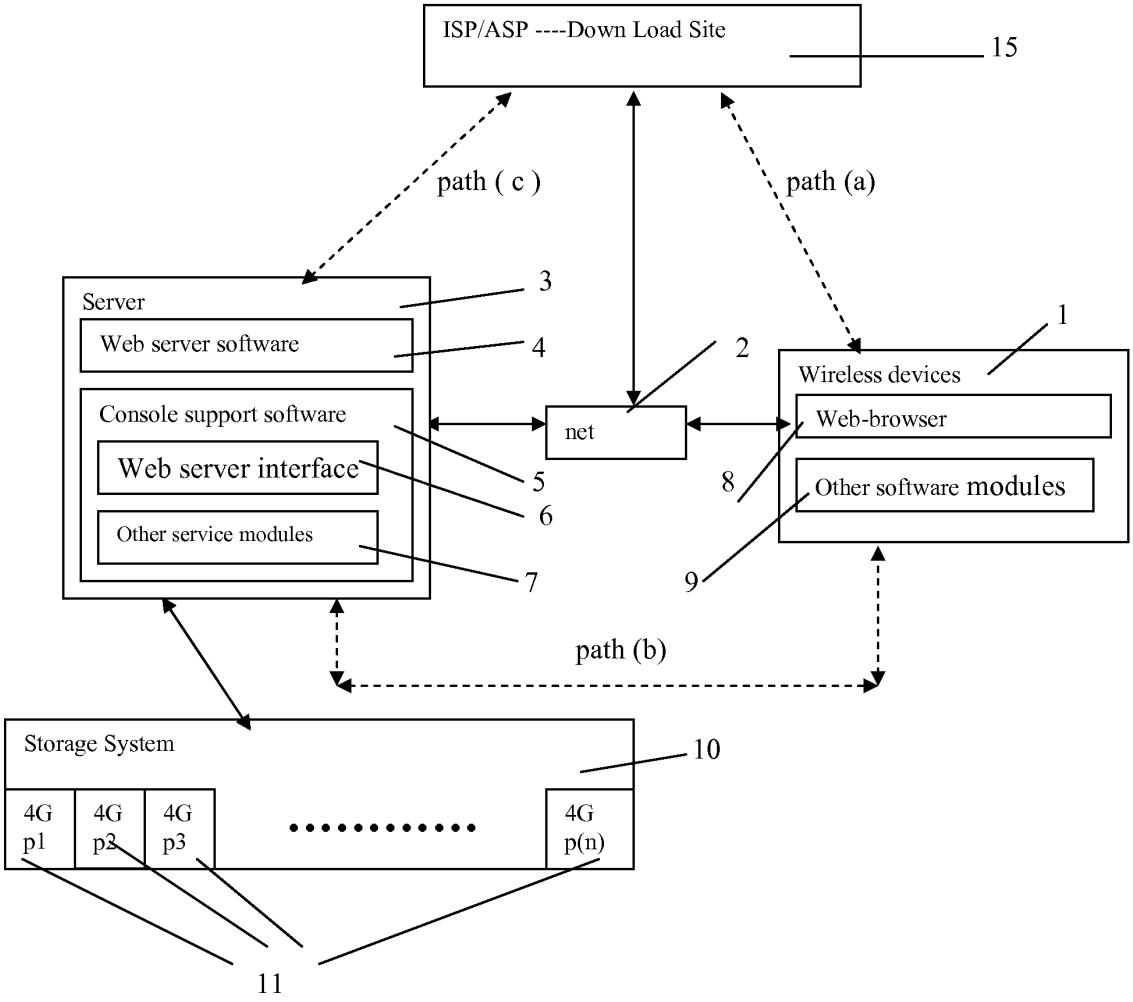

Fig. 3

(Replacement Sheet)

The CCDSVM Support External Device for Huge Number of Wireless Device

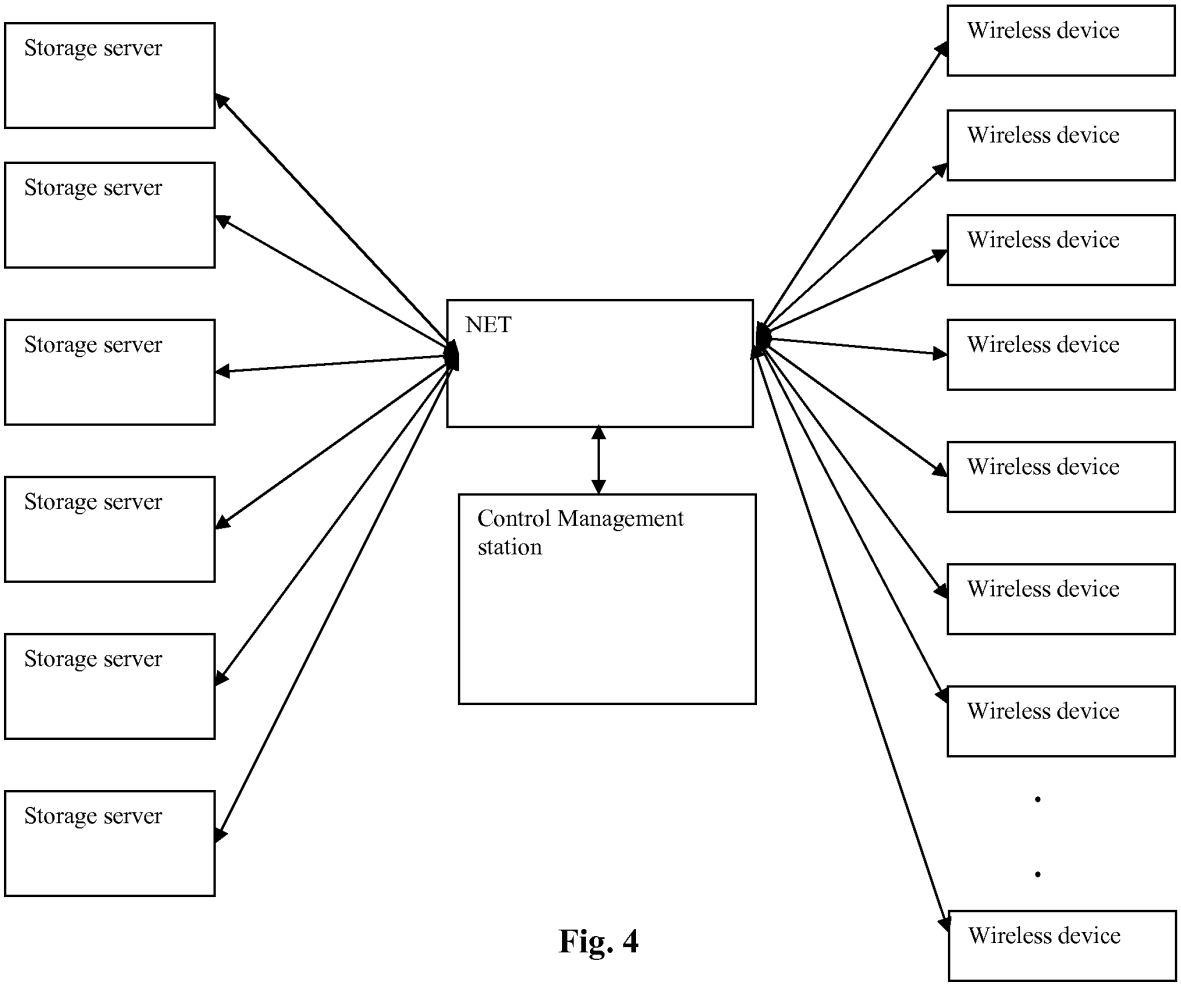

Fig. 4

(Annotated Sheet)

Wireless out-band download

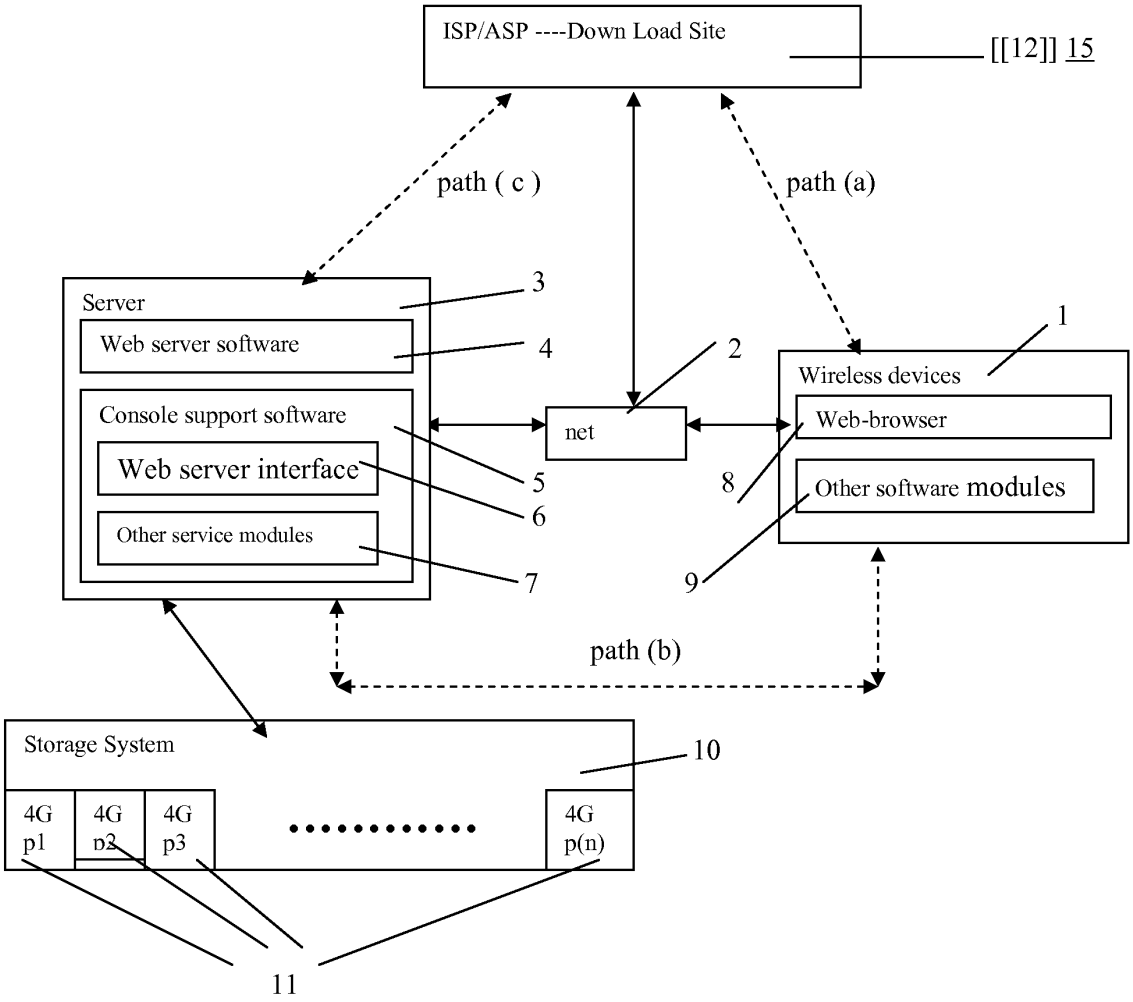

Fig. 3

The Use of Wireless Devices' External Storage

Cross Reference to Prior Application

[001] This invention relates to the previous invention, application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System". This invention also relates to previous invention, application number 60/402,626 of "IP Based Distributed Virtual SAN".

Field of the Invention

[002] This invention focuses on how a wireless device can actually use external storage provided by a storage server. This invention also includes how a wireless device can download data to its external storage.

Background Information

[003] Terminology:

The terminologies described in next few sections reflect the scope and are part of present invention.

[004] **The Internal Storage of a System:**

The storage media such as hard disk drives, memory sticks, memory etc.. is connected to a system directly through bus or a few inches of cable. Therefore, the storage media actually is a component of the system in an enclosure.

[005] **The External Storage of a System:**

The external storage media is not a component of the system in the same enclosure. Therefore, they have to be connected through a connecting medium (e.g. a cable) such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or such as wireless medium and etc.. The storage media of an external storage could be magnetic hard disk drives, solid state disk, optical storage drives, memory card, etc. and could be in any form such as Raid which usually consists of a group of hard disk drives.

[006] **The Storage Partition, its Volumes, and the Corresponding File System:**

To effectively use storage system, each storage device usually needs to be partitioned into small volumes. After the partition, each of the volumes can be used to establish a file system on it. To simplify the discussion herein, the term of the storage volume, its corresponding file system, and the term of the partition of the storage device are often used without differentiation.

[007] **CCDSVM:**

It is an abbreviation for a central controlled distributed scalable virtual machine system. The CCDSVM allows a control management station to control a group of systems and provide distributed services to a client system on the Internet, the Intranet, and an LAN environment.

[008] **ISP & ASP:**

The ISP refers to Internet service provider and the ASP refers to application service provider.

[009] **Figures:**

[010] Fig. 1 illustrates an embodiment of the instant application, the Fig. 1 is the same as Fig. 1 of the previous application of the "Concurrent Web Based Multi-task Support for Control Management System" with an exception of replacing a console host with a wireless device.

[011] Fig. 2 is the same as Fig. 1 of the above except that it shows a more detailed storage system controlled by a server. In addition, multiple wireless devices are presented to access the storage system.

[012] Fig. 3 shows a scheme of a wireless device downloading contents from an ISP/ASP or other web sites to an external storage allocated for the wireless device.

[013] Fig. 4 is similar to the Fig. 1 of the previous application of the "IP Based Distributed Virtual SAN" with exception that each IP storage server provides a file system as external storage for each of the wireless devices instead of providing IP based virtual SAN service. Also, each host of mentioned Fig. 1 actually is replaced by a wireless device of present application.

[014] Unless specified, the programming languages and the protocols used by each software modules of instant application, and the computing systems used in this invention are assumed to be the same as described in the previous patent applications.

[015] In addition, in the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

[016] **Brief Description of the Invention**

[017] Today the wireless users commonly face a problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which are usually limited to 256MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple gigabytes (GB) of storage for their wireless devices as well as allowing the users to use the GB storage for their multimedia applications, the storage of a server can be used as the external storage for the wireless devices. This technology has been briefly introduced in the previous parent patent applications.

[018] Now let us examine how the external storage can actually be used by the wireless devices. First, let each server unit (e.g. the server 3 of the Fig. 2) partitions its storage system into volumes and each of the volumes will have multiple GB in size. Therefore, each user of the wireless devices can be exclusively assigned and access a specific storage volume. For example, if we need to provide each user a 4GB storage space, then a 160GB disk drive can support 40 users. Therefore, a 4096GB storage system on the server unit can support a total of 1024 wireless devices for users. Further, any data on the wireless device can be transmitted to an assigned storage volume. In addition, the user of the wireless device also

can download the multimedia data from an ISP or ASP to the assigned storage volume of a designated server unit through out-band approach shown in Fig. 3. Finally, the user can use a web-browser, which has a functionality of invoking embedded video or music, to enjoy his/her stored multimedia contents.

[019] These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures:

[020] **Description of the Drawings**

[021] Referring now to Fig. 1, it demonstrates a configuration comprising a network connecting a wireless device and a server. In the Fig. 1, Net (2) represents a communication link, which may be combined with wireless and wired connection media and guarantee that the communication packets can be sent/received between the wireless device and the server. It is also assumed that the net (2) representing an communication infrastructure is built up in such way that a user of a wireless device can access and browse any web-site on the Internet, the Intranet, or a local area network (LAN).

[022] In Fig. 1, the console support software (5) on the server (3) can be configured to support web-based multi-tasks for the user of the wireless device (1) via a web browser 8. Further, the user of the wireless device is able to perform creating structured layered files, directories, or folders, and perform data management operations, such as delete, move, copy, rename for data files or folders, directories and etc.. on an assigned storage volume associated with the server (3).

[023] In addition, the other software modules (9) of the wireless device (1) is configured to send data to or receive data from the other service modules (7) running on the server (3) via communication link (2) through a suitable IP or non-IP based protocol. The data being sent cold be a digital photo picture, a message and etc..

[024] Also, the console supporting software (5) of the server (3) and the other software modules (9) of the wireless device (1) can be implemented with any suitable languages such as C, C++, Java, etc. depending on the implementation.

[025] Besides, the web-browser (8) of the wireless device (1) can be implemented any suitable software. The web browser is configured to communication with web server software (4) on the server (3) with any other web server through the HTTP protocol.

[026] On the other hand, Fig. 2 has demonstrated that the storage system 10 of a server 3 can be allocated to multiple wireless devices. First, the storage system (10) of the server (3) can be partitioned into multiple storage volumes (11) by administration staff through a web-console (13) of a console host (12).

[027] Second, the storage system (10) of the server (3) can be partitioned in such way that each of the wireless devices can be allocated with a storage volume having a desired size, therefore, the server 3 can support maximum numbers of the wireless devices.

[028] In addition, the storage connection media could be any kind of cables, such as SCSI cable, IP cable, Fiber cable etc. or could be wireless communication media. The storage system itself could be various types.

[029] Finally, the storage system 10 can be accessed by each of the wireless devices through IP or non-IP based network and protocols.

[030] Fig. 3 has demonstrated that a user from a web-browser (8) on a wireless device (1) can download data from a known web-site (~~12~~15) to his/her allocated external storage (10) on the server (3). The dash-lined path (a) represents a communication channel between the wireless device (1) and a remote downloading web-site (~~12~~15) that provides downloading contents. The dash-lined path (b) represents a communication channel between the wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between the server 3 and the remote web-server (~~12~~15).

[031] **The Detailed Description of the Invention**

[032] **The Use of the External Storage by the Wireless Device:**

The Fig. 2 shows a simplified diagram of the wireless devices (1 of Fig. 2) using the external storage system (10 of Fig. 2) of the server (3 of Fig. 2) for effectively resolving the storage limitation problem for the wireless devices (1 of Fig. 2).

[033] **Partition storage volumes (Fig. 2)**

With this invention, the entire storage (10 of Fig. 2) on the server (3 of Fig. 2) needs to be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB for each volume. This will allow the server 3 to serve maximum number of the wireless devices (1 of Fig. 2). With the web console support software (5 of Fig. 2) of the server (3 of Fig. 2), tasks of partitioning the storage system 10 can be done through a web-console (13 of Fig. 2) on a console host (12 of Fig. 2) by an administrative staff.

[034] In order to support storage partitioning, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of the console host (12 of Fig. 2). The storage information includes each storage device's name and total size etc.. Second, based on the received storage information the administration staff on the console host (12 of Fig. 2) can use a web-console (13 of Fig. 2) to fill out and send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from the web-console (13 of Fig. 2) of the console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition to divide the entire storage into multiple small volumes. Finally, for each small storage volume, a corresponding file system could be built up.

[035] **Assign storage volumes (Fig. 2):**

Each of the storage volumes together with its corresponding file system (11 of Fig. 2) on the storage system (10 of Fig. 2) of the server (3 of Fig. 2) needs to be exclusively allocated and exported to a specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) of the server (3 of Fig. 2).

[036] **Data and storage volume management (Fig. 2)**

With the support of the console support software modules (5 of Fig 2) of the server (3 of Fig. 2), the user of the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 setup folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user of the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 perform all data management operations such as delete, copy, move, rename etc. for file system.

[037] In order to support such data management on the external storage (10 of Fig. 2) allocated to the wireless device (1 of Fig. 2) via the web-browser 8 of Fig. 2, first the console support software modules (5 of Fig. 2) of the server 3 of Fig. 2 must communicate with the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2). Therefore, the user from the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to the console support software modules (5 of Fig. 2) of the server 3 of Fig. 2. The mentioned operations include establishing folder/directory, copying, moving, or reaming data file etc. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server 3 of Fig. 2 actually process/executes these requested operations for the assigned file system of an allocated storage volume (11 of Fig. 2) on the server 3 of Fig. 2.

[038] **Store data from wireless device into external storage (Fig. 2)**

To store the data such as digital photo pictures or messages into the file system on the allocated storage (10 of Fig. 2) of the server (3 of Fig. 2), the other software modules (9 of Fig. 2) of the wireless device (1 of Fig. 2) need to send these data to the other service modules (7 of Fig. 2) of the server (3 of Fig. 2) via communication link between them. Upon receiving the data, the other service modules (7 of Fig. 2) of the server (3 of Fig. 2)

write these data to the file system of the allocated storage volume (11 of Fig. 2) for the wireless device. The protocol used between these two communication entities could be either IP or non-IP based protocol.

[039] **Download data from a remote web server site into allocated storage volume (Fig. 3)**

[040] If a user of the wireless device (1 of Fig. 3) wants to download a data from a remote web server (~~12~~ 15 of Fig. 3) into the allocated file system (11 of Fig. 3) of the allocated storage (10 of Fig. 3) on the server (3 of Fig. 3), the following steps are required:

[041] 1) The user of the wireless device (1 of Fig. 3) via a web-browser (8 of Fig. 3) accesses a remote downloading web server site (~~12~~ 15 of Fig. 3) to obtain information for the downloading via path (a) of Fig. 3. For example, the user accesses a web-page which contains the data name for the downloading.

[042] 2) The other software modules (9 of Fig. 3) of the wireless device (1 of Fig. 3) obtain the downloading information, which becomes available in the cached web-pages on the wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the web site (~~12~~ 15 of Fig. 3).

[043] 3) The other software modules (9 of Fig. 3) of the wireless device (1 of Fig. 3) send the obtained downloading information to other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) via path (b) of Fig. 3.

[044] 4) Upon receiving the downloading information from the wireless device (1), the other service module (7 of Fig. 3) of the storage server (3 of Fig. 3) sends a web download request to the web-site (~~12~~ 15 of Fig. 3) via path (c) of Fig. 3 and receives the downloading data streams from the web server of the web-site (~~12~~ 15 of Fig. 3).

[045] 5) Upon receiving downloading data streams, the other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write the data streams into the allocated file system (11 of Fig. 3) on the server (3 of Fig. 3) for the wireless device (1 of Fig. 3).

[046] **Retrieve data from allocated storage for the wireless device**

[047] 1) If a web-browser (8 of Fig. 2) on a wireless device 1 of Fig. 2 has embedded video or music functionality, a user of the wireless device (1 of Fig. 2) can use the browser to retrieve and play multimedia data file such as video or music stored in the allocated storage volume (10 of Fig.2) located on the server (3 of Fig. 2).

[048] 2) If there is a need, the other software module (9 of Fig. 2) of the wireless device (1 of Fig. 2) also can retrieve data file from the allocated file system of the allocated storage volume (11 of Fig. 2) on the server (3 of Fig. 2).

[049] **Support external storage for a large number of the wireless devices**

[050] If there is a need to provide each user a 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on the server unit can support 2024 user. Each of the server units only can efficiently support a limited size of the storage system. In order to support a large number of the wireless devices, such as for 500,000 wireless devices, a larger number of the servers is required, in this case 250 servers is required. In order to let a larger number of the servers to effectively support the larger number of the wireless devices, an infrastructure like CCDSVM is desirable, which has been described in previous patent applications. With the CCDSVM the control management station can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

The Use of Wireless Devices' External Storage

Cross Reference to Prior Application

[001] This invention relates to the previous invention, application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System". This invention also relates to previous invention, application number 60/402,626 of "IP Based Distributed Virtual SAN".

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can download the multimedia data from an ISP or ASP to the assigned storage volume of a designated server unit through out-band approach shown in Fig. 3. Finally, the user can use a web-browser, which has a functionality of invoking embedded video or music, to enjoy his/her stored multimedia contents.

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[022] In Fig. 1, the console support software (5) on the server (3) can be configured to support web-based multi-tasks for the user of the wireless device (1) via a web browser 8. Further, the user of the wireless device is able to perform creating structured layered files, directories, or folders, and perform data management operations, such as delete, move, copy, rename for data files or folders, directories and etc.. on an assigned storage volume associated with the server (3).

[023] In addition, the other software modules (9) of the wireless device (1) is configured to send data to or receive data from the other service modules (7) running on the server (3) via communication link (2) through a suitable IP or non-IP based protocol. The data being sent cold be a digital photo picture, a message and etc..

[024] Also, the console supporting software (5) of the server (3) and the other software modules (9) of the wireless device (1) can be implemented with any suitable languages such as C, C++, Java, etc. depending on the implementation.

[025] Besides, the web-browser (8) of the wireless device (1) can be implemented any suitable software. The web browser is configured to communication with web server software (4) on the server (3) with any other web server through the HTTP protocol.

[026] On the other hand, Fig. 2 has demonstrated that the storage system 10 of a server 3 can be allocated to multiple wireless devices. First, the storage system (10) of the server (3) can be partitioned into multiple storage volumes (11) by administration staff through a web-console (13) of a console host (12).

[027] Second, the storage system (10) of the server (3) can be partitioned in such way that each of the wireless devices can be allocated with a storage volume having a desired size, therefore, the server 3 can support maximum numbers of the wireless devices.

[028] In addition, the storage connection media could be any kind of cables, such as SCSI cable, IP cable, Fiber cable etc. or could be wireless communication media. The storage system itself could be various types.

[029] Finally, the storage system 10 can be accessed by each of the wireless devices through IP or non-IP based network and protocols.

[030] Fig. 3 has demonstrated that a user from a web-browser (8) on a wireless device (1) can download data from a known web-site (15) to his/her allocated external storage (10) on the server (3). The dash-lined path (a) represents a communication channel between the wireless device (1) and a remote downloading web-site (15) that provides downloading contents. The dash-lined path (b) represents a communication channel between the wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between the server 3 and the remote web-server (15).

[031] **The Detailed Description of the Invention**

[032] **The Use of the External Storage by the Wireless Device:**

The Fig. 2 shows a simplified diagram of the wireless devices (1 of Fig. 2) using the external storage system (10 of Fig. 2) of the server (3 of Fig. 2) for effectively resolving the storage limitation problem for the wireless devices (1 of Fig. 2).

[033] **Partition storage volumes (Fig. 2)**

With this invention, the entire storage (10 of Fig. 2) on the server (3 of Fig. 2) needs to be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB for each volume. This will allow the server 3 to serve maximum number of the wireless devices (1 of Fig. 2). With the web console support software (5 of Fig. 2) of the server (3 of Fig. 2), tasks of partitioning the storage system 10 can be done through a web-console (13 of Fig. 2) on a console host (12 of Fig. 2) by an administrative staff.

[034] In order to support storage partitioning, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of the console host (12 of Fig. 2). The storage information includes each storage device's name and total size etc.. Second, based on the received storage information the administration staff on the console host (12 of Fig. 2) can use a web-console (13 of Fig. 2) to fill out and send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from the web-console (13 of Fig. 2) of the console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition to divide the entire storage into multiple small volumes. Finally, for each small storage volume, a corresponding file system could be built up.

[035] **Assign storage volumes (Fig. 2):**

Each of the storage volumes together with its corresponding file system (11 of Fig. 2) on the storage system (10 of Fig. 2) of the server (3 of Fig. 2) needs to be exclusively allocated and exported to a specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) of the server (3 of Fig. 2).

[036] **Data and storage volume management (Fig. 2)**

With the support of the console support software modules (5 of Fig 2) of the server (3 of Fig. 2), the user of the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 setup folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user of the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 perform all data management operations such as delete, copy, move, rename etc. for file system.

[037] In order to support such data management on the external storage (10 of Fig. 2) allocated to the wireless device (1 of Fig. 2) via the web-browser 8 of Fig. 2, first the console support software modules (5 of Fig. 2) of the server 3 of Fig. 2 must communicate with the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2). Therefore, the user from the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to the console support software modules (5 of Fig. 2) of the server 3 of Fig. 2. The mentioned operations include establishing folder/directory, copying, moving, or reaming data file etc. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server 3 of Fig. 2 actually process/executes these requested operations for the assigned file system of an allocated storage volume (11 of Fig. 2) on the server 3 of Fig. 2.

[038] **Store data from wireless device into external storage (Fig. 2)**

To store the data such as digital photo pictures or messages into the file system on the allocated storage (10 of Fig. 2) of the server (3 of Fig. 2), the other software modules (9 of Fig. 2) of the wireless device (1 of Fig. 2) need to send these data to the other service modules (7 of Fig. 2) of the server (3 of Fig. 2) via communication link between them. Upon receiving the data, the other service modules (7 of Fig. 2) of the server (3 of Fig. 2)

write these data to the file system of the allocated storage volume (11 of Fig. 2) for the wireless device. The protocol used between these two communication entities could be either IP or non-IP based protocol.

[039] **Download data from a remote web server site into allocated storage volume (Fig. 3)**

[040] If a user of the wireless device (1 of Fig. 3) wants to download a data from a remote web server (15 of Fig. 3) into the allocated file system (11 of Fig. 3) of the allocated storage (10 of Fig. 3) on the server (3 of Fig. 3), the following steps are required:

[041] 1) The user of the wireless device (1 of Fig. 3) via a web-browser (8 of Fig. 3) accesses a remote downloading web server site (15 of Fig. 3) to obtain information for the downloading via path (a) of Fig. 3. For example, the user accesses a web-page which contains the data name for the downloading.

[042] 2) The other software modules (9 of Fig. 3) of the wireless device (1 of Fig. 3) obtain the downloading information, which becomes available in the cached web-pages on the wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the web site (15 of Fig. 3).

[043] 3) The other software modules (9 of Fig. 3) of the wireless device (1 of Fig. 3) send the obtained downloading information to other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) via path (b) of Fig. 3.

[044] 4) Upon receiving the downloading information from the wireless device (1), the other service module (7 of Fig. 3) of the storage server (3 of Fig. 3) sends a web download request to the web-site (15 of Fig. 3) via path (c) of Fig. 3 and receives the downloading data streams from the web server of the web-site (15 of Fig. 3).

[045] 5) Upon receiving downloading data streams, the other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write the data streams into the allocated file system (11 of Fig. 3) on the server (3 of Fig. 3) for the wireless device (1 of Fig. 3).

[046] **Retrieve data from allocated storage for the wireless device**

[047] 1) If a web-browser (8 of Fig. 2) on a wireless device 1 of Fig. 2 has embedded video or music functionality, a user of the wireless device (1 of Fig. 2) can use the browser to retrieve and play multimedia data file such as video or music stored in the allocated storage volume (10 of Fig.2) located on the server (3 of Fig. 2).

[048] 2) If there is a need, the other software module (9 of Fig. 2) of the wireless device (1 of Fig. 2) also can retrieve data file from the allocated file system of the allocated storage volume (11 of Fig. 2) on the server (3 of Fig. 2).

[049] **Support external storage for a large number of the wireless devices**

[050] If there is a need to provide each user a 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on the server unit can support 2024 user. Each of the server units only can efficiently support a limited size of the storage system. In order to support a large number of the wireless devices, such as for 500,000 wireless devices, a larger number of the servers is required, in this case 250 servers is required. In order to let a larger number of the servers to effectively support the larger number of the wireless devices, an infrastructure like CCDSVM is desirable, which has been described in previous patent applications. With the CCDSVM the control management station can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

Electronic Acknowledgement Receipt

EFS ID:	17187712
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG TAI (TED) TSAO - 3906 BORGO COMMON - FREMONT CA 94538 US 4088130536 ted.tsao@sttwebos.com
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	21-OCT-2013
Filing Date:	04-DEC-2003
Time Stamp:	20:41:56
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Drawings-only black and white line drawings	897draw_replacement.pdf	80645 8d9e1bd76ee1f9e8908127a751c7ba8a4918ca8b	no	6
Warnings:					
Information:					
2	Drawings-only black and white line drawings	897draw_markup.pdf	50623 629da1652ffe59266966f85cc23bc9c6b7f2d4cc	no	1
Warnings:					
Information:					
3	Specification	897spec-markup.pdf	97260 f340d63e4fc1a0aa53eafb30e78a819bb57966fb	no	9
Warnings:					
Information:					
4	Specification	897spec-replace.pdf	96846 ffe383f6374146092cc45206bafb25207aafec5c	no	9
Warnings:					
Information:					
		Total Files Size (in bytes):	325374		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/04/2003	Sheng (Ted) Tsao		4178

7590 10/14/2013

SHENG TAI (TED) TSAO
3906 BORGO COMMON
FREMONT, CA 94538

EXAMINER	
SALL, EL HADJI MALICK	
ART UNIT	**PAPER NUMBER**
2457	

MAIL DATE	DELIVERY MODE
10/14/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Application No. : 10726897
Applicant : Tsao
Filing Date : 12/04/2003
Date Mailed : 10/14/2013

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given 2 month(s) from the mail date of this Notice, or the time remaining from the Notice of Allowance and Fee(s) Due, whichever is longer, within which to respond.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED. **This period for reply is NOT extendable under 37 CFR 1.136(a).**

See attachment(s).

A copy of this notice MUST be returned with the reply. Please address response to "Mail Stop Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450".

/Maurita Rustia/
Publication Branch
Office of Data Management
(571) 272-4200

Application No. 10726897 **Drawings filed: 06/12/2009**

IDENTIFICATION OF DRAWING DEFICIENCIES

- [ ] There is a hole or the image thereof within the illustration. FIG(s)
- [ ] The illustration is penetrated or traversed by a solid or broken line that is not intended to be part of the drawing, such as a dark line caused by a flaw in the copying process. FIG(s)
- [ ] An ink stamp or the image thereof obscures part of the illustration. FIG(s)
- [ ] The drawing is marred by black smudges, obliterations, or fax/copier marks (for example, speckles or dots in a substantial portion of the drawing). FIG(s)
- [ ] Figure numbers are duplicated or missing. FIG(s)
- [ ] Drawing sheet or figure is missing. FIG(s)
- [ ] Numbers, letters, or reference characters in the drawing have been crossed out or are illegibly handwritten. FIG(s)
- [ ] The character of the lines, numbers, and letters is poor. FIG(s)
- [ ] The drawing's background shows that the original drawing was made on graph paper or other paper with a pattern or decoration. FIG(s)
- [ ] The FIG. number label is placed in a location that causes the drawing to be read upside down. FIG(s)
- [X] Data, a reference number, or part of the drawing is truncated or missing, or a lead line has no reference number. FIG(s) Figs. 2 and 3
- [ ] The drawing and/or the FIG. label contain(s) foreign language. FIG(s)
- [ ] This utility application contains a photograph of a view that is capable of being illustrated as a line drawing. FIG(s)
- [ ] A petition under 37 CFR 1.84(a)(2) to accept color drawings has been granted, but the brief description of the drawings in the specification does not contain (or has not been amended to contain) the paragraph required by 37 CFR 1.84(a)(2)(iii).
- [ ] This reissue application contains amended drawings that are not labeled as "Amended" as required by 37 CFR 1.173(b)(3). FIG(s)
- [ ] OTHER:
- [X] COMMENTS:
  Figs. 2 and 3 contains data that are cut-off/illegible.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

Certificate of Mailing or Transmission (Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

SHENG TAI (TED) TSAO
3906 BORGO COMMON
FREMONT, CA 94538

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

SHENG TAI TSAO	(Depositor's name)
[signature]	(Signature)
10/8/2013	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/04/2003	Sheng (Ted) Tsao		4178

TITLE OF INVENTION: Use of wireless devices' external storage

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	01/02/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
SALL, EL HADJI MALICK	2457	709-219000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address Form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 3 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: SHENG TAI (TED) TSAO

(B) RESIDENCE: (CITY and STATE OR COUNTRY): 3906 Borgo Common Fremont, CA, 94538

Please check the appropriate assignee category or categories (will not be printed on the patent): ☑ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☑ Issue Fee
- ☑ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☑ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change to Entity Status (from status indicated above):

☐ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue the payment in the micro entity amount will not be accepted at the risk of application abandonment.

☐ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

☐ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature: Sheng-Tai (Ted) Tsao Date: 10/09/2013

Typed or printed name: SHENG-TAI (TED) TSAO Registration No.:

Electronic Patent Application Fee Transmittal

Application Number:	10726897
Filing Date:	04-Dec-2003
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Filer:	Sheng Tai Tsao
Attorney Docket Number:	

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	890	890
Publ. Fee- Early, Voluntary, or Normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1190**

Electronic Acknowledgement Receipt

EFS ID:	17066590
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG TAI (TED) TSAO - 3906 BORGO COMMON - FREMONT CA 94538 US 4088130536 ted.tsao@sttwebos.com
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	08-OCT-2013
Filing Date:	04-DEC-2003
Time Stamp:	12:15:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1190

RAM confirmation Number	10630
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	897-allow-fee.PDF	2726649 404749837cc1238a37183692396b668957af2364	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	31595 34642a3a4ceb3901209145b5c9ff7a3565add686	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2758244		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 10/02/2013

SHENG TAI (TED) TSAO
3906 BORGO COMMON
FREMONT, CA 94538

EXAMINER
SALL, EL HADJI MALICK

ART UNIT	PAPER NUMBER
2457	

DATE MAILED: 10/02/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/04/2003	Sheng (Ted) Tsao		4178

TITLE OF INVENTION: Use of wireless devices' external storage

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	01/02/2014

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 10/02/2013
SHENG TAI (TED) TSAO
3906 BORGO COMMON
FREMONT, CA 94538

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/04/2003	Sheng (Ted) Tsao		4178

TITLE OF INVENTION: Use of wireless devices' external storage

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	01/02/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
SALL, EL HADJI MALICK	2457	709-219000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/04/2003	Sheng (Ted) Tsao		4178

7590 10/02/2013

SHENG TAI (TED) TSAO
3906 BORGO COMMON
FREMONT, CA 94538

EXAMINER	
SALL, EL HADJI MALICK	
ART UNIT	PAPER NUMBER
2457	

DATE MAILED: 10/02/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 2634 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 2634 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notices of Allowance and Fee(s) Due mailed between October 1, 2013 and December 31, 2013

(Addendum to PTOL-85)

If the "Notice of Allowance and Fee(s) Due" has a mailing date on or after October 1, 2013 and before January 1, 2014, the following information is applicable to this application.

If the issue fee is being timely paid on or after January 1, 2014, the amount due is the issue fee and publication fee in effect January 1, 2014. On January 1, 2014, the issue fees set forth in 37 CFR 1.18 decrease significantly and the publication fee set forth in 37 CFR 1.18(d)(1) decreases to $0.

If an issue fee or publication fee has been previously paid in this application, applicant is not entitled to a refund of the difference between the amount paid and the amount in effect on January 1, 2014.

Notice of Allowability	Application No. 10/726,897	Applicant(s) TSAO, SHENG (TED)	
	Examiner EL HADJI SALL	Art Unit 2457	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *09/10/2013*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *31,33,69-71,73,78-81,86,88-90 and 93-95*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☒ Interview Summary (PTO-413), Paper No./Mail Date *09/19/2013* .
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/EL HADJI SALL/
Primary Examiner, Art Unit 2457

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	10/726,897	TSAO, SHENG (TED)	
	Examiner	Art Unit	
	EL HADJI SALL	2457	

All participants (applicant, applicant's representative, PTO personnel):

(1) *EL HADJI SALL*. (3)_____.

(2) *Sheng T. Tsao*. (4)_____.

Date of Interview: *19 September 2013*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☒ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *31*.

Identification of prior art discussed: _____.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Examiner requested interview with the Applicant to further clarify the claim language and its support with respect to the specification.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/EL HADJI SALL/ Primary Examiner, Art Unit 2457	

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 4178

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/726,897	12/04/2003 RULE	709	2457	

APPLICANTS
Sheng (Ted) Tsao, San Jose, CA;

**** CONTINUING DATA **************************

**** FOREIGN APPLICATIONS **************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
03/05/2004

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /EL HADJI MALICK SALL/ Examiner's Signature	☐ Met after Allowance ES Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CA	4	21	3

ADDRESS
SHENG TAI (TED) TSAO
3906 Borgo Common
Fremont, CA 94538
UNITED STATES

TITLE
Use of wireless devices' external storage

FILING FEE RECEIVED		
538	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	**Art Unit**
	EL HADJI SALL	2457

CPC		
Symbol	**Type**	**Version**

CPC Combination Sets				
Symbol	**Type**	**Set**	**Ranking**	**Version**

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	17	
/EL HADJI SALL/ Primary Examiner.Art Unit 2457	09/27/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	3

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	**Art Unit**
	EL HADJI SALL	2457

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS					CLAIMED					NON-CLAIMED					
709	219					G	0	6	F	15 / 16 (2006.01.01)						
CROSS REFERENCE(S)																
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)															
709	203	219	226													
455	412.1	899														

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	17	
/EL HADJI SALL/ Primary Examiner.Art Unit 2457	09/27/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	3

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	**Art Unit**
	EL HADJI SALL	2457

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
/	1	/	17	2	33	/	49	/	65	10	81				
/	2	/	18	/	34	/	50	/	66	/	82				
/	3	/	19	/	35	/	51	/	67	/	83				
/	4	/	20	/	36	/	52	/	68	/	84				
/	5	/	21	/	37	/	53	3	69	/	85				
/	6	/	22	/	38	/	54	4	70	11	86				
/	7	/	23	/	39	/	55	5	71	/	87				
/	8	/	24	/	40	/	56	/	72	12	88				
/	9	/	25	/	41	/	57	6	73	13	89				
/	10	/	26	/	42	/	58	/	74	14	90				
/	11	/	27	/	43	/	59	/	75	/	91				
/	12	/	28	/	44	/	60	/	76	/	92				
/	13	/	29	/	45	/	61	/	77	15	93				
/	14	/	30	/	46	/	62	7	78	16	94				
/	15	1	31	/	47	/	63	8	79	17	95				
/	16	/	32	/	48	/	64	9	80						

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 17	
/EL HADJI SALL/ Primary Examiner.Art Unit 2457 (Primary Examiner)	09/27/2013 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 3

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	53902	709/200,203,217,219,226,245.ccls. 455/412.1,899.ccls.	US-PGPUB; USPAT	OR	ON	2013/09/21 11:12
L2	29768	retriev$5 same wireless same (stor$6 database)	US-PGPUB; USPAT	OR	ON	2013/09/21 11:13
L3	4831	2 and web and remot$5 near3 server	US-PGPUB; USPAT	OR	ON	2013/09/21 11:15
L4	6911	retriev$5 same wireless same (stor$6 database) same remot$5	US-PGPUB; USPAT	OR	ON	2013/09/21 11:16
L5	2342	3 and 4	US-PGPUB; USPAT	OR	ON	2013/09/21 11:16
L6	37	retriev$5 same wireless same (stor$6 database) same remot$5 same download$5 near3 file	US-PGPUB; USPAT	OR	ON	2013/09/21 11:19
L7	14	5 and 6	US-PGPUB; USPAT	OR	ON	2013/09/21 11:20
L8	1	7 and @ad<"20031204"	US-PGPUB; USPAT	OR	ON	2013/09/21 11:20
L10	3	("6,351,776" "20020133597" "7500069").pn.	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L11	36862	709/203,219,226.ccls.	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L12	3279	(internet web) near3 (drive storage memory database) and (creat$5 near (folder record)) and (wireless portable)	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L13	1	"20100005153"	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L14	1029	L12 and @ad<"20031204"	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L15	2276	allocat$5 near storage near3 space	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L16	4914	creat$5 near3 file adj system	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L17	240	L15 and L16	US-PGPUB;	OR	ON	2013/09/21 11:29

			USPAT			
L18	0	L10 and L17	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L19	3279	(internet web) near3 (drive storage memory database) and (creat$5 near (folder record)) and (wireless portable)	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L20	1029	L19 and @ad<"20031204"	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L21	582	L20 and (wireless portable) near3 (device terminal)	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L22	308	L21 and cell$5 near3 (phone call)	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L23	4	L21 and cell$5 near3 phone near call	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L24	4	L23 and wireless near12 (link communicat$5 connect$5)	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29
L25	50760	709/200,203,217,219,226,245.ccls.	US-PGPUB; USPAT	OR	ON	2013/09/21 11:29

9/21/2013 11:40:03 AM
C:\Users\esall\Documents\EAST\Workspaces\10726897.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	Art Unit
	DOHM CHANKONG	2452

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	200,203,217,219,226,245.	9/21/2013	ES
455	412.1,899.	9/29/2013	ES

SEARCH NOTES		
Search Notes	Date	Examiner
Updated Non Patent Litterature Search	9/21/2013	ES
Updated East Search	9/21/2013	ES

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
709	219,203,226.	9/21/2013	ES
455	412.1,899.	9/21/2013	ES

	/EL HADJI SALL/ Primary Examiner.Art Unit 2457

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
SERIAL NO.:	10/726,897 Confirmation No. 4178
FILING DATE:	12/04/2003
TITLE:	The Use of Wireless Devices' External Storage
EXAMINER:	Sall, El Hadji Malick
ART UNIT:	2457

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Supplement Amendment After to Non-Final Office Action

Dear Madam,

This is a supplement amendment after a second discussion with examiner for the process of examiner's amendment. The amendment includes adding new claims 93 – 95 and correcting an error introduced in the last amendment for the claims 31, 33, and 86 submitted on 8/28/2013. Very appreciate the examiner's amendment process.

In addition, support information for the claims 31, 33, and 86 is also enclosed.

There is no new matter being introduced and a request for allowance of instant application is respectively submitted.

Very Appreciate helps from the USPTO for entering the amended claims!

09/10/2013

//Shanegtai Tsao//
Sheng Tai (Ted) Tsao
3906 Borgo Common,
Fremont, CA 94538
408-813-0536
510-580-8592

AMENDMENT IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

1 – 30 (*Canceled*)

31. (*Currently Amended*) A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device ;

creating a file system for the storage space allocated for the wireless device ;

establishing a link for the wireless device [[to]] access <u>to</u> the storage space; and

updating the file system whenever a user of the wireless device performs an operation to the storage space,

wherein the updating of the file system comprises

updating the file system for storing a file therein ~~or retrieving a file therefrom~~, the storing of a file including to download a file from a remote web server, according to download information for the file cached in the wireless device received therefrom, directly into the storage device when the user via a web browser executed on the wireless device to perform an operation of downloading the file from the remote web server to the storage space instead of downloading the file into the wireless device itself.

32. (*Canceled*)

33. (*Currently Amended*) A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish a link for the each of the wireless devices access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs an operation to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices,

wherein the updating of the file system comprises

updating the file system for storing a file therein ~~or retrieving a file therefrom~~, the storing of a file including to download a file from a remote web server, according to download information for the file cached in the each of the wireless devices received therefrom, directly into the storage device allocated thereto when the user via a web browser executed on the each of the wireless devices to perform an operation of downloading the file from the remote web server to the storage space instead of downloading the file into the each of the wireless devices itself; ; and

the wireless devices, wherein each of the wireless devices is operable access to the storage space allocated to the each of the wireless devices.

34 – 68 (*Canceled*)

69. *(Previously Presented)* The method as recited in claim 31, wherein the operation to the storage space comprises creating from the wireless device a folder in the storage space.

70. (*Previously Presented*) The method as recited in claim 31, wherein the operation to the storage space comprises deleting or moving or copying or renaming, from the wireless device, a file or a folder being stored in the storage space.

71. (*Previously Presented*) The method as recited in claim 31, wherein the link is wireless.

72. (*Canceled*)

73. (*Previously Presented*) The method as recited in claim 71, further comprising: facilitating a console for an administrator of a service provider to partition a storage device for creating the storage space according to the predefined capacity for the user of the wireless device, wherein the service provider provides services for the wireless device.

74. (*Canceled*).

75. (*Canceled*)

76 - 77. (*Canceled)*

78. (*Previously Presented*) The system as recited in claim 33, wherein the operation to the storage space comprises creating from the each of the wireless devices a folder in the storage space.

79. (*Previously Presented*) The system as recited in claim 33, wherein the operation to the storage space comprises deleting or moving or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

80. (*Previously Presented*) The system as recited in claim 33, wherein the link is wireless.

81. *(Previously Presented*) The system as recited in claim 80, wherein the server is further configured to facilitate a console for an administrator of a service provider to partition a storage device for creating the storage space according to the predefined capacity for a user of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Canceled*)

83. (*Canceled*)

84 - 85. (*Canceled).*

86. *(Currently Amended)* A non-transitory computer-readable storage medium comprising:

computer program instructions that, when executed by a server, configure the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish a link for the each of the wireless devices access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs an operation to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices,

wherein the updating of the file system comprises

updating the file system for storing a file therein ~~or retrieving a file therefrom~~, the storing of a file including to download a file from a remote web server, according to download information for the file cached in the each of the wireless devices received therefrom, directly into the storage device allocated thereto when the user via a web browser executed on the each of the wireless devices to perform an operation of downloading the file from the remote web server to the storage space instead of downloading the file into the each of the wireless devices itself.

87. (*Canceled)*

88. (*Previously Presented*) The storage medium of claim 86, wherein the program instructions further configure the server to facilitate a console for an administrator of a service provider to partition a storage device for creating the storage space for a user of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices,.

89. (*Previously Presented*) The storage medium of claim 86, wherein the operation to the storage space further comprises deleting or moving or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

90. (*Previously Presented*) The storage medium of claim 86, wherein the operation to the storage space comprise creating from the each of the wireless devices a folder in the storage space.

91. (*Canceled*)

92. (*Canceled)*

93. (New) The method as recited in the claim 31, wherein said for the wireless device access to the storage space comprises:

from the wireless device to retrieving a file from the storage device for access to a digital picture, a video, a music or a message being stored therein.

94. (*New*) The system as recited in the claim 33, wherein said for the wireless device access to the storage space comprises:

from the wireless device to retrieve a file from the storage device for access to a digital picture, a video, a music or a message being stored therein.

95. (*New*) The storage medium of claim 86, wherein said for the wireless device access to the storage space comprises:

from the wireless device to retrieve a file from the storage device for access to a digital picture, a video, a music or a message being stored therein.

The support for limitation recited in the claim 31, 33, and 86, and for new claims 93 - 95 can be found bellow:

Limitation recited in the claims 31, 33, and 86	Disclosed in	
"the updating of the file system"	a) Page 5, lines 1 – 2, b) Page 5, lines 28 – 36	a) A file system is created on an assigned storage volume, b) updating the file system for storing a file occurred such as "writing"
	c) Page 6, lines 1 – 20	Updating the file in response to downloading a file directly to the assigned storage space in stead of the downloading into the wireless device.
	d) Page 5, lines 23 – 27 e) Page 3, lines 22 -25	Updating the file in response to create folder, copying, moving, or renaming file or folder
Limitation recited in the claims 93 95	Page 3, lines 29 – 30, Page 6, lines 21 - 25	

Electronic Acknowledgement Receipt

EFS ID:	16815654
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG TAI (TED) TSAO - 3906 Borgo Common - Fremont CA 94538 US 4088130536 ted.tsao@sttwebos.com
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	10-SEP-2013
Filing Date:	04-DEC-2003
Time Stamp:	17:16:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	897claims-amend.pdf	98531 e7fd4e65b9cb4af1b671dd7fb0b6dc6daf6f61d8	no	6
Warnings:					
Information:					
2	Applicant Arguments/Remarks Made in an Amendment	897claims-support-info.pdf	33101 da69589959ae371ad2ffb501a34b3e8e7a73bbab	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	131632		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 10/726,897	Filing Date 12/04/2003	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	09/10/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 17	Minus	** 22	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/ANTJUAN RIVERA/

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
SERIAL NO.:	10/726,897 Confirmation No. 4178
FILING DATE:	12/04/2003
TITLE:	The Use of Wireless Devices' External Storage
EXAMINER:	Sall, El Hadji Malick
ART UNIT:	2457

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Supplement Amendment After to Non-Final Office Action

Dear Madam,

This is a supplement amendment after a discussion with examiner for the process of examiner's amendment. The amended claims include implementing suggestions from the examiner such as canceling the claims 75, 83 and 91 and move the contents of these claims into the independent claims. The amendments are based on the claims submitted on 08/06/2013.

The amendments also include deleting the limitation of "the wireless device includes a function of making or receiving a cellular phone call" from the independent claims 31, 33, and 86 because such languages are not fully supported by the specification of instant application that was disclosed in page 2, lines 23 – 24 of the initially filed specification.

There is no new matter being introduced and a request for allowance of instant application is respectively submitted.

Very Appreciate helps from the USPTO for entering the amended claims !

08/28/2013

//Shanegtai Tsao//
Sheng Tai (Ted) Tsao
3906 Borgo Common,
Fremont, CA 94538
408-813-0536
510-580-8592

AMENDMENT IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

1 – 30 (*Canceled*)

31. (*Currently Amended*) A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device ;

creating a file system for the storage space allocated for the wireless device ;

establishing a link for the wireless device to access the storage space; and

updating the file system whenever a user of the wireless device performs an operation to the storage space,

wherein the updating of the file system ~~includes~~ comprises

updating the file system for storing a file therein or retrieving a file therefrom, the storing of a file including to download[[ing]] a file from a remote web server [[site]], according to download information for the file cached in the wireless device received therefrom, directly into the storage device when the user via a web browser executed on the wireless device to perform an operation of downloading the file from the remote web [[site]] server to the storage space instead of downloading the file into the wireless device itself[[,]] ~~wherein the wireless device includes a function of making or receiving a cellular phone call~~.

32. (*Canceled*)

33. (*Currently Amended*) A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish a link for the each of the wireless devices access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs an operation to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices,

wherein the updating of the file system comprises ~~includes~~

updating the file system for storing a file therein or retrieving a file therefrom, the storing of a file including to download[[ing]] a file from a remote web server [[site]], according to download information for the file cached in the each of the wireless devices received therefrom, directly into the storage device allocated thereto when the user via a web browser executed on the each of the wireless devices to perform an operation of downloading the file from the remote web server [[site]] to the storage space instead of downloading the file into the each of the wireless devices itself; ; and

the wireless devices, wherein each of the wireless devices is operable access to the storage space allocated to the each of the wireless devices~~, and has a function of making or receiving a cellular phone call~~.

34 – 68 (*Canceled*)

69. *(Previously Presented)* The method as recited in claim 31, wherein the operation to the storage space comprises creating from the wireless device a folder in the storage space.

70. (*Previously Presented*) The method as recited in claim 31, wherein the operation to the storage space comprises deleting or moving or copying or renaming, from the wireless device, a file or a folder being stored in the storage space.

71. (*Previously Presented*) The method as recited in claim 31, wherein the link is wireless.

72. (*Canceled*)

73. (*Previously Presented*) The method as recited in claim 71, further comprising: facilitating a console for an administrator of a service provider to partition a storage device for creating the storage space according to the predefined capacity for the user of the wireless device, wherein the service provider provides services for the wireless device.

74. (*Canceled*).

75. (*Canceled*)

76 - 77. (*Canceled)*

78. (*Previously Presented*) The system as recited in claim 33, wherein the operation to the storage space comprises creating from the each of the wireless devices a folder in the storage space.

79. (*Previously Presented*) The system as recited in claim 33, wherein the operation to the storage space comprises deleting or moving or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

80. (*Previously Presented*) The system as recited in claim 33, wherein the link is wireless.

81. *(Previously Presented*) The system as recited in claim 80, wherein the server is further configured to facilitate a console for an administrator of a service provider to partition a storage device for creating the storage space according to the predefined capacity for a user of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Canceled*)

83. (*Canceled*)

84 - 85. (*Canceled).*

86. *(Currently Amended)* A non-transitory computer-readable storage medium comprising:

~~executable~~ computer program instructions that, when executed by a server, configure the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish a link for the each of the wireless devices access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs an operation to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices,

wherein the updating of the file system comprises ~~includes~~ updating the file system for storing a file therein or retrieving a file therefrom, the storing of a file including to download[[ing]] a file from a remote web server [[site]], according to download information for the file cached in the each of the wireless devices received therefrom, directly into the storage device allocated thereto when the user via a web browser executed on the each of the wireless devices to perform an operation of downloading the file from the remote web server [[site]] to the storage space instead of downloading the file into the each of the wireless devices itself[[~~,~~]]

~~wherein each of the wireless devices comprises a function of making or receiving a cellular phone call~~.

87. (*Canceled)*

88. (*Previously Presented*) The storage medium of claim 86, wherein the program instructions further configure the server to facilitate a console for an administrator of a service provider to partition a storage device for creating the storage space for a user of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices,.

89. (*Previously Presented*) The storage medium of claim 86, wherein the operation to the storage space further comprises deleting or moving or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

90. (*Previously Presented*) The storage medium of claim 86, wherein the operation to the storage space comprise creating from the each of the wireless devices a folder in the storage space.

91. (*Canceled*)

92. (*Canceled)*

Electronic Acknowledgement Receipt

EFS ID:	16709983
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG TAI (TED) TSAO - 3906 Borgo Common - Fremont CA 94538 US 4088130536 ted.tsao@sttwebos.com
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	28-AUG-2013
Filing Date:	04-DEC-2003
Time Stamp:	15:04:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Claims	897claims-amend3.pdf	109500 f1d8099a9f4fe7d666aa47ea32df1d6c5580849c	no	6
Warnings:					
Information:					
		Total Files Size (in bytes):	109500		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
SERIAL NO.:	10/726,897 Confirmation No. 4178
FILING DATE:	12/04/2003
TITLE:	The Use of Wireless Devices' External Storage
EXAMINER:	Sall, El Hadji Malick
ART UNIT:	2457

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Supplement Amendment After to Non-Final Office Action

Dear Madam,

This is a supplement amendment after an interview with examiner. The amendment includes canceling claims 76, 77, 84, 87 and 92. The supporting for amendment can be found in the specification and there is no new matter being added.

Very appreciate helps from USPTO to enter the amended claims and a request for allowing the amended claims is respectively submitted.

Also, a revised Remark is also enclosed, which is more precisely point out the patentable elements over the referenced arts.

Thanks,

08/06/2013

//Shanegtai Tsao//
Sheng Tai (Ted) Tsao
2979 Heidi Drive,
San Jose, CA 95132
408-813-0536

AMENDMENT IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

1 – 30 (*Canceled*)

31. (*Currently Amended*) A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device ;

creating a file system for the storage space allocated for the wireless device ;

establishing a link for the wireless device to access the storage space; and

updating the file system whenever a user of the wireless device performs an operation[[s]] to the storage space,

wherein the updating of the file system includes

downloading a file from a remote web site, according to download information for the file cached in the wireless device received therefrom, directly into the storage device when the user via a web browser executed on the wireless device to perform an operation of downloading the file from the remote web site to the storage space instead of downloading the file into the wireless device itself,

wherein the wireless device includes a function of making or receiving a cellular phone call.

32. (*Canceled*)

33. (*Currently Amended*) A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish a link for the each of the wireless devices access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs an operation[[s]] to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices, wherein the updating of the file system includes

downloading a file from a remote web site, according to download information for the file cached in the each of the wireless devices received therefrom, directly into the storage device allocated thereto when the user via a web browser executed on the each of the wireless devices to perform an operation of downloading the file from the remote web site to the storage space instead of downloading the file into the each of the wireless devices itself; ; and

the wireless devices, wherein each of the wireless devices is operable access to the storage space allocated to the each of the wireless devices, and has a function of making or receiving a cellular phone call.

34 – 68 (*Canceled*)

69. *(Currently Amended)* The method as recited in claim 31, wherein the operation[[s]] to the storage space comprises creating from the wireless device a folder in the storage space.

70. (*Currently Amended*) The method as recited in claim 31, wherein the operation[[s]] to the storage space comprises deleting or moving or copying or renaming, from the wireless device, a file or a folder being stored in the storage space.

71. (*Previously Presented*) The method as recited in claim 31, wherein the link is wireless.

72. (*Canceled*)

73. (*Previously Presented*) The method as recited in claim 71, further comprising: facilitating a console for an administrator of a service provider to partition a storage device for creating the storage space according to the predefined capacity for the user of the wireless device, wherein the service provider provides services for the wireless device.

74. (*Canceled*).

75. (*Currently Amended*) The method as recited in claim 31[[70]], wherein the operation to the storage space comprises: facilitating ~~the wireless device executes a web browser through which~~ the user via a web browser executed in the wireless device access to the storage space for storing a file therein or retrieving a file therefrom ~~or storing a file therein~~.

76 - 77. (*Canceled)*

78. (*Currently Amended*) The system as recited in claim 33, wherein the operation[[s]] to the storage space comprises creating from the each of the wireless devices a folder in the storage space.

79. (*Currently Amended*) The system as recited in claim 33, wherein the operation[[s]] to the storage space comprises deleting or moving or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

80. (*Previously Presented*) The system as recited in claim 33, wherein the link is wireless.

81. *(Previously Presented*) The system as recited in claim 80, wherein the server is further configured to facilitate a console for an administrator of a service provider to partition a storage device for creating the storage space according to the predefined capacity for a user of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Canceled*)

83. (*Currently Amended*) The system as recited in claim 33[[~~79~~]], wherein the operation to the storage space comprises:

allowing the user via ~~each of the wireless devices executes~~ a web browser executed in the each of the wireless devices ~~through which a user thereof~~ access to the [[a]] storage space allocated thereto ~~the each of the wireless devices~~ for storing a file therein or retrieving a file therefrom ~~or storing a file therein~~.

84 - 85. (*Canceled*).

86. *(Currently Amended)* A ~~computer program product for expanding storage capacity for a plurality of wireless devices, stored in a non-transitory~~ computer-readable storage medium comprising executable ~~, the~~ computer ~~program product comprising:~~
program instructions that, when executed by a server, configure the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish a link for the each of the wireless devices access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs an operation[[s]] to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices,

wherein the updating of the file system includes

downloading a file from a remote web site, according to download information for the file cached in the each of the wireless devices received therefrom, directly into the storage device allocated thereto when the user via a web browser executed on the each of the wireless devices to perform an operation of downloading the file from the remote web site to the storage space instead of downloading the file into the each of the wireless devices itself,

wherein each of the wireless devices comprises a function of making or receiving a cellular phone call.

87. (*Canceled)*

88. (*Currently Amended*) The storage medium ~~program product~~ of claim 86, wherein the program instructions further configure the server to facilitate a console for an administrator of a service provider to partition a storage device for creating the storage space for a user of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices,.

89. (*Currently Amended*) The storage medium ~~program product~~ of claim 86, wherein the operation[[s]] to the storage space further comprises deleting or moving or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

90. (*Currently Amended*) The storage medium ~~program product~~ of claim 86, wherein the operation[[s]] to the storage space comprise creating from the each of the wireless devices a folder in the storage space.

91. (*Currently Amended*) The storage medium ~~program product~~ of claim 86[[89]], ~~wherein~~ comprising program instructions that, when executed by the each of the wireless devices ~~is operable to execute~~, configure the each of the wireless devices, to be operable with the server, for allowing the user via a web browser executed ~~through which a user~~ thereof to perform an operation ~~access~~ to the [[a]] storage space ~~allocated to the each of the wireless devices~~ for storing a file therein or retrieving a file therefrom ~~or storing a file therein~~.

92. (*Canceled)*

REMARKS

The Office Action sent to Applicant on 06/18/2013 has been carefully considered. Claims 31, 33 and 69 – 73, 75 – 81, 83 – 84, and 86 - 91 are previously pending and all pending claims stand rejected. The claims are amended in response to the office action. Applicant respectfully requests reconsideration of the instant application in light of the amendments above and the remarks made below.

1. Regarding The 35 USC §103 Rejection:

The Office Action rejected claims 31, 33, 71, 72,, 76, 77, 80, 84 – 87 under 35 U.S.C. 103(a) as being obvious over O'Brien (US. 6,351,776), hereinafter referred to as "O'Brien" in view of Yach et al., US 20020128036 hereinafter "Yach".

Applicant would like to explain why the mentioned claims are patentable over O'Brien in view of Yach as bellow:

A) Regarding the rejected claims 31, 33, and 86:

First, There is evidence that O'Brien let user manual interactively entering the download information. Let us look carefully at the Fig. 11, and column 18, lines 33 – 39 referenced by the Office Action (recited in part and emphasis added):

"as shown in fig. 11, the save to my xdrive system 1100 first has the user 1110 submit the URL at step 1112. in order to access the x:drive system 100 of the present invention, the user submits the URL as well as his or her user name and password at step 1114. upon submitting the URL and the appropriate verification information, evaluation is made of the information for authentication purposes at step 1116."

The key question raised by applicant is that how the user 1110 submit the URL at step 1112? It is commonly known by ordinary user that the words of "the user submit the URL" to the X:Drive means the user interactively input the URL to the X:Drive. That also means the user may manually type the URL along with the user's password and name in order for access to the X:Drive according to the Col. 18 lines 33 – 39 of O'Brien.

Therefore, it is clear that O'Brein has failed to disclose the wireless device of instant application "transmitting the downloading information cached in the wireless device to the server" without the user manually typing the information about a downloadable file to the server.

The page 5, lines 36 – page 6, lines 20 in the specification of instant application has clearly disclosed that a user first via browser to a web site to obtain information about a downloadable file, then the wireless device sends the information about the downloadable file stored in the cache to the server to let server perform the download without the user to manually typing the information to the server.

Since O'Brien and Yach has failed to teach the wireless device transmitting the downloading information cached in the wireless device to the server, instead of the let user manually typing the URL, name, and password to the X:Drive, O'Brien & Yach have failed to teach the "operations" to

the storage space allocated to the wireless device of claims 31, 33, and 86. Thus for this reasons alone, the claims 31, 33, 86, and the claims & 77, 84, and 87 are all patentable over the combined O'Brien and Yach.

Second, In addition, step 1172 in Fig. 11 of O'Brien has revealed writing the download file into a TEMP space first, then in the step 1174 transfer data to the user's storage space. Contrary to O'Brien, instant application does not require the downloaded file to be stored twice but directly store into the storage space allocated to the wireless device. Thus, for this reason alone, the claims 31, 33, and 86 are also patentable over the O'Brien.

Third, Although Jhingan disclosed creating a folder, yet O'Brien, Yach, and Jhingan all have failed to disclose operation to the folders of instant application such as disclosed in page 3, lines 21 – 29 that includes creating structured layered directory or folders, deleting, moving, copying, or renaming for folders or directories on the assigned storage space.

Fourth, In addition, the referenced [0057] of Jhingan recited bellow:

"[0057] Subsequently in step 606, as the user performs a file or folder operation, such as creating a folder, the Web application 106 makes an API call with the encrypted session key to the USC server 202A in step 608 to create a folder for the user on the USC server 202A. In this instance, the API call is:"

Contrary, instant application does not required for an application server 106 makes API call to the USC server 202A to create a folder of Jhingan. Instead, a user of instant application from a wireless device of instant application can perform an operation for request creating a folder in the storage space allocated to the wireless device while the server based on the user request to directly creation of the folder in the storage as disclosed in page 5, lines 8 – 27. This reveals a significant difference in architecture between the Jhingan and instant application.

Fifth, O'Brien, Yach, Jhingan all have failed to disclose "creating a file system for the storage space allocated for the wireless device". Although office action referred Fig. 2, item 204 and commented that O'Brien disclosed the use of a file system, Applicant would like to assert that that, by a common sense, the meanings of "creating" of an object and "use" of an object are totally different while O'Brien never use words of "creating a file system".

Sixth, In addition, actually, in the specification and drawings of O'Brien, Yach, Jhingan, and Hochmuth there are no such words of "partitioning a storage device to create the storage space" for the wireless device while it is disclosed in page 4, lines 23 – 40 of specification of instant application.

Summary:

The above remark has clearly demonstrated that all O'Brien, Yach, Jhingan and Hochmuth have failed to teach the creating a file system for a storage space allocated to a wireless device and facilitating operations to the storage space of instant application. Thus, according to MPEP §2143.03,

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art *In re Royka*, 490 f. 2d 98 1, 180 USPQ 580 (CCPA 1974).", "All words in a claim must be considered in judging the patentability of the claim against the prior art" In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494,496 (CCPA 1970).

Therefore, the independent claims 31, 33, and 86 are non-obvious and patentable over the combined O'Brien, Yach, Jhingan and Hochmuth. In addition, if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious, In re Fime, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir.1988). Further all claims depending on the independent claims 31, 33 and 86 shall be patentable as matter of the patent law (See Jenric/Pentron, Inc. v. Dillon Co., 205 F. 3d 1377, 1382 (Fed. Cir. 2000).). Thus, the withdrawing all 35 USC 103 rejections from the Office Action of 07/26/2011 is respectively requested.

Applicant believes that the proposed amended claims and the remarks made above have fully overcome the rejections made in Office Action on 06/18/2013 and the instant application are in condition for allowance. Therefore, the issuance of a formal notice of allowance at an earlier date is respectfully requested.

Applicant also very appreciates the Office Action for carefully examining the present application and if a telephone conference would facilitate the prosecution of this application, the applicant Sheng Tai (Ted) Tsao can be reached at (408) 813-0536 and at 510-580-8592. Please also forward the corresponding materials to inventor's address of 3906 Borgo Common, Fremont, CA 94538.

Respectfully submitted,
Date: 08/05/2013.

/Shengtai tsao/
Sheng Tai (Ted) Tsao
3906 Borgo Common
Fremont, CA 94538

Electronic Acknowledgement Receipt	
EFS ID:	16516256
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG TAI (TED) TSAO - 3906 Borgo Common - Fremont CA 94538 US 4088130536 ted.tsao@sttwebos.com
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	06-AUG-2013
Filing Date:	04-DEC-2003
Time Stamp:	16:56:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	897claims-amend2.pdf	105371 79f3ec7690f55214bc1c6b37edc1c4f09327bfa1	no	6
Warnings:					
Information:					
2	Applicant Arguments/Remarks Made in an Amendment	897Remark.pdf	109176 cc426eabf0127a1dd52e1102421d73ce25d8ef18	no	3
Warnings:					
Information:					
		Total Files Size (in bytes):	214547		

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<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 10/726,897	Filing Date 12/04/2003	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **08/06/2013**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 17	Minus	** 22	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/RENEE COLLINS/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
SERIAL NO.:	10/726,897 Confirmation No. 4178
FILING DATE:	12/04/2003
TITLE:	The Use of Wireless Devices' External Storage
EXAMINER:	Sall, El Hadji Malick
ART UNIT:	2457

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Response to Non-Final Office Action for the application 10/726,897

Dear Madam:

This is a response to the non-final office action sent to applicant on 06/18/2013. The response includes amendment to the claims for improving quality of the claims in response to the office rejection without introducing new matter, and includes canceling claim 72 and adding a new claim 92. Please also find an enclosed copy of remark in response to the office action.

Applicant very appreciates helps from USPTO to enter the amended claims and an earlier allowance of the claims is respectively submitted.

Thanks for your help

07/15/2013

//Shanegtai Tsao//
Sheng Tai (Ted) Tsao
2979 Heidi Drive,
San Jose, CA 95132
408-813-0536

AMENDMENT IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

1 – 30 (*Canceled*)

31. (*Currently Amended*) A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device ;

creating a file system for the storage space allocated for the wireless device ;

establishing ~~providing~~ a link for the wireless device to access the storage space; and

updating the file system whenever a user of the wireless device performs operations to the storage space, wherein the wireless device includes a function of making or receiving a cellular phone call.

32. (*Canceled*)

33. (*Currently Amended*) A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish ~~provide~~ a link for the each of the wireless devices ~~to~~ access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices; ; and

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the wireless devices, wherein each of the wireless devices is ~~configured~~ operable to ~~access world wide web and~~ access to the storage space allocated to the each of the wireless devices, and ~~each of the wireless devices~~ has a function of making or receiving a cellular phone call.

34 – 68 (*Canceled*)

69. *(Previously Presented)* The method as recited in claim 31, wherein the operations to the storage space comprise creating from the wireless device a folder in the storage space.

70. (*Currently Amended*) The method as recited in claim 3169, wherein the operations to the storage space comprise deleting, or moving, or copying or renaming, from the wireless device, a file or a folder being stored in the storage space.

71. (*Previously Presented*) The method as recited in claim 31, wherein the link is wireless.

72. (*Canceled*)

73. (*Currently Amended*) The method as recited in claim 71, further comprising:
facilitating ~~providing~~ a console for an administrator of a service provider to partition a storage device for creating the storage space according to the predefined capacity ~~allocate the storage space~~ for the user of a subscriber of the wireless device, wherein the service provider provides services for the wireless device.

74. (*Canceled*).

75. (*Currently Amended*) The method as recited in claim 7073, wherein the wireless device executes a web browser through which the user ~~subscriber~~ access~~es~~ to the storage space for retrieving a file therefrom or storing a file therein.

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76. (*Currently Amended*) The method as recited in claim 75~~34~~, further comprising facilitating to store a file being downloaded from a website directly into the storage space instead of downloading the file into the wireless device itself.

77. (*Previously Presented*) The method as recited in claim 76, wherein said facilitating to store a file being downloaded from a website directly into the storage space comprises:

obtaining downloading information for the file;

transmitting the downloading information cached in the wireless device to the server; and

causing the server in accordance with the downloading information to download the file directly into the storage space.

78. (*Previously Presented*) The system as recited in claim 33, wherein the operations to the storage space comprise creating from the each of the wireless devices a folder in the storage space.

79. (*Currently Amended*) The system as recited in claim 33~~78~~, wherein the operations to the storage space comprise deleting~~,~~ or moving~~,~~ or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

80. (*Currently Amended*) The system as recited in claim 33, wherein the link is wireless.

81. *(Currently Amended*) The system as recited in claim 80, wherein the server is further configured to facilitate ~~provide~~ a console for an administrator of a service provider to partition a storage device for creating ~~allocate~~ the storage space according to the predefined capacity for a user ~~subscriber~~ of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Canceled*)

83. (*Currently Amended*) The system as recited in claim 7981, wherein each of the wireless devices executes a web browser through which a user ~~subscriber~~ thereof ~~accesses~~ to a storage space allocated to the each of the wireless devices ~~thereof~~ for retrieving a file therefrom or storing a file therein.

84. (*Currently Amended*) The system as recited in claim 8333, wherein each of the wireless devices further is operable ~~facilitated~~ to store ~~allow downloading~~ a file being downloaded from a website directly into the storage space instead of downloading the file into the each of the wireless devices itself.

85. (*Canceled*)

86. *(Currently Amended)* A computer program product for expanding storage capacity for ~~of~~ a plurality of wireless devices, stored in a non-transitory computer-readable medium ~~in a server~~, the computer program product comprising:

program instructions that, when executed by a server, configure ~~for~~ the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

establish ~~provide~~ a ~~wireless~~ link for the each of the wireless devices ~~to~~ access to the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices~~; and~~

~~program instructions for each of the wireless devices, wherein each of the wireless devices is configured to access world wide web and access the storage space allocated to the wireless device~~,

wherein ~~and~~ each of the wireless devices comprises a function of making or receiving a cellular phone call

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87. (*Currently Amended*) The program product of claim 9186, wherein each of the wireless devices further is operable to store ~~facilitated to allow downloading~~ a file being downloaded from a remote web site into the storage space directly instead of downloading the file into the each of the wireless devices itself.

88. (*Currently Amended*) The program product of claim 86, wherein the program instructions further configure the server ~~is further configured~~ to facilitate ~~provide~~ a console for an administrator of a service provider to partition a storage device for creating ~~allocate~~ the storage space for a user ~~subscriber~~ of one of the wireless devices, wherein the service provider provides services for the one of the wireless devices,.

89. (*Currently Amended*) The program product of claim 8690, wherein the operations to the storage space comprise deleting~~,~~ or moving~~,~~ or copying or renaming, from the each of the wireless devices, a file or a folder being stored in the storage space.

90. (*Previously Presented*) The program product of claim 86, wherein the operations to the storage space comprise creating from the each of the wireless devices a folder in the storage space.

91. (*Currently Amended*) The program product of claim 8988, wherein each of the wireless devices is operable to executes a web browser through which a user ~~subscriber~~ thereof accesses to a storage space allocated to the each of the wireless devices ~~thereof~~ for retrieving a file therefrom or storing a file therein.

92. (*New*) The system of claim 84, wherein the each of the wireless devices is configured to

obtain downloading information for the file;

transmit the downloading information cached in the each of the wireless devices to the server; and

cause the server in accordance with the downloading information to download the file directly into the storage space allocated to the each of the wireless devices.

REMARKS

The Office Action sent to Applicant on 06/18/2013 has been carefully considered. Claims 31, 33 and 69 – 73, 75 – 81, 83 – 84, and 86 - 91 are previously pending and all pending claims stand rejected. The claims are amended in response to the office action. Applicant respectfully requests reconsideration of the instant application in light of the amendments above and the remarks made below.

1. Regarding The 35 USC §103 Rejection:

The Office Action rejected claims 31, 33, 71, 72,, 76, 77, 80, 84 – 87 under 35 U.S.C. 103(a) as being obvious over O'Brien (US. 6,351,776), hereinafter referred to as "O'Brien" in view of Yach et al., US 20020128036 hereinafter "Yach".

Applicant would like to explain why the mentioned claims are patentable over O'Brien in view of Yach as bellow:

A) Regarding the rejected claims 31, 33, and 86:

First, O'Brien has failed to disclose "creating a file system for the storage space allocated for the wireless device". Although office action referred Fig. 2, item 204 and commented that O'Brien disclosed the use of a file system, Applicant would like to assert that that, by a common sense, the meanings of "creating" of an object and "use" of an object are totally different while O'Brien never use words of "creating a file system". In addition, ordinary people can also tell the difference between the "creating a file system" and "creating a file system for the storage space allocated for the wireless device".

As matter of the fact, both of O'Brien and Yach have never disclose and failed to enable the "creating a file system for the storage space allocated for the wireless device" that disclosed by instant application disclosed in page 5, lines 1 – 2 of instant application such as (recited in part & emphasis added) ".....Finally, for each small storage volume, a corresponding file system could be built up". Therefore, for this reason alone, the claims 31, 33, and 86 are patentable over the both of O'Brien and Yach.

Second, the X:Drive of O'Brien has failed to teach (recited in part & emphasis added)

"update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices" of claims 31, 33, and 86.

Applicant would like to point out again that both O'Brien and Yach have failed to teach " the file system" created for the storage space allocated for the wireless device as discussed before. More importantly, they also failed to teach "updating the file system" because the "updating" is expected to respond to the user performing operations to the storage space and both of O'Brien and Yach have failed to teach the operations to the storage space.

For example, the "operations" in the claim 31, 33, and 86 are further defined by claims 76 & 77, 84, and 87, where the operation includes

"…. facilitating to store a file being downloaded from a website directly into the storage space instead of downloading the file into the wireless device itself" of claim 76 and 84 that further comprises

"obtaining downloading information for the file; transmitting the downloading information cached in the wireless device to the server …. " of the claims 77 and 92.

On the other hand, with O'Brien there is no evidence of "transmitting the downloading information cached in the wireless device to the server" that disclosed in page 5, lines 36 – page 6, lines 20 of the specification of instant application filed on 12/04/2013.

Let us look carefully at the Fig. 11, and column 18, lines 33 – 39 referenced by the Office Action (recited in part and emphasis added):

"as shown in fig. 11, the save to my xdrive system 1100 first has the user 1110 submit the URL at step 1112. in order to access the x:drive system 100 of the present invention, the user submits the URL as well as his or her user name and password at step 1114. upon submitting the URL and the appropriate verification information, evaluation is made of the information for authentication purposes at step 1116."

The key question raised by applicant is that how the user 1110 submit the URL at step 1112? It is commonly known by ordinary user that the words of "the user submit the URL" to the X:Drive means the user interactively input the URL to the X:Drive. That also means the user may manually type the URL along with the user's password and name in order for access to the X:Drive according to the Col. 18 lines 33 – 39 of O'Brien.

Therefore, it is clear that O'Brein has failed to disclose the wireless device of instant application "transmitting the downloading information cached in the wireless device to the server" without the user manually typing the information about a downloadable file to the server.

The page 5, lines 36 – page 6, lines 20 in the specification of instant application has clearly disclosed that a user first via browser to a web site to obtain information about a downloadable file, then the wireless device sends the information about the downloadable file stored in the cache to the server to let server perform the download without the user to manually typing the information to the server.

Since O'Brien and Yach has failed to teach the wireless device transmitting the downloading information cached in the wireless device to the server, instead of the let user manually typing the URL, name, and password to the X:Drive, O'Brien & Yach have failed to teach the "operations" to the storage space allocated to the wireless device of claims 31, 33, and 86. Thus for this reasons alone, the claims 31, 33, 86, and the claims & 77, 84, and 87 are all patentable over the combined O'Brien and Yach.

In addition, step 1172 in Fig. 11 of O'Brien has revealed writing the download file into a TEMP space first, then in the step 1174 transfer data to the user's storage space. Contrary to O'Brien, instant application does not require the downloaded file to be stored twice but directly store into the

storage space allocated to the wireless device. Thus, for this reason alone, the claims 31, 33, and 86 are also patentable over the O'Brien.

Applicant shall mention that O'Brien has mentioned "cache" yet it is known by ordinary person that the mentioning of the "cache" is not equivalent to disclose "transmitting the downloading information cached in the wireless device to the server". Therefore, from above discussion, a request for withdrawing the 35 USC § 103 rejection and a request for allowing the above claims are respectively submitted.

Regarding rejections over claim 71 and 80:

The claims 71 and 80 are dependent claims to the claims 31, 33 and since the claims 31 and 33 are patentable over the combined O'Brien, Yach, and Jhingan, therefore, by the law the claim 71 and 80 are also patentable over all of O'Brien, Yach, and Jhingan. Therefore, a request for withdrawing the 35 USC § 103 rejection over the claim 71 and a request for allowing the claim 71 are respectively submitted.

Regarding rejection over claim 72:

The claims 72 is canceled, therefore, the rejection over the claim 72 is moot.

Regarding rejections over claims 76, 84, and 87:

As discussed before that O'Brien and Yach has failed to teach the wireless device transmitting the downloading information cached in the wireless device to the server, Therefore, a request for withdrawing the 35 USC § 103 rejection over the claims 76, 84, and 87 and a request for allowing the claims 76, 84, and 87 are respectively submitted.

Regarding rejections over claims 77 and 92:

For the same reasons discussed above, the claim 77 is patentable over the O'Brien and Yach. Therefore, a request for withdrawing the 35 USC § 103 rejection over the claim 77 and a request for allowing the claims 77 are respectively submitted.

B) Regarding claim rejections over the claims 69 – 70, 78 – 79 and 89 – 90:

The claims 69 – 70, 78 – 79 and 89 – 90 are rejected under 35 USC 103 (a) as being unpatentable over O'Brein etc. al US 6,351,776 in view Yach et al. US 20020128036, further in view of Jhinganet al. 2002/0133597.

Applicant has carefully reviewed the rejections and earnestly requests the Office Action reconsider the rejections over the above claims based on following reasons:

Regarding rejections over the claims 69, 78, 90:

The referenced [0057] of Jhingan recited bellow:

"[0057] Subsequently in step 606, as the user performs a file or folder operation, such as creating a folder, the Web application 106 makes an API call with the encrypted session key to the USC server 202A in step 608 to create a folder for the user on the USC server 202A. In this instance, the API call is:"

Unfortunately, Jhingan same as O'Brien and Yach has failed to disclose "creating a file system for the storage space allocated for the wireless device". in the specification and drawings of Jhingan.

In addition, instant application does not required "an application server 106 makes API call to the USC server 202A to create a folder for the user on the USC server 202 A" of Jhingan. Instead, a user from a wireless device of instant application can directly create a folder in the storage space allocated to the wireless device while the server actually performs the creation of the folder in the storage space once receives a request for the creating a folder from the wireless device as disclosed in page 5, lines 8 – 27. This reveals a significant difference in architecture between the Jhingan and instant application.

Therefore, for the above reasons alone, the claims 69, 78, and 90 are patentable over the combined O'Brien, Yach, and Jhingan. A request for withdrawing the 35 USC 103 (a) rejection over the above claims and a request for allowing the above claims are respectively submitted.

Regarding rejections over the claims 70, 79, and 89:

The claim 70, 79, and 89 are amended and Jhingan has failed to teach deleting, copy, rename, and moving folder that disclosed in page 3, lines 23 – 25 of the specification of instant application.

In addition, Since Jhingan's file operations of deleting, copy, rename, and move are supported the same as creating a folder such as disclosed in paragraph [0062] of Jhingan that discussed for claims 69, 78, and 90 above, therefore, the claims 70, 79, and 89 are also patentable over the combined O'Brien, Yach, and Jhingan. A request for withdrawing the 35 USC 103 (a) rejection over the above claims and a request for allowing the above claims are respectively submitted.

C) Regarding rejections over the claims 73, 75, 81, 83, 88 and 91:

The claims 73, 75, 81, 83, 88 and 91 are rejected under 35 USC 103 (a) as being unpatentable over O'Brein etc. al US 6,351,776 in view Yach et al. US 20020128036, further in view of Hochmuth et al. US 7,500,069.

Regarding rejections over the claims 73 and 81 and 88:

The referenced column 8, lines 8 – 17 and column 11, lines 1 – 4 has failed to disclose "creating a file system for the storage space allocated for the wireless device". in the specification and drawings of Hochmuth.

In addition, actually, in the specification and drawings of O'Brien, Yach, Jhingan, and Hochmuth there are no such words of "partitioning a storage device to create the storage space" for the wireless device while it is disclosed in page 4, lines 23 – 40 of specification of instant application.

Therefore, the claims 73, 81 and 88 are also patentable over the combined O'Brien, Yach, Hochmuth, and Jhingan. A request for withdrawing the 35 USC 103 (a) rejection over the above claims and a request for allowing the above claims are respectively submitted.

Regarding rejections over the claims 75 and 83 and 91:

For the same reasons as discussed for the claims 70, 79, and 89 above, the claims 75, 83 and 91 are patentable over the combined O'Brien, Yach, Jhingan and Hochmuth. Therefore, A request for withdrawing the 35 USC 103 (a) rejection over the above claims and a request for allowing the above claims are respectively submitted.

Summary:

The above remark has clearly demonstrated that all O'Brien, Yach, Jhingan and Hochmuth have failed to teach the creating a file system for a storage space allocated to a wireless device and facilitating operations to the storage space of instant application. Thus, according to MPEP §2143.03,

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art *In re Royka*, 490 f. 2d 98 1, 180 USPQ 580 (CCPA 1974).", "All words in a claim must be considered in judging the patentability of the claim against the prior art" In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494,496 (CCPA 1970).

Therefore, the independent claims 31, 33, and 86 are non-obvious and patentable over the combined O'Brien, Yach, Jhingan and Hochmuth. In addition, if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious, In re Fime, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir.1988). Further all claims depending on the independent claims 31, 33 and 86 shall be patentable as matter of the patent law (See Jenric/Pentron, Inc. v. Dillon Co., 205 F. 3d 1377, 1382 (Fed. Cir. 2000).). Thus, the withdrawing all 35 USC 103 rejections from the Office Action of 07/26/2011 is respectively requested.

Applicant believes that the proposed amended claims and the remarks made above have fully overcome the rejections made in Office Action on 06/18/2013 and the instant application are in condition for allowance. Therefore, the issuance of a formal notice of allowance at an earlier date is respectfully requested.

Applicant also very appreciates the Office Action for carefully examining the present application and if a telephone conference would facilitate the prosecution of this application, the applicant Sheng Tai (Ted) Tsao can be reached at (408) 813-0536 and at 510-580-8592. Please also forward the corresponding materials to inventor's address of 3906 Borgo Common, Fremont, CA 94538.

Respectfully submitted,
Date: 07/15/2013.

/Shengtai tsao/
Sheng Tai (Ted) Tsao
3906 Borgo Common
Fremont, CA 94538

Doc Code: M865 or FAI.REQ.INTV

PTOL-413A (08-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Applicant Initiated Interview Request Form

Application No.: 10/726,897 First Named Applicant: Sheng Tai (Ted) Tsao
Examiner: Sall, El Hadji Malick Art Unit: 2457 Status of Application: first Office Action

Tentative Participants:
(1) Sheng Tai (Ted) Tsao **(2)** _____

(3) _____ **(4)** _____

Proposed Date of Interview: TBD **Proposed Time:** TBD **(AM/PM)**

Type of Interview Requested:
(1) [✓] Telephonic (2) [✓] Personal (3) [ ] Video Conference

Exhibit To Be Shown or Demonstrated: [✓] YES [ ] NO
If yes, provide brief description: amended claims (a substitute version and a markup version

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) claim 31,33,86			[ ]	[ ]	[ ]
(2) 103 rejections			[ ]	[ ]	[ ]
(3) Patentability			[ ]	[ ]	[ ]
(4) all dependent clams			[ ]	[ ]	[ ]

[ ] Continuation Sheet Attached [✓] Proposed Amendment or Arguments Attached

Brief Description of Arguments to be Presented: Would like to discuss the patentability of claims 31, 33, and 86 and discuss referenced arts of O'Brien, Yach, Jhingan etc.

An interview was conducted on the above-identified application on _____

NOTE: This form should be completed and filed by applicant in advance of the interview (see MPEP § 713.01). If this form is signed by a registered practitioner not of record, the Office will accept this as an indication that he or she is authorized to conduct an interview on behalf of the principal (37 CFR 1.32(a)(3)) pursuant to 37 CFR 1.34. This is not a power of attorney to any above named practitioner. See the Instruction Sheet for this form, which is incorporated by reference. By signing this form, applicant or practitioner is certifying that he or she has read the Instruction Sheet. After the interview is conducted, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible. This application will not be delayed from issue because of applicant's failure to submit a written record of this interview.

/Shengtai Tsao/
Applicant/Applicant's Representative Signature

Examiner/SPE Signature

Sheng Tai (Ted) Tsao
Typed/Printed Name of Applicant or Representative

77501
Registration Number, if applicable

PTOL-413A (08-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Instruction Sheet for:
APPLICANT INITIATED INTERVIEW REQUEST FORM

(Not to be Submitted to the USPTO)

1. If this form is signed by a registered practitioner not of record, the authority to submit the Applicant Initiated Interview Request Form is pursuant to limited authority to act in a representative capacity under 37 CFR 1.34 and further proof of authority to act in a representative capacity may be required. *See* 37 CFR 1.34.

   The Office will accept the signed form as an indication that the registered practitioner not of record is authorized to conduct an interview on behalf of the principal in pursuant to 37 CFR 1.34.

   For more information, see the "Conducting an Interview with a Registered Practitioner Acting in a Representative Capacity" notice which is available on the USPTO Web site at: http://www.uspto.gov/patents/law/notices/2010.jsp.

2. This is not a power of attorney to any named practitioner. Accordingly, any registered practitioner not of record named on the form does not have authority to sign a request to change the correspondence address, a request for express abandonment, a disclaimer, a power of attorney, or other document requiring the signature of the applicant, assignee of the entire interest or an attorney of record. If appropriate, a separate power of attorney to the named practitioner should be executed and filed in the US Patent and Trademark Office.

3. Any interview concerning an unpublished application under 35 U.S.C. § 122(b) with a registered practitioner not of record, pursuant to 37 CFR 1.34, will be conducted based on the information and files supplied by the practitioner in view of the confidentiality requirements of 35 U.S.C. § 122(a).

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The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/122 (08-12)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

CHANGE OF CORRESPONDENCE ADDRESS
Application

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	10/726,897
Filing Date	12/04/2003
First Named Inventor	Sheng Tai (Ted) Tsao
Art Unit	2457
Examiner Name	Sall, El Hadji Malick
Attorney Docket Number	

Please change the Correspondence Address for the above-identified patent application to:

☐ The address associated with Customer Number: 77501

OR

☒ Firm or Individual Name Sheng Tai (Ted) Tsao

Address 3906 Borgo Common

City	State	Zip
Fremont	California	94538

Country US

Telephone	Email
408-813-0536, 510-580-8592	ted.tsao@sttwebos.com

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I am the:

☒ Applicant

☐ Attorney or agent of record. Registration Number _____.

☐ Registered practitioner named in the application transmittal papers who acts in a representative capacity under 37 CFR 1.34. See 37 CFR 1.33(a)(1). Registration Number _____.

Signature /shengtai tsao/

Typed or Printed Name Sheng Tai (Ted) Tsao

Date	Telephone
07/15/2013	408-813-0536

NOTE: This form must be signed in accordnace with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications.
Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____forms are submitted.

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	16312597
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	15-JUL-2013
Filing Date:	04-DEC-2003
Time Stamp:	12:27:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	897claims-amend.pdf	391155 2c93d10ae49810635147118d72f63cad3081c64c	no	6
Warnings:					
Information:					
2	Applicant Arguments/Remarks Made in an Amendment	Remark-on-OA.pdf	305169 a2572efcd57ab60626c24723e8b626174a7ed9f6	no	6
Warnings:					
Information:					
3	Letter Requesting Interview with Examiner	897interview-Req.pdf	421655 b386c1010801283e76acc40cd7733397e32fef07	no	3
Warnings:					
Information:					
4	Change of Address	changeAddress-0122-1.pdf	251512 327c02bc6b7c69c932aa65c24af4ed4629dce6d7	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1369491		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 10/726,897	Filing Date 12/04/2003	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)		
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	07/15/2013	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 22	Minus	** 22	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/HENRIETT K. DENDY/

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/04/2003	Sheng (Ted) Tsao		4178

7590 06/18/2013

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
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EXAMINER	
SALL, EL HADJI MALICK	
ART UNIT	PAPER NUMBER
2457	

MAIL DATE	DELIVERY MODE
06/18/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/726,897	Applicant(s) TSAO, SHENG (TED)	
	Examiner EL HADJI SALL	Art Unit 2457	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1 April 2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *31,33,69-73,75-81,83,84 and 86-91* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *31, 33, 69-73, 75-81, 83-84 and 86-91* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Interim copies:

a)☐ All b)☐ Some c)☐ None of the: Interim copies of the priority documents have been received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the application filed on April 1, 2013. Claims 1-30, 32, 34-68, 74 and 82 are cancelled. Claims 31, 33, 69-73, 75-81, 83-84 and 86-91 are pending. Claims 31, 33, 69-73, 75-81, 83-84 and 86-91 represent USE OF WIRELESS DEVICES' EXTERNAL STORAGE.

Response to Arguments

2. Applicant's arguments, see Remarks filed on 09/23/2011, with respect to the rejection(s) of claims 31, 33, 69-73, 75-81, 83-84 and 86-91 under U.S.C. 102(b) as being anticipated by O'Brien et al. U.S. 6,351,776, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Yach et al. U.S. 20020128036.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 31, 33, 71, 72, 76, 77, 80 and 84-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien et al. U.S. 6,351,776 in view of Yach et al. U.S. 20020128036.

O'Brien teaches the invention substantially as claimed including shared internet storage resource, user interface systems, and method (see abstract).

As to claims 1, 33 and 86, O'Brien teaches a method for expanding storage capacity of a device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the device [column 3, lines 8-17: disclosing Internet hard drive space that is allocated to an individual user] column 3 ~lines 26- 28)): disclosing that individual storage areas are allocated in "limited allotments" (i.e., predefined capacity)];

creating a file system for the storage space allocated for the wireless device [Fig. 2, item 204: disclosing the use of a file system];

providing a link for the wireless device to access the storage space [column 2, lines 17- 25: disclosing the web page have URL information (i.e., file path and IP address of the remote web site)].

O'Brien teaches substantial features of the claimed invention including "creating a file system for the storage space [Fig. 2, item 204: disclosing the use of a file system]" and "updating the file system [column 9, lines 3-5: disclosing operations are allowed to be performed on the file system]; column 9, lines 59-62] column 12, lines 30-53]", but fails to explicitly teach "wireless device", "wireless link", "creating a file system for the storage space allocated for the wireless device" and "updating the file system whenever a user of the wireless device performs operations to the storage space".

However, Yach teaches advanced voice and data operation in a mobile data communication device. Yach teaches "wireless device" (portable device), "wireless link" (wireless network) (paragraph 0014).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine O'Brien in view of Yach to provide "wireless device", "wireless link", "creating a file system for the storage space allocated for the wireless device" and "updating the file system whenever a user of the wireless device performs operations to the storage space" for the purpose of using wireless VPN router in order to integrate it with a wireless gateway.

Claims 71 and 80

0 'Brien as modified by Yach and Jhingan discloses the link is wireless [Yach, abstract: mobile phone].

Claim 72

0 'Brien as modified by Yach discloses said creating a file system for the storage space comprises partitioning a storage device to create the storage space according to the predefined capacity [column 3, lines 26-28].

Claims 76, 84 and 87

0 'Brien as modified by Yach discloses facilitating to store a file being downloaded from a website directly into the storage space instead of downloading the file into the wireless device itself [column 4, lines 7-10:

disclosing the internet-to-internet file transfer bypasses the user's device because the files are saved to the user's Xdrive].

Claim 77

0 'Brien as modified by Yach discloses wherein said facilitating to store a file being downloaded from a website directly into the storage space comprises:

obtaining downloading information for the file [Fig. 11, item 1114>; column 18, lines 33-39: disclosing the user has the URL which requires that the system (i.e., the user's computer) had obtained the URL in a prior step];

transmitting the downloading information cached in the wireless device to the server [Fig. 11, item 1114>; column 18, lines 33-34: disclosing that the user submits the URL information to the Xdrive system]; and

causing the server in accordance with the downloading information to download the file directly into the storage space [column 4, lines 7-10: disclosing the internet-to-internet file transfer bypasses the user's device because the files are saved to the user's Xdrive].

4. Claims 69-70, 78-79 and 89-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien et al. U.S. 6,351,776 in view Yach et al. U.S. 20020128036, further in view of Jhingan et al. U.S. 20020133597.

O'Brien teaches the invention substantially as claimed including shared internet storage resource, user interface systems, and method (see abstract).

Claims 69, 78 and 90

0 'Brien as modified by Yach and Jhingan discloses the operations to the storage space comprise creating from the wireless device a folder in the storage space [Jhingan, 0057: disclosing enabling a user to create a folder on the server (i.e., storage space)].

It would have been obvious to one of ordinary skill in the art to have modified O 'Brien's online storage system to include the folder creation functionality described above in Jhingan. Such a modification to O 'Brien's system is an example of using a known technique (Jhingan's system allows users to create folders in the storage space) to improve similar systems (O 'Brien's online Xdrive storage space) in the same way.

Claims 70, 79 and 89

0 'Brien as modified by Yach and Jhingan discloses the operations the storage space include deleting, moving, copying, or renaming a file being stored in the storage space [O 'Brien, column 8, lines 39-42].

5. Claims 73, 75, 81, 83, 88 and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Brien et al. U.S. 6,351,776 in view of Yach et al. U.S. 20020128036, further in view of Hochmuth et al. U.S. 7,500,069.

O'Brien teaches the invention substantially as claimed including shared internet storage resource, user interface systems, and method (see abstract).

Claims 73 and 81

0 'Brien as modified by Yach, Jhingan and Hochmuth discloses providing a console for an administrator of a service provider to allocate the storage space for a subscriber of the wireless device, wherein the service provider provides services for the wireless device [Hochmuth, column 8, lines 8-17: disclosing providing a GUI to an administrator for allocating storage to clients; column 11, lines 1-4: providing a desired capacity for the storage].

It would have been obvious to one of ordinary skill in the art to have modified O 'Brien's Xdrive system to include an administrative GUI as taught in Hochmuth. Such a modification to 0 'Brien's system is an example of using a known technique (Hochmuth's administrative GUI to allocate space to clients) to improve similar systems (O 'Brien's online Xdrive storage space) in the same way.

Claims 75 and 83

0 'Brien as modified by Yach, Jhingan and Hochmuth discloses the wireless device executes a web browser through which the subscriber accesses the storage space for retrieving a file therefrom or storing a file therein [0 'Brien, column 3, lines 45-56].

Claim 88

0 'Brien as modified by Yach, and Hochmuth discloses the server is further configured to provide a console for an administrator of a service provider to allocate the storage space for a subscriber of the wireless device, wherein the service provider provides services for the wireless device [Hochmuth, column 8, lines 8-17: disclosing providing a GUI to an administrator for allocating storage to clients; column 11, lines 1-4: providing a desired capacity for the storage; Yach (abstract)].

It would have been obvious to one of ordinary skill in the art to have modified O 'Brien's Xdrive system and Yach's wireless system to include an administrative GUI as taught in Hochmuth. Such a modification to 0 'Brien's system is an example of using a known technique (Hochmuth's administrative GUI to allocate space to clients) to improve similar systems (O 'Brien's online Xdrive storage space) in the same way.

Claim 91

0 'Brien as modified by Yach, Jhingan and Hochmuth discloses the wireless device executes a web browser through which the subscriber accesses the storage space for retrieving a file therefrom or storing a file therein [0 'Brien, column 3, lines 45-56; Yach (abstract)].

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to El Hadji M Sall whose telephone number is 571-272-4010. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/El Hadji M Sall/

Examiner, Art Unit 2457

Notice of References Cited	Application/Control No. 10/726,897	Applicant(s)/Patent Under Reexamination TSAO, SHENG (TED)	
	Examiner EL HADJI SALL	Art Unit 2457	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2002/0128036 A1	09-2002	Yach et al.	455/552
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	Art Unit
	EL HADJI SALL	2457

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/16/2013								
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	Art Unit
	EL HADJI SALL	2457

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	**Art Unit**
	EL HADJI SALL	2457

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/16/2013								
	73	✓								
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	90	✓								
	91	✓								

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	3	("6,351,776" "20020133597" "7500069").pn.	US-PGPUB; USPAT	OR	ON	2013/06/16 13:45
S2	35520	709/203,219,226.ccls.	US-PGPUB; USPAT	OR	ON	2013/06/16 13:47
S3	3148	(internet web) near3 (drive storage memory database) and (creat$5 near (folder record)) and (wireless portable)	US-PGPUB; USPAT	OR	ON	2013/06/16 13:49
S4	1	"20100005153"	US-PGPUB; USPAT	OR	ON	2013/06/16 13:50
S5	1027	S3 and @ad<"20031204"	US-PGPUB; USPAT	OR	ON	2013/06/16 14:01
S6	2216	allocat$5 near storage near3 space	US-PGPUB; USPAT	OR	ON	2013/06/16 14:02
S7	4761	creat$5 near3 file adj system	US-PGPUB; USPAT	OR	ON	2013/06/16 14:02
S8	233	S6 and S7	US-PGPUB; USPAT	OR	ON	2013/06/16 14:02
S9	0	S1 and S8	US-PGPUB; USPAT	OR	ON	2013/06/16 14:03
S10	3148	(internet web) near3 (drive storage memory database) and (creat$5 near (folder record)) and (wireless portable)	US-PGPUB; USPAT	OR	ON	2013/06/16 20:14
S11	1027	S10 and @ad<"20031204"	US-PGPUB; USPAT	OR	ON	2013/06/16 20:14
S12	582	S11 and (wireless portable) near3 (device terminal)	US-PGPUB; USPAT	OR	ON	2013/06/16 20:14
S13	308	S12 and cell$5 near3 (phone call)	US-PGPUB; USPAT	OR	ON	2013/06/16 20:15
S14	4	S12 and cell$5 near3 phone near call	US-PGPUB; USPAT	OR	ON	2013/06/16 20:15
S15	4	S14 and wireless near12 (link communicat$5 connect$5)	US-PGPUB; USPAT	OR	ON	2013/06/16 20:20

6/16/2013 10:17:26 PM

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	Art Unit
	DOHM CHANKONG	2452

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	203, 219, 226.	6/16/2013	ES

SEARCH NOTES		
Search Notes	Date	Examiner
Updated Non Patent Litterature Search	6/16/2013	ES
Updated East Search	6/16/2013	ES

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.	
SERIAL NO.:	10/726,897	Confirmation No. 4178
FILING DATE:	12/04/2003	
TITLE:	The Use of Wireless Devices' External Storage	
EXAMINER:	Chankong, Dohm	
ART UNIT:	2452	

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AND REPLY UNDER 37 C.F.R. § 1.114

Dear Madam,

Applicant would like to

1) Withdraw the amended specification submitted on 9/23/2011 when filing for RCE.

2) A newly amended specification based on original specification filed on 12/04/2003 is enclosed stating on page 3. A clean copy of the amended claims is also attached.

2) A remark is also enclosed starting on page 2.

Very appreciate helps from USPTO for entering the amended first paragraph of the specification starting on page 2.

Respectively Submitted

02/25/2013

Sheng Tai (Ted) Tsao
2979 Heidi Drive,
San Jose, CA 95132
408-813-0536

Remark

The original specification filed on 12/04/2003 for instant application contains an error in reference to the related applications. Because by the rules of USPTO, a new filed application can not claim as a continuation of a provisional application. Also, a claim for priority based on a provisional application is only valid within 12 month after the provisional application had filed.

Since instant application does not meet the two requirements from USPTO, therefore, the instant application can not claim priority of provisional applications of 60/401,238 and 60/402,626.

In addition, although Applicant has explained the instant application actually claims as continuation of applications of 10/713,904 and 10/713,905 at the time of filing the original specification. This is also not valid since an application can not be a continuation of two parent applications.

To effectively clarify all confusing regarding the continuality of instant application, Application amended the original specification filed on 12/04/2003 to remove invalid references to the related applications for the continuality. Such clarification is reflected in the amended specification starting on page 3 of this submission.

The amendments also correct informalities appeared in the specification without introducing any new matter. Applicant very appreciates helps from USPTO for entering the amended specification.

Amendment To The Specification:

Please amend the specification as follow:

The Use of Wireless Devices' External Storage

~~**By: Sheng (Ted) Tai Tsao**~~
~~**11/19/2003**~~

~~Field of the Invention~~

Cross Reference to Prior Application

[001] This invention relates to ~~is the continuation of~~ the previous invention, application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System" ~~where the claim 20 item a), b), d), claim 30 item b), and together with claim 36 represent an invention of using storage of a server system as the external storage for wireless devices~~. This invention also relates to ~~focuses on how can a wireless device user actually use external storage. Specially it focus on how can a wireless device to download data to its external storage, which its principle has preliminary described in claim 19) of~~ the previous invention, application number 60/402,626 of "IP Based Distributed Virtual SAN"~~, to transmit data in wireless environment~~.

Field of the Invention

[002] This invention focuses on how a wireless device can actually use external storage provided by a storage server. This invention also includes how a wireless device can download data to its external storage.

Background Information

~~**a)**~~

[003] **Terminology:**

The terminologies described in next few sections reflect the scope and are part of present invention.

[004] **The Internal Storage of a System:**

The storage media such as hard disk drives, memory sticks, memory etc.. is connected to a system directly through bus or a few inches of cable. Therefore, the storage media actually is a component of [[a]] the system in an ~~same~~ enclosure.

[005] **The External Storage of a System:**

The external storage media is not a component of [[a]] the system in [[a]] the same enclosure. Therefore, they ~~has~~ have to be connected through a connecting medium (e.g. a ~~longer~~ cable) such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or such as wireless ~~media~~ medium and etc.. The storage media of an external storage could be magnetic hard disk drives, solid ~~sate~~ state disk, optical storage drives, memory card, etc. and could be in any form such as Raid[[,]] which usually consists of a group of hard disk drives.

[006] **The Storage Partition, its Volumes, and the Corresponding File System:**

To effectively use ~~the~~ storage system, ~~the~~ each storage device usually needs to be partitioned into small volumes. After the partition, each of the volumes can be used to establish a file system[[s]] on it. To simplify the discussion herein, the term of the storage volume, its corresponding file system, and the term of the partition of [[a]] the storage device are often used without differentiation ~~in this invention~~.

[007] **CCDSVM:**

It is an abbreviation for a central controlled distributed scalable virtual machine system. The CCDSVM allows a control management station to control a group of systems and provide distributed services to a client system on the [[in]] Internet, the Intranet, and an LAN environment.

[008] **ISP & ASP:**

The ISP refers to Internet service provider and the ASP refers to application service provider.

~~b)~~ [009] **Figures:**

[010] Fig. 1~~: This~~ illustrates an embodiment of the instant application, the Fig. 1 is the same ~~figure~~ as Fig. 1 of the previous application of the "Concurrent Web Based Multi-task Support for Control Management System" with an exception of ~~renaming~~ replacing a console host ~~as~~ with a wireless device.

[011] Fig. 2~~: This~~ is the same ~~figure~~ as Fig. 1 of the above except that it shows ~~the~~ a more detailed ~~details of~~ storage system controlled by ~~the~~ a server. In addition, multiple wireless devices are presented to access the storage system.

[012] Fig. 3~~: This figure~~ shows ~~the~~ a scheme of a wireless device downloading contents from an ISP/ASP or other web sites to ~~the~~ an external storage ~~of this~~ allocated for the wireless device.

[013] Fig. 4~~: This~~ is ~~the same figure as~~ similar to the Fig. 1 of the previous application of the "IP Based Distributed Virtual SAN" with exception that each IP storage server ~~provide~~ provides a file system as external storage for each of the wireless devices instead of ~~provide~~ providing IP based virtual SAN service. Also, each host in said Fig. 1 actually is replaced by a wireless device of Fig. 4.

~~**e) Assumptions:**~~

[014] Unless specified, the programming languages[[,]] and the protocols used by each software modules of instant application, and the computing systems used ~~described~~ in this invention are assumed to be the same as described in the previous patent[[s]] ~~submission~~ applications.

[015] In addition, in the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

[016] **Brief Description of the Invention**

[017] Today the wireless users commonly face ~~the~~ a problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which are usually limited to 256MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple gigabytes (GB) of storage for their wireless devices as well as allowing the users to use the GB storage for their multimedia applications, the storage ~~on~~ of a server can be used as the external storage for the wireless devices. This technology has been ~~claimed~~ briefly introduced in the previous ~~two~~ parent patent[[s]] applications ~~submission by the same author~~.

[018] Now ~~we can~~ let us examine how ~~does~~ the external storage can actually be used by the wireless devices. First, ~~We can~~ let each server unit (e.g. the server 3 of the Fig. 2) partitions its storage system into ~~such way that each~~ volume[[s]] and each of the volumes will have multiple[[-]]GB in size. Therefore, each user ~~from a web-browser of any~~ of the wireless devices can be exclusively ~~be~~ assigned and ~~exclusively~~ access a specific storage volume ~~on a server unit~~. For example, if we need to provide each user a 4GB ~~of~~ storage space, then a 160GB disk drive can support 40 users[[']]. Therefore, [[A]] a 4096GB storage system on [[a]] the server unit can support a total of 1024 wireless devices for users. Further, any data on the wireless device can be transmitted to an assigned storage volume~~s on a server unit~~. In addition, the user ~~on~~ of the wireless device also can download the multimedia data from ~~any~~ an ISP or ASP to the assigned storage volume[[s]] of a designated server unit through out-band approach ~~(~~shown in Fig. 3~~)~~. Finally, the user can use ~~their~~ a web-browser, which has a functionality of invoking embedded video or music, to enjoy ~~their~~ his/her stored multimedia contents.

[019] These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures ~~where:~~.

[020] **Description of the Drawings**

[021] Referring now to Fig. 1[[:]], ~~This figure~~ it demonstrates a configuration comprising a ~~the~~ network ~~connection between~~ connecting a wireless device and a server~~, where~~

~~a)~~ In the Fig. 1, Net (2) represents a communication link, which may be combined with wireless and ~~non-wireless~~ wired connection media and guarantee that the communication packets can be sent/received between the wireless device and the server. It is also assumed that the net (2) representing an communication infrastructure is built up in such way that ~~the~~ a user ~~from web-browser~~ of a wireless device can access and browse any web-site on the Internet, the Intranet, or a local area network (LAN).

[022] ~~b) As described in previous patents submission~~ In Fig. 1, the console support software (5) on the server (3) can be configured to support web-based multi-tasks for the user[[s]] ~~on web-browser (8)~~ of the wireless device (1) via a web browser 8. Further, the user ~~on the web-browser (8)~~ of the wireless device is able to perform creating structured layered files/~~directory~~ directories or folders, and perform data management operations, such as delete, move, copy, rename for data files or folders/directories and etc.. on ~~the~~ an assigned storage volume [[of]] associated with the server (3).
~~c) As described in previous patents submission~~ In addition, the other software modules (9) of the wireless device (1) is ~~also capable~~ configured to send data to or receive data from the other service modules (7) ~~of~~ running on the server (3) via communication link (2) through a suitable IP or non-IP based protocol. The data ~~file~~ being sent cold be a digital photo picture, a message and etc..

[023] ~~d)As described in previous patents submission~~ Also, the console supporting software (5) of the server (3) and the other software modules (9) of the wireless device (1) can be implemented with any suitable languages such as C, C++, Java, etc. depending on the implementation.

[024] ~~e)As described in previous patents submission~~ Besides, the web-browser (8) of the wireless device (1) can be implemented any suitable software~~, which~~. The web browser is configured ~~is capable~~ to communication with web server software (4) on the server (3) ~~or~~ with any other web server through the HTTP protocol.

[026] On the other hand, Fig. 2~~: This figure~~ has demonstrated ~~how does~~ that the storage system 10 of a server 3 can be allocated ~~assigned~~ to multiple wireless devices ~~as their external storage~~.

~~a)~~ ~~As described in the previous patents~~ submission~~,~~ First, the storage system (10) of the server (3) can be partitioned into multiple storage volumes (11) by administration staff through a web-console (13) of a ~~web~~ console host (12).

[027] ~~b).~~Second, the storage system (10) of the server (3) can be partitioned in such way that each of the wireless devices can be ~~assigned~~ allocated with a storage volume ~~of~~ having a desired size, ~~which can be best supported by~~ therefore, the server 3 can support ~~for~~ maximum numbers of the wireless devices.

[028] ~~c) As described in previous patents~~ submission In addition, the storage connection media could be any kind[[s]] of cables, such as SCSI cable, IP cable, Fiber cable etc. or could be wireless communication media. The storage system itself could be various types.

[029] ~~d) It~~ Finally, ~~it assumes that~~ the storage system 10 can be accessed by each of the wireless devices through IP or non-IP based network and protocols.

[030] Fig. 3~~: This figure~~ has demonstrated ~~how~~ that a user from a web-browser (8) on a wireless device[[s]] (1) can download data from a known web-site (12) to his/her ~~assigned~~ allocated external storage (10) ~~of~~ on the server (3). The dash-lined path (a) represents a communication channel between the wireless device (1) and ~~any~~ a remote downloading web-site (12)~~, which~~ that provides ~~the~~ downloading contents ~~for web download~~. The dash-lined path (b) represents a communication channel between the wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between the server 3 ~~wireless devices (1)~~ and the remote web-server (12)~~, which provides download contents~~.

[031] **The Detailed Description of the Invention**

[032] ~~1.~~ **The Use of the External Storage ~~of~~ by the Wireless Device:**

The Fig. 2 shows a simplified diagram of the wireless devices (1 of Fig. 2) using the external storage system (10 of Fig. 2) of [[a]] the server (3 of Fig. 2)~~, which will~~ for effectively ~~resolve~~ resolving the storage limitation problem ~~of~~ for the wireless devices (1 of Fig. 2).

[033] **Partition storage volumes (Fig. 2)**

With this invention, the entire storage (10 of Fig. 2) on [[a]] the server (3 of Fig. 2) needs to be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB for each[[,]] ~~which~~ volume. This will allow the server 3 to serve maximum number of the wireless devices (1 of Fig. 2). With the web console support software (5 of Fig. 2) of the server (3 of Fig. 2), ~~the~~ tasks of partitioning the storage system 10 can be done through a web-console (13 of Fig. 2) on a console host (12 of Fig. 2) by an administrative staff.

[034] In order to support ~~such~~ storage partitioning, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of the console host (12 of Fig. 2). ~~This~~ The storage information ~~including the~~ includes each storage device's name~~, storage~~ and total size etc.. Second, based on the received storage information the administration staff on the console host (12 of Fig. 2) can use a web-console (13 of Fig. 2) to fill out and [[to]] send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from the web-console (13 of Fig. 2) of the console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition~~, which~~ to divide[[s]] the entire storage into multiple small volumes. Finally, for each small storage volume, a corresponding file system could be built up.

[035] **Assign storage volumes (Fig. 2):**

Each of the storage volumes together with its corresponding file system (11 of Fig. 2) [[of]] on the storage system (10 of Fig. 2) [[on]] of the server (3 of Fig. 2) needs to be

exclusively ~~assigned~~ allocated and exported to a ~~given~~ specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) [[on]] of the server (3 of Fig. 2).

[036] **Data and storage volume management (Fig. 2)**

~~1)~~ With the support of the console support software modules (5 of Fig 2) of the server ~~system (~~3 of Fig. 2), the user ~~on web-browser (8 of Fig. 2) of~~ the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 setup ~~the~~ folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user ~~on web-browser (8 of Fig. 2) of~~ the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 perform all data management operations such as delete, copy, move, rename etc. ~~on that~~ for file system.

[037] In order to support such data management on the external storage (10 of Fig. 2) ~~from web-browser (8 of Fig. 2) of~~ allocated to the wireless device (1 of Fig. 2) via the web-browser 8 of Fig. 2, first the console support software modules (5 of Fig. 2) of the server ~~system (~~3 of Fig. 2~~)~~ must communicate with the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2). Therefore, the user from the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to the console support software modules (5 of Fig. 2) of the server ~~system (~~3 of Fig. 2~~)~~. The[[se]] mentioned operations include establishing folder/directory, copying, moving, or reaming data file etc. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server ~~system (~~3 of Fig. 2~~)~~ actually ~~performs~~ processes/executes these requested operations ~~on~~ for the assigned file system of an allocated ~~assigned external~~ storage volume (11 of Fig. 2) on the server ~~system (~~3 of Fig. 2~~)~~.

[038] **Store data from wireless device into external storage (Fig. 2)**

To store the data such as digital photo pictures[[,]] or messages into the ~~assigned~~ file system on the allocated ~~external~~ storage (10 of Fig. 2) of [[a]] the server (3 of Fig. 2), the other software modules (9 of Fig. 2) of the wireless device (1 of Fig. 2) need to send these data to the other service modules (7 of Fig. 2) of the server (3 of Fig. 2) via communication link between them. Upon receiving the data, the other service modules (7 of Fig. 2) of the server (3 of Fig. 2) write these data to the ~~assigned~~ file system of the ~~assigned~~ allocated

storage volume (11 of Fig. 2) ~~on server (3 of Fig. 2)~~ for the wireless device. The protocol used between these two communication entities could be either IP or non-IP based protocol.

[039] **Download data from a remote web server site into ~~external~~ allocated storage volume (Fig. 3)**

[040] If a user of the wireless device (1 of Fig. 3) ~~user~~ wants to download a data from a remote web server (12 of Fig. 3) into the allocated ~~assigned~~ file system (11 of Fig. 3) of the ~~external~~ allocated storage (10 of Fig. 3) on the server (3 of Fig. 3), the following steps are required:

[041] 1) The user ~~from web-browser (8 of Fig. 3)~~ of the ~~a specific~~ wireless device (1 of Fig. 3) via a web-browser (8 of Fig. 3) accesses a remote downloading web server site (12 of Fig. 3) ~~and~~ to obtain ~~the~~ information for the downloading via path (a) of Fig. 3. For example, [[to]] the user ~~get~~ accesses a web-page[[,]] which contains the data name for the downloading.

[042] 2) The other software modules (9 of Fig. 3) of ~~a specific~~ the wireless device (1 of Fig. 3) obtain[[s]] the downloading information, which becomes available in the cached web-pages on the wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the ~~download~~ web site (12 of Fig. 3).

[043] 3) The other software modules (9 of Fig. 3) of ~~a specific~~ the wireless device (1 of Fig. 3) send the obtained downloading information to other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) via path (b) of Fig. 3.

[044] 4) Upon receiving the downloading information from ~~a specific~~ the wireless device (1), the other service module (7 of Fig. 3) of the storage server (3 of Fig. 3) sends a web download request to ~~download~~ the web-site (12 of Fig. 3) via path (c) of Fig. 3 ~~based on download information obtained. It then~~ and receives the downloading ~~information~~ data streams from the web server of ~~download~~ the web-site (12 of Fig. 3).

[045] 5) Upon receiving ~~downloaded~~ downloading data streams, the other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write the[[se]] data streams ~~for the specific wireless device (1 of Fig. 3)~~ into the ~~assigned~~ allocated file system (11 of Fig. 3) on the server (3 of Fig. 3) for the wireless device (1 of Fig. 3).

[046] **Retrieve data from ~~external~~ allocated storage ~~of~~ for the wireless device**

[047] 1) If a web-browser (8 of Fig. 2) on a wireless device 1 of Fig. 2 has embedded video or music functionality, ~~the web-browser (8 of Fig. 2)~~ a user of [[a]] the wireless device (1 of Fig. 2) can ~~be~~ use[[d]] the browser to retrieve and play ~~those~~ multimedia data file such as video or music stored in the allocated ~~wireless device's external~~ storage volume (10 of Fig.2)~~,~~ ~~which actually~~ located on [[a]] the server (3 of Fig. 2).

[048] 2) If there is a need[[s]], the other software module (9 of Fig. 2) of the wireless device (1 of Fig. 2) also can retrieve data file from the allocated ~~assigned~~ file system of the ~~assigned~~ allocated storage volume (11 of Fig. 2) on the server (3 of Fig. 2).

[049] **Support external storage for a large number of the wireless devices**

[050] If [[~~we~~]] there is a need to provide each user a 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on [[a]] the server unit can support 2024 user. Each of the server units only can efficiently support a limited size of the storage system. In order to support a large number of the wireless devices, ~~with external storage~~ such as for 500,000 ~~of them~~ wireless devices, a larger number of the servers ~~are~~ is required, in this case 250 servers is required. In order to let a larger number of the servers to effectively support the larger number of the wireless devices, an infrastructure like CCDSVM is desirable, which has been described in previous patent[[s]] applications ~~submission~~. With the CCDSVM the control management station can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

The Use of Wireless Devices' External Storage

Cross Reference to Prior Application

[001] This invention relates to the previous invention, application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System". This invention also relates to previous invention, application number 60/402,626 of "IP Based Distributed Virtual SAN".

Field of the Invention

[002] This invention focuses on how a wireless device can actually use external storage provided by a storage server. This invention also includes how a wireless device can download data to its external storage.

Background Information

[003] **Terminology:**

The terminologies described in next few sections reflect the scope and are part of present invention.

[004] **The Internal Storage of a System:**

The storage media such as hard disk drives, memory sticks, memory etc.. is connected to a system directly through bus or a few inches of cable. Therefore, the storage media actually is a component of the system in an enclosure.

[005] **The External Storage of a System:**

The external storage media is not a component of the system in the same enclosure. Therefore, they have to be connected through a connecting medium (e.g. a cable) such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or such as wireless medium and etc.. The storage media of an external storage could be magnetic hard disk drives, solid state disk, optical storage drives, memory card, etc. and could be in any form such as Raid which usually consists of a group of hard disk drives.

[006] **The Storage Partition, its Volumes, and the Corresponding File System:**

To effectively use storage system, each storage device usually needs to be partitioned into small volumes. After the partition, each of the volumes can be used to establish a file system on it. To simplify the discussion herein, the term of the storage volume, its corresponding file system, and the term of the partition of the storage device are often used without differentiation.

[007] **CCDSVM:**

It is an abbreviation for a central controlled distributed scalable virtual machine system. The CCDSVM allows a control management station to control a group of systems and provide distributed services to a client system on the Internet, the Intranet, and an LAN environment.

[008] **ISP & ASP:**

The ISP refers to Internet service provider and the ASP refers to application service provider.

[009] **Figures:**

[010] Fig. 1 illustrates an embodiment of the instant application, the Fig. 1 is the same as Fig. 1 of the previous application of the "Concurrent Web Based Multi-task Support for Control Management System" with an exception of replacing a console host with a wireless device.

[011] Fig. 2 is the same as Fig. 1 of the above except that it shows a more detailed storage system controlled by a server. In addition, multiple wireless devices are presented to access the storage system.

[012] Fig. 3 shows a scheme of a wireless device downloading contents from an ISP/ASP or other web sites to an external storage allocated for the wireless device.

[013] Fig. 4 is similar to the Fig. 1 of the previous application of the "IP Based Distributed Virtual SAN" with exception that each IP storage server provides a file system as external storage for each of the wireless devices instead of providing IP based virtual SAN service. Also, each host of mentioned Fig. 1 actually is replaced by a wireless device of present application.

[014] Unless specified, the programming languages and the protocols used by each software modules of instant application, and the computing systems used in this invention are assumed to be the same as described in the previous patent applications.

[015] In addition, in the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

[016] **Brief Description of the Invention**

[017] Today the wireless users commonly face a problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which are usually limited to 256MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple gigabytes (GB) of storage for their wireless devices as well as allowing the users to use the GB storage for their multimedia applications, the storage of a server can be used as the external storage for the wireless devices. This technology has been briefly introduced in the previous parent patent applications.

[018] Now let us examine how the external storage can actually be used by the wireless devices. First, let each server unit (e.g. the server 3 of the Fig. 2) partitions its storage system into volume[[s]] and each of the volumes will have multiple GB in size. Therefore, each user of the wireless devices can be exclusively assigned and access a specific storage volume. For example, if we need to provide each user a 4GB storage space, then a 160GB disk drive can support 40 users. Therefore, a 4096GB storage system on the server unit can support a total of 1024 wireless devices for users. Further, any data on the wireless device can be transmitted to an assigned storage volume. In addition, the user of the wireless device also

can download the multimedia data from an ISP or ASP to the assigned storage volume of a designated server unit through out-band approach shown in Fig. 3. Finally, the user can use a web-browser, which has a functionality of invoking embedded video or music, to enjoy his/her stored multimedia contents.

[019] These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures:

[020] **Description of the Drawings**

[021] Referring now to Fig. 1, it demonstrates a configuration comprising a network connecting a wireless device and a server. In the Fig. 1, Net (2) represents a communication link, which may be combined with wireless and wired connection media and guarantee that the communication packets can be sent/received between the wireless device and the server. It is also assumed that the net (2) representing an communication infrastructure is built up in such way that a user of a wireless device can access and browse any web-site on the Internet, the Intranet, or a local area network (LAN).

[022] In Fig. 1, the console support software (5) on the server (3) can be configured to support web-based multi-tasks for the user of the wireless device (1) via a web browser 8. Further, the user of the wireless device is able to perform creating structured layered files, directories, or folders, and perform data management operations, such as delete, move, copy, rename for data files or folders, directories and etc.. on an assigned storage volume associated with the server (3).

[023] In addition, the other software modules (9) of the wireless device (1) is configured to send data to or receive data from the other service modules (7) running on the server (3) via communication link (2) through a suitable IP or non-IP based protocol. The data being sent cold be a digital photo picture, a message and etc..

[024] Also, the console supporting software (5) of the server (3) and the other software modules (9) of the wireless device (1) can be implemented with any suitable languages such as C, C++, Java, etc. depending on the implementation.

[025] Besides, the web-browser (8) of the wireless device (1) can be implemented any suitable software. The web browser is configured to communication with web server software (4) on the server (3) with any other web server through the HTTP protocol.

[026] On the other hand, Fig. 2 has demonstrated that the storage system 10 of a server 3 can be allocated to multiple wireless devices. First, the storage system (10) of the server (3) can be partitioned into multiple storage volumes (11) by administration staff through a web-console (13) of a console host (12).

[027] Second, the storage system (10) of the server (3) can be partitioned in such way that each of the wireless devices can be allocated with a storage volume having a desired size, therefore, the server 3 can support maximum numbers of the wireless devices.

[028] In addition, the storage connection media could be any kind of cables, such as SCSI cable, IP cable, Fiber cable etc. or could be wireless communication media. The storage system itself could be various types.

[029] Finally, the storage system 10 can be accessed by each of the wireless devices through IP or non-IP based network and protocols.

[030] Fig. 3 has demonstrated that a user from a web-browser (8) on a wireless device (1) can download data from a known web-site (12) to his/her allocated external storage (10) on the server (3). The dash-lined path (a) represents a communication channel between the wireless device (1) and a remote downloading web-site (12) that provides downloading contents. The dash-lined path (b) represents a communication channel between the wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between the server 3 and the remote web-server (12).

[031] **The Detailed Description of the Invention**

[032] **The Use of the External Storage by the Wireless Device:**

The Fig. 2 shows a simplified diagram of the wireless devices (1 of Fig. 2) using the external storage system (10 of Fig. 2) of the server (3 of Fig. 2) for effectively resolving the storage limitation problem for the wireless devices (1 of Fig. 2).

[033] **Partition storage volumes (Fig. 2)**

With this invention, the entire storage (10 of Fig. 2) on the server (3 of Fig. 2) needs to be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB for each volume. This will allow the server 3 to serve maximum number of the wireless devices (1 of Fig. 2). With the web console support software (5 of Fig. 2) of the server (3 of Fig. 2), tasks of partitioning the storage system 10 can be done through a web-console (13 of Fig. 2) on a console host (12 of Fig. 2) by an administrative staff.

[034] In order to support storage partitioning, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of the console host (12 of Fig. 2). The storage information includes each storage device's name and total size etc.. Second, based on the received storage information the administration staff on the console host (12 of Fig. 2) can use a web-console (13 of Fig. 2) to fill out and send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from the web-console (13 of Fig. 2) of the console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition to divide the entire storage into multiple small volumes. Finally, for each small storage volume, a corresponding file system could be built up.

[035] **Assign storage volumes (Fig. 2):**

Each of the storage volumes together with its corresponding file system (11 of Fig. 2) on the storage system (10 of Fig. 2) of the server (3 of Fig. 2) needs to be exclusively allocated and exported to a specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) of the server (3 of Fig. 2).

[036] **Data and storage volume management (Fig. 2)**

With the support of the console support software modules (5 of Fig 2) of the server (3 of Fig. 2), the user of the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 setup folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user of the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 perform all data management operations such as delete, copy, move, rename etc. for file system.

[037] In order to support such data management on the external storage (10 of Fig. 2) allocated to the wireless device (1 of Fig. 2) via the web-browser 8 of Fig. 2, first the console support software modules (5 of Fig. 2) of the server 3 of Fig. 2 must communicate with the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2). Therefore, the user from the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to the console support software modules (5 of Fig. 2) of the server 3 of Fig. 2. The mentioned operations include establishing folder/directory, copying, moving, or reaming data file etc. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server 3 of Fig. 2 actually process/executes these requested operations for the assigned file system of an allocated storage volume (11 of Fig. 2) on the server 3 of Fig. 2.

[038] **Store data from wireless device into external storage (Fig. 2)**

To store the data such as digital photo pictures or messages into the file system on the allocated storage (10 of Fig. 2) of the server (3 of Fig. 2), the other software modules (9 of Fig. 2) of the wireless device (1 of Fig. 2) need to send these data to the other service modules (7 of Fig. 2) of the server (3 of Fig. 2) via communication link between them. Upon receiving the data, the other service modules (7 of Fig. 2) of the server (3 of Fig. 2) write these data to the file system of the allocated storage volume (11 of Fig. 2) for the

wireless device. The protocol used between these two communication entities could be either IP or non-IP based protocol.

[039] **Download data from a remote web server site into allocated storage volume (Fig. 3)**

[040] If a user of the wireless device (1 of Fig. 3) wants to download a data from a remote web server (12 of Fig. 3) into the allocated file system (11 of Fig. 3) of the allocated storage (10 of Fig. 3) on the server (3 of Fig. 3), the following steps are required:

[041] 1) The user of the wireless device (1 of Fig. 3) via a web-browser (8 of Fig. 3) accesses a remote downloading web server site (12 of Fig. 3) to obtain information for the downloading via path (a) of Fig. 3. For example, the user accesses a web-page which contains the data name for the downloading.

[042] 2) The other software modules (9 of Fig. 3) of the wireless device (1 of Fig. 3) obtain the downloading information, which becomes available in the cached web-pages on the wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the web site (12 of Fig. 3).

[043] 3) The other software modules (9 of Fig. 3) of the wireless device (1 of Fig. 3) send the obtained downloading information to other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) via path (b) of Fig. 3.

[044] 4) Upon receiving the downloading information from the wireless device (1), the other service module (7 of Fig. 3) of the storage server (3 of Fig. 3) sends a web download request to the web-site (12 of Fig. 3) via path (c) of Fig. 3 and receives the downloading data streams from the web server of the web-site (12 of Fig. 3).

[045] 5) Upon receiving downloading data streams, the other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write the data streams into the allocated file system (11 of Fig. 3) on the server (3 of Fig. 3) for the wireless device (1 of Fig. 3).

[046] **Retrieve data from allocated storage for the wireless device**

[047] 1) If a web-browser (8 of Fig. 2) on a wireless device 1 of Fig. 2 has embedded video or music functionality, a user of the wireless device (1 of Fig. 2) can use the browser to retrieve and play multimedia data file such as video or music stored in the allocated storage volume (10 of Fig.2) located on the server (3 of Fig. 2).

[048] 2) If there is a need, the other software module (9 of Fig. 2) of the wireless device (1 of Fig. 2) also can retrieve data file from the allocated file system of the allocated storage volume (11 of Fig. 2) on the server (3 of Fig. 2).

[049] **Support external storage for a large number of the wireless devices**

[050] If there is a need to provide each user a 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on the server unit can support 2024 user. Each of the server units only can efficiently support a limited size of the storage system. In order to support a large number of the wireless devices, such as for 500,000 wireless devices, a larger number of the servers is required, in this case 250 servers is required. In order to let a larger number of the servers to effectively support the larger number of the wireless devices, an infrastructure like CCDSVM is desirable, which has been described in previous patent applications. With the CCDSVM the control management station can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

Electronic Acknowledgement Receipt

EFS ID:	15397202
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	01-APR-2013
Filing Date:	04-DEC-2003
Time Stamp:	12:08:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Specification	897spec-amend.pdf	217449 2e2608e62b1f281d75934f66a1213564aa759346	no	12
Warnings:					
Information:					
2	Specification	897spec-clean.pdf	182438 aa73a923dfa61cf1f505da15ca36b2a212bf24bc	no	9
Warnings:					
Information:					
		Total Files Size (in bytes):	399887		

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<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
SERIAL NO.:	10/726,897 Confirmation No. 4178
FILING DATE:	12/04/2003
TITLE:	The Use of Wireless Devices' External Storage
EXAMINER:	Chankong, Dohm
ART UNIT:	2452

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

A second supplemental amendment after REC filing for the application 10/726,897

Dear Madam:

Included is an list of amended claims based on the claims submitted on 11/14/2011. The amendment includes adding two new claims 90 and 91, therefore, there are a total of 22 claims in pending. There is no fee due since when the RCE filed the fee paid includes fee for two claims exceeding 20 claims.

There is no new matter being added. Applicant very appreciates helps from USPTO to enter the amended claims and an earlier allowance of the claims is respectively submitted.

Thanks for your help & Respectively Submitted

08/03/2012

//Shanegtai Tsao//
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2979 Heidi Drive,
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408-813-0536

Electronic Acknowledgement Receipt

EFS ID:	13413992
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	03-AUG-2012
Filing Date:	04-DEC-2003
Time Stamp:	14:24:30
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	897claims-amend.pdf	392079 97015888530cb1fe589946471fbd6ce86da56958	no	7
Warnings:					
Information:					
		Total Files Size (in bytes):	392079		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 10/726,897	Filing Date 12/04/2003	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	08/03/2012	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 22	Minus	** 22	= 0	X $30 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $125 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DONNA 1. SMALLS LOGAN/

Amendment in the claims:
This listing of claims will replace all prior versions, and listings of claims in the application:

1 – 30 (*Canceled*)

31. (*Previously Presented*) A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device ;

creating a file system for the storage space allocated for the wireless device ;

providing a link for the wireless device to access the storage space; and

updating the file system whenever a user of the wireless device performs operations to the storage space, wherein the wireless device includes a function of making or receiving a cellular phone call.

32. (*Canceled*)

33. (*Currently Amended*) A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

provide a link for the each of the wireless devices to access the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices; ; and

the wireless devices, wherein each of the wireless devices is configured to access world wide web and access the storage space allocated to the wireless device, and ~~wherein the~~ each of the wireless devices ~~includes~~ has a function of making or receiving a cellular phone call.

34 – 68 (*Canceled*)

69. *(Currently Amended)* The method as recited in claim 31, wherein the operations to the storage space ~~include~~ comprise creating from the wireless device a folder in the storage space.

70. (*Currently Amended*) The method as recited in claim 69, wherein the operations to the storage space ~~include~~ comprise deleting, moving, or renaming a file being stored in the storage space.

71. (*Currently Amended*) The method as recited in claim 31, wherein the link is wireless ~~comprises a combination of wireless and wired communication links~~.

72. (*Previously Presented*) The method as recited in claim 31, wherein said creating a file system for the storage space comprises partitioning a storage device to create the storage space according to the predefined capacity.

73. (*Currently Amended*) The method as recited in claim 71, further comprising: providing a console for ~~allowing~~ an administrator of a service provider to allocate the storage space for a subscriber of the wireless device, wherein the service provider provides services for the wireless device.

74. (*Canceled*).

75. (*Currently Amended*) The method as recited in claim 73 ~~31~~, wherein the wireless device executes a web browser through which the subscriber accesses the storage space for retrieving a file therefrom or storing a file therein.

76. (*Currently Amended*) The method as recited in claim 31~~75~~, further comprising facilitating to store a file being downloaded from a website directly into the storage space instead of downloading the file into the wireless device itself.

77. (*Currently Amended*) The method as recited in claim 76, wherein said facilitating to store a file being downloaded from a website directly into the storage space comprises:

obtaining downloading information for the file;

transmitting the downloading information cached in the wireless device to the server; ~~caching the downloading information in the wireless device;~~ and

causing the server in accordance with the downloading information to download the file directly into the storage space.

78. (*Currently Amended*) The system as recited in claim 33, wherein the operations to the storage space comprise ~~include~~ creating from the each of the wireless devices a folder in the storage space.

79. (*Currently Amended*) The system as recited in claim 78, wherein the operations to the storage space comprise ~~include~~ deleting, moving, or renaming a file being stored in the storage space.

80. (*Currently Amended*) The system as recited in claim 33, wherein the link is wireless ~~comprises a combination of wireless and wired communication links~~.

81. (*Currently Amended*) The system as recited in claim 80, wherein the server is further configured to provide a console for an administrator of a service provider to allocate the storage space for a subscriber of ~~the~~ one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Canceled*)

83. (*Currently Amended*) The system as recited in claim 81 ~~82~~, wherein ~~the~~ each of the wireless devices executes a web browser through which a subscriber thereof accesses a storage space thereof for retrieving a file therefrom or storing a file therein.

84. (*Currently Amended*) The system as recited in claim 33, wherein ~~the~~ each of the wireless devices further is facilitated to allow downloading a file from a website directly into the storage space instead of downloading the file into the wireless device itself.

85. (*Canceled*)

86. *(Currently Amended)* A computer program product for expanding storage capacity of a plurality of wireless devices, stored in a non-transitory computer-readable medium in a server, ~~having a computer readable program code embodied therein, said computer readable program code comprising program instructions adapted to be executed for implementing expanding storage capacity of a plurality of wireless devices,~~ the computer program product comprising:

program instructions when executed by a server for the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

provide a wireless link for the each of the wireless devices to access the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices;; and

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program instructions for each of the wireless devices, wherein each of the wireless devices is configured to access world wide web and access the storage space allocated to the wireless device, and each of the wireless devices comprises a function of making or receiving a cellular phone call

~~for allocating via the server a storage space of a predefined capacity for each of the wireless devices, the storage space being remotely located with respect to the each of the wireless devices;~~

~~program instructions for creating a file system for the storage space allocated for the each of the wireless devices;~~

~~program instructions for providing a link for the each of the wireless devices to access the storage space;~~

~~wherein the link comprises a combination of wireless and wired communication media; and~~

~~program instructions for the server updating the file system whenever a user of the each of the wireless devices performs operations to the storage space;~~

~~wherein the each of the wireless devices executes a web browser through which the user is allowed to create a folder in the storage space and to access the storage space for retrieving a file therefrom or storing a file therein; and~~

~~wherein the each of the wireless device includes a function of making or receiving a cellular phone call~~.

87. (*Currently Amended*) The program product of claim 86, wherein ~~further comprising program instructions for the~~ each of the wireless devices further is facilitated to allow ~~operatively coupling to the server to~~ downloading a file from a remote web site into the storage space directly instead of downloading the file into ~~the each of~~ the wireless devices itself.

88. (*Currently Amended*) The program product of claim 86, wherein ~~further comprising program instructions for~~ the server is further configured to provide ~~providing~~ a console for ~~allowing~~ an administrator of a service provider to allocate the storage space for a subscriber of ~~the~~ one of the wireless devices, wherein the service provider provides services for the one of the wireless devices,.

89. (*Currently Amended*) The program product of claim 90 ~~86~~, wherein the operations to the storage space ~~include~~ comprise deleting, moving, or renaming a file being stored in the storage space.

90. (*New*) The program product of claim 86, wherein the operations to the storage space comprise creating from the each of the wireless devices a folder in the storage space.

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91. (*New*) The program product of claim 88, wherein each of the wireless devices executes a web browser through which a subscriber thereof accesses a storage space thereof for retrieving a file therefrom or storing a file therein.

Applicant Initiated Interview Request Form

Application No.: 10/726,897 First Named Applicant: Sheng Tai (Ted) Tsao
Examiner: Chankong, Dohm Art Unit: 2452 Status of Application: RCE

Tentative Participants:
(1) Sheng Tai (Ted) Tsao **(2)** _____

(3) _____ **(4)** _____

Proposed Date of Interview: TBD **Proposed Time:** TBD **(AM/PM)**

Type of Interview Requested:
(1) [✓] Telephonic (2) [✓] Personal (3) [ ] Video Conference

Exhibit To Be Shown or Demonstrated: [✓] YES [ ] NO
If yes, provide brief description: _____

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) claim 31			[ ]	[ ]	[ ]
(2) claim 33			[ ]	[ ]	[ ]
(3) c			[ ]	[ ]	[ ]
(4) all dependent clams			[ ]	[ ]	[ ]

[ ] Continuation Sheet Attached [✓] Proposed Amendment or Arguments Attached

Brief Description of Arguments to be Presented: Applicant believes that the proposed claims based on claims submitted on 11/14/2011 are patentable over all referenced arts and in good conditions for allowance.

An interview was conducted on the above-identified application on _____

NOTE: This form should be completed and filed by applicant in advance of the interview (see MPEP § 713.01). If this form is signed by a registered practitioner not of record, the Office will accept this as an indication that he or she is authorized to conduct an interview on behalf of the principal (37 CFR 1.32(a)(3)) pursuant to 37 CFR 1.34. This is not a power of attorney to any above named practitioner. See the Instruction Sheet for this form, which is incorporated by reference. By signing this form, applicant or practitioner is certifying that he or she has read the Instruction Sheet. After the interview is conducted, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible. This application will not be delayed from issue because of applicant's failure to submit a written record of this interview.

/Shengtai Tsao/
Applicant/Applicant's Representative Signature

Examiner/SPE Signature

Sheng Tai (Ted) Tsao
Typed/Printed Name of Applicant or Representative

77501
Registration Number, if applicable

PTOL-413A (08-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Instruction Sheet for:
APPLICANT INITIATED INTERVIEW REQUEST FORM

(Not to be Submitted to the USPTO)

1. If this form is signed by a registered practitioner not of record, the authority to submit the Applicant Initiated Interview Request Form is pursuant to limited authority to act in a representative capacity under 37 CFR 1.34 and further proof of authority to act in a representative capacity may be required. *See* 37 CFR 1.34.

   The Office will accept the signed form as an indication that the registered practitioner not of record is authorized to conduct an interview on behalf of the principal in pursuant to 37 CFR 1.34.

   For more information, see the "Conducting an Interview with a Registered Practitioner Acting in a Representative Capacity" notice which is available on the USPTO Web site at: http://www.uspto.gov/patents/law/notices/2010.jsp.

2. This is not a power of attorney to any named practitioner. Accordingly, any registered practitioner not of record named on the form does not have authority to sign a request to change the correspondence address, a request for express abandonment, a disclaimer, a power of attorney, or other document requiring the signature of the applicant, assignee of the entire interest or an attorney of record. If appropriate, a separate power of attorney to the named practitioner should be executed and filed in the US Patent and Trademark Office.

3. Any interview concerning an unpublished application under 35 U.S.C. § 122(b) with a registered practitioner not of record, pursuant to 37 CFR 1.34, will be conducted based on the information and files supplied by the practitioner in view of the confidentiality requirements of 35 U.S.C. § 122(a).

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

REMARKS

To accelerating the prosecution of instant application, applicant has proposed a wrapper including amended claims 31 – 93 that has pointed out to the specific area of the invention of instant application.

A request for interview to discuss the patentability of instant application is respectively submitted.

It is believed that the remarksmade on 09/23/2011, 05/31/2011, and 04/18/2011 have fully overcome the rejections based on referenced arts of O'Brien, Mochmuth, and Jhingan.

Therefore, the issuance of a formal notice of allowance at an earlier date is respectfully requested.

Applicant also very appreciates the Office Action for carefully examining the present application and if a telephone conference would facilitate the prosecution of this application, the applicant Sheng Tai (Ted) Tsao can be reached at (408) 813-0536 and at 408-251-0864. Please also forward the corresponding materials to inventor's address of 2979 Heidi Drive, San Jose, CA 95132.

Respectfully submitted,
Date: 05/06 /2012

/Shengtai tsao/
Sheng Tai (Ted) Tsao
2979 heidi drive,
San Jose, CA 95132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.

SERIAL NO.: 10/726,897 Confirmation No. 4178

FILING DATE: 12/04/2003

TITLE: The Use of Wireless Devices' External Storage

EXAMINER: Chankong, Dohm

ART UNIT: 2452

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Interview Request for the application 10/726,897

Dear Madam:

Applicant seeks an interview opportunity with examiner for accelerating the prosecution of instant application. Enclosed please find:

1) A list of proposed claims for interview that is based onclaims submitted on 11/14/2011.
2) A copy of amended claims with mark to show where the changes are made to the claims submitted on 11/14/2011.

An earlier allowance of the claims is respectively requested

.

Thanks for your help & Respectively Submitted
06/05/2012

//Shanegtai Tsao//
Sheng Tai (Ted) Tsao
2979 Heidi Drive,
San Jose, CA 95132
408-813-0536

PROPOSED CLAIMS FOR INTERVIEW

1 – 30 (Canceled)

31. A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device ;

creating a file system for the storage space allocated for the wireless device ;

providing a link for the wireless device to access the storage space ; and

updating the file system whenever a user of the wireless device performs operations to the storage space.

32. (Canceled)

33. A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

provide a link for the each of the wireless devices to access the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices.

34 – 68 (Canceled)

69. The method as recited in claim 31, wherein the operations to the storagespace include creating from the wireless devicea folder in the storage space.

70. The method as recited in claim 69, wherein the operations to the storage space include deleting, moving, or renaming a file being stored in the storage space.

71. The method as recited in claim 31, wherein the link is wireless.

72. The method as recited in claim 31, wherein said creating a file system for the storage space comprises partitioning a storage device to create the storage space according to the predefined capacity.

73. The method as recited in claim 71, further comprising:

providing a console for an administrator of a service provider to allocate the storage space for a subscriber of the wireless device, wherein the service provider provides services for the wireless device.

74. (*canceled*).

75. The method as recited in claim 90, wherein the wireless device executes a web browser through which the subscriber accesses the storage space for retrieving a file therefrom or storing a file therein.

76. The method as recited in claim 31, further comprising facilitating to store a file being downloaded from a website directly into the storage space.

77. The method as recited in claim 76, wherein said facilitating to store a file being downloaded from a website directly into the storage space comprises:

obtaining downloading information for the file;

caching the downloading information in the wireless device; and

causing the server in accordance with the downloading information to download the file directly into the storage space.

78. The system as recited in claim 33, wherein the operations to the storage space include creating from the each of the wireless devices a folder in the storage space.

79. The system as recited in claim 78, wherein the operations to the storage space include deleting, moving, or renaming a file being stored in the storage space.

80. The system as recited in claim 33, wherein the link is wireless.

81. The system as recited in claim 80, wherein the server is further configured to provide a console for an administrator of a service provider to allocate the storage space for a subscriber of the one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Canceled*)

83. The system as recited in claim 91, wherein the each of the wireless devices executes a web browser through which a subscriber thereof accesses a storage space thereof for retrieving a file therefrom or storing a file therein.

84. – 85 (*Canceled*)

86. A computer program product for expanding storage capacity of a plurality of wireless devices, stored in a non-transitory computer-readable medium in a server,
the computer program product comprising:
program instructions when executed by a server for the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

provide a link for the each of the wireless devices to access the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices

87 – 89 (Canceled)

90. The method as recited in claim 71, wherein the wireless device includes a function of making or receiving a cellular phone call.

91. The system as recited in claim 80, wherein each of the wireless devices includes a function of making or receiving a cellular phone call.

92. The program product as recited in claim 86, wherein the link is wireless.

93. The program product as recited in claim 92, wherein each of the wireless devices includes a function of making or receiving a cellular call.

Amended claim with Mark to show where the changes are made

1 – 30 (Canceled)

31. (*Currently Amended*) A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device ;

creating a file system for the storage space allocated for the wireless device ;

providing a link for the wireless device to access the storage space ; and

updating the file system whenever a user of the wireless device performs operations to the storage space~~, wherein the wireless device includes a function of making or receiving a cellular phone call~~.

32. (Canceled)

33. (*Currently Amended*) A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

provide a link for the each of the wireless devices to access the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices~~, and~~

~~wherein the each of the wireless devices includes a function of making or receiving a cellular phone call.~~

34 – 68 (Canceled)

69. (*Previously Presented*) The method as recited in claim 31, wherein the operations to the storage space include creating from the wireless device a folder in the storage space.

70. (*Previously Presented*) The method as recited in claim 69, wherein the operations to the storage space include deleting, moving, or renaming a file being stored in the storage space.

71. (*Currently Amended*) The method as recited in claim 31, wherein the link ~~comprises a combination of~~ is wireless ~~and wired communication links~~.

72. (*Previously Presented*) The method as recited in claim 31, wherein said creating a file system for the storage space comprises partitioning a storage device to create the storage space according to the predefined capacity.

73. (*Currently Amended*) The method as recited in claim 71, further comprising:

providing a console for ~~allowing~~ an administrator of a service provider to allocate the storage space for a subscriber of the wireless device, wherein the service provider provides services for the wireless device.

74. (*canceled*).

75. (*Currently Amended*) The method as recited in claim 90 ~~31~~, wherein the wireless device executes a web browser through which the subscriber accesses the storage space for retrieving a file therefrom or storing a file therein.

76. (*Currently Amended*) The method as recited in claim 3175, further comprising facilitating to store a file being downloaded from a website directly into the storage space ~~instead of downloading the file into the wireless device itself~~.

77. (*Currently Amended*) The method as recited in claim 76, wherein said facilitating to store a file being downloaded from a website directly into the storage space comprises:

obtaining downloading information for the file;

caching the downloading information in the wireless device; and

causing the server in accordance with the downloading information to download the file directly into the storage space.

78. (*Previously Presented*) The system as recited in claim 33, wherein the operations to the storage space include creating from the each of the wireless devices a folder in the storage space.

79. (*Previously Presented*) The system as recited in claim 78, wherein the operations to the storage space include deleting, moving, or renaming a file being stored in the storage space.

80. (*Currently Amended*) The system as recited in claim 33, wherein the link ~~comprises a combination of~~ is wireless ~~and wired communication links~~.

81. (*Currently Amended*) The system as recited in claim 80, wherein the server is further configured to provide a console for an administrator of a service provider to allocate the storage space for a subscriber of the one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Canceled*)

83. (*Currently Amended*) The system as recited in claim 9182, wherein the each of the wireless devices executes a web browser through which a subscriber thereof accesses a storage space thereof for retrieving a file therefrom or storing a file therein.

84. (*Canceled*)

85. (*Canceled*)

86. *(Currently Amended)* A computer program product for expanding storage capacity of a plurality of wireless devices, stored in a non-transitory computer-readable medium in a server, having a computer readable program code embodied therein, said computer readable program code comprising program instructions adapted to be executed for implementing expanding storage capacity of a plurality of wireless devices,

the computer program product comprising:

program instructions when executed by a server for the server to:

allocate a storage space of a predefined capacity for each of the wireless devices,

create a file system for the storage space allocated for the each of the wireless devices;

provide a link for the each of the wireless devices to accessthe storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices

~~for allocating via the server a storage space of a predefined capacity for each of the wireless devices, the storage space being remotely located with respect to the each of the wireless devices,~~

~~program instructions for creating a file system for the storage space allocated for the each of the wireless devices;~~

~~program instructions for providing a link for the each of the wireless devices to access the storage space;~~

~~wherein the link comprises a combination of wireless and wired communication media; and~~

~~program instructions for the server updating the file system whenever a user of the each of the wireless devices performs operations to the storage space;~~

~~wherein the each of the wireless devices executes a web browser through which the user is allowed to create a folder in the storage space and to access the storage space for retrieving a file therefrom or storing a file therein; and~~

~~wherein the each of the wireless device includes a function of making or receiving a cellular phone call.~~

87 – 89 (Canceled)

90. (*New*) The method as recited in claim 71, wherein the wireless device includes a function of making or receiving a cellular phone call.

91. (*New*) The system as recited in claim 80, wherein each of the wireless devices includes a function of making or receiving a cellular phone call.

92. (*New*) The program product as recited in claim 86, wherein the link is wireless.

93. (*New*) The program product as recited in claim 92, wherein each of the wireless devices includes a function of making or receiving a cellular call.

Electronic Acknowledgement Receipt	
EFS ID:	12946290
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	06-JUN-2012
Filing Date:	04-DEC-2003
Time Stamp:	12:52:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Letter Requesting Interview with Examiner	PTOL413A-interview-496.pdf	421167 42933b37d41d8b2da300a5b508ac8cc752c1f394	no	3
Warnings:					
Information:					
2	Applicant Arguments/Remarks Made in an Amendment	Remark-on-OA.pdf	300817 473cb927b5f9b26ae583702f3cd042ab3688cc17	no	1
Warnings:					
Information:					
3	Claims	897claims-interview.pdf	695920 3f7373e83d45125cfdd73c6650ee9f0e55a10cf1	no	5
Warnings:					
Information:					
4	Claims	897claims-markup.pdf	720609 2f4e4081e9087ce2f6087ef6b5b560fb186ef7df	no	6
Warnings:					
Information:					
		Total Files Size (in bytes):	2138513		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.

SERIAL NO.: 10/726,897 Confirmation No. 4178

FILING DATE: 12/04/2003

TITLE: The Use of Wireless Devices' External Storage

EXAMINER: Chankong, Dohm

ART UNIT: 2452

–

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Supplemental amendment for REC filing for the application 10/726,897

Dear Sir/Madam:

Included are:

1) An official RCE request form which did not attached to the RCE filing on 09/23/2011 although the fee for the RCE was paid.
2) An amended claim list with minor amendment based on the claims submitted on 09/23/2011.

There is no new matter being added. Therefore, the entry for the amended claims and an earlier allowance of the claims is respectively submitted.

Thanks for your help & Respectively Submitted
11/14/2011

//Shanegtai Tsao//
Sheng Tai (Ted) Tsao
2979 Heidi Drive,
San Jose, CA 95132
408-813-0536

REMARKS

An official RCE request form is attached that did not attached to the RCE filing on the filing data of 09/23/2011 although the fee for RCE was paid.

The remark made submitted on 9/23/2011 has fully overcome the referenced s the combination of O'Brien, Jhingan and Mochmuth has failed to disclose the major subject matters of the instant application. Therefore, all independent claims 31 and 33 are patentable over the combination of O'Brien, Jhingan and Mochmuth. Further all claims depending on the independent claims 31 and 33 shall be patentable as matter of the patent law (See Jenric/Pentron, Inc. v. Dillon Co., 205 F. 3d 1377, 1382 (Fed. Cir. 2000).). Thus, the withdrawing all 35 USC 103 rejections from the Office Action of 07/26/2011 is respectively requested.

Applicant believes that the proposed amended claims and the remarks made above have fully overcome the rejections made in Office Action on 07/26/2011 and the instant application are in condition for allowance. Therefore, the issuance of a formal notice of allowance at an earlier date is respectfully requested.

Applicant also very appreciates the Office Action for carefully examining the present application and if a telephone conference would facilitate the prosecution of this application, the applicant Sheng Tai (Ted) Tsao can be reached at (408) 813-0536 and at 408-251-0864. Please also forward the corresponding materials to inventor's address of 2979 Heidi Drive, San Jose, CA 95132.

Respectfully submitted,
Date: 11/14 /2011

/Shengtai tsao/
Sheng Tai (Ted) Tsao
2979 heidi drive,
San Jose, CA 95132

PTO/SB/30 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Request for Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	10/726/897
Filing Date	12/04/2003
First Named Inventor	Sheng Tai (Ted) Tsao
Art Unit	2452
Examiner Name	Chankong Dohm
Attorney Docket Number	

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 CFR 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

   a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

      ii. ☐ Other _____

   b. ☑ Enclosed

      i. ☑ Amendment/Reply

      ii. ☐ Affidavit(s)/ Declaration(s)

      iii. ☐ Information Disclosure Statement (IDS)

      iv. ☐ Other _____

2. Miscellaneous

   a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

   b. ☐ Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

   a. ☐ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. _____.

      i. ☐ RCE fee required under 37 CFR 1.17(e)

      ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)

      iii. ☐ Other _____

   b. ☐ Check in the amount of $ _____ enclosed

   c. ☑ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	//Sheng Tai Tsao//	Date	09/23/2011
Name (Print/Type)	Sheng Tai (Ted) Tsao	Registration No.	

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature			
Name (Print/Type)		Date	

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/30 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Instruction Sheet for RCEs

(not to be submitted to the USPTO)

NOTES:

An RCE is not a new application, and filing an RCE will not result in an application being accorded a new filing date.

Filing Qualifications:

The application must be a utility or plant application filed on or after June 8, 1995. The application cannot be a provisional application, a utility or plant application filed before June 8, 1995, a design application, or a patent under reexamination. See 37 CFR 1.114(e).

Filing Requirements:

Prosecution in the application must be closed. Prosecution is closed if the application is under appeal, or the last Office action is a final action, a notice of allowance, or an action that otherwise closes prosecution in the application (e.g., an Office action under *Ex parte Quayle*). See 37 CFR 1.114(b).

A submission and a fee are required at the time the RCE is filed. If reply to an Office action under 35 U.S.C. 132 is outstanding (e.g., the application is under final rejection), the submission must meet the reply requirements of 37 CFR 1.111. If there is no outstanding Office action, the submission can be an information disclosure statement, an amendment, new arguments, or new evidence. See 37 CFR 1.114(c). The submission may be a previously filed amendment (e.g., an amendment after final rejection).

WARNINGS:

Request for Suspension of Action:

All RCE filing requirements must be met before suspension of action is granted. A request for a suspension of action under 37 CFR 1.103(c) does not satisfy the submission requirement and does not permit the filing of the required submission to be suspended.

Improper RCE will NOT toll Any Time Period:

Before Appeal - If the RCE is improper (e.g., prosecution in the application is not closed or the submission or fee has not been filed) and the application is not under appeal, the time period set forth in the last Office action will continue to run and the application will be abandoned after the statutory time period has expired if a reply to the Office action is not timely filed. No additional time will be given to correct the improper RCE.

Under Appeal - If the RCE is improper (e.g., the submission or the fee has not been filed) and the application is under appeal, the improper RCE is effective to withdraw the appeal. Withdrawal of the appeal results in the allowance or abandonment of the application depending on the status of the claims. If there are no allowed claims, the application is abandoned. If there is at least one allowed claim, the application will be passed to issue on the allowed claim(s). See MPEP 1215.01.

See MPEP 706.07(h) for further information on the RCE practice.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	11397193
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	897claims-final.pdf	712301 8f5c164e71afb72280203bc929f80f7e8df1e4ad	no	7
Warnings:					
Information:					
2	Supplemental Response or Supplemental Amendment	897Remark.pdf	301222 974176afaafa70d8ceba23357edb37bcd3a07b9b	no	1
Warnings:					
Information:					
3	Supplemental Response or Supplemental Amendment	302-RCE.pdf	303296 38a59f54bbc30b156eecf128bd297151b62a6350	no	3
Warnings:					
Information:					
		Total Files Size (in bytes):	1316819		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Amendment in the claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

1 – 30 (Canceled)

31. (*Currently Amended*) A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server ~~computer~~ a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device ;

creating a file system for the storage space allocated for the wireless device ;

providing a link for the wireless device to access the storage space ~~and access world wide web~~; and

updating the file system whenever a user of the wireless device performs operations to the storage space, wherein the wireless device includes a function of making or receiving a cellular phone call.

32. (Canceled)

33. (*Currently Amended*) A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server ~~computer~~ configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless devices;

provide a link for the each of the wireless devices to access the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices; and

~~the plurality of the wireless devices,~~ wherein the each of the wireless devices ~~is configured and allowed to access world wide web and access the storage space allocated for the each of the wireless devices, and wherein the each of the wireless devices~~ includes a function of making or receiving a cellular phone call.

34 – 68 (Canceled)

69. (*Previously Presented*) The method as recited in claim 31, wherein the operations to the storage space include creating from the wireless device a folder in the storage space.

70. (*Previously Presented*) The method as recited in claim 69, wherein the operations to the storage space include deleting, moving, or renaming a file being stored in the storage space.

71. (*Previously Presented*) The method as recited in claim 31, wherein the link comprises a combination of wireless and wired communication links.

72. (*Previously Presented*) The method as recited in claim 31, wherein said creating a file system for the storage space comprises partitioning a storage device to create the storage space according to the predefined capacity.

73. (*Previously Presented*) The method as recited in claim 71, further comprising: providing a console for allowing an administrator of a service provider to allocate the storage space for a subscriber of the wireless device, wherein the service provider provides services for the wireless device.

74. (*canceled*).

75. (*Previously Presented*) The method as recited in claim 31, wherein the wireless device executes a web browser through which the subscriber accesses the storage space for retrieving a file therefrom or storing a file therein.

76. (*Previously Presented*) The method as recited in claim 75, further comprising facilitating to store a file being downloaded from a website directly into the storage space instead of downloading the file into the wireless device itself.

77. (*Currently Amended*) The method as recited in claim 76, wherein said facilitating to store a file being downloaded from a website directly into the storage space comprises:

obtaining downloading information for the file;

caching the downloading information in the wireless device; and

causing the server ~~computer~~ in accordance with the downloading information to download the file directly into the storage space.

78. (*Previously Presented*) The system as recited in claim 33, wherein the operations to the storage space include creating from the each of the wireless devices a folder in the storage space.

79. (*Previously Presented*) The system as recited in claim 78, wherein the operations to the storage space include deleting, moving, or renaming a file being stored in the storage space.

80. (*Previously Presented*) The system as recited in claim 33, wherein the link comprises a combination of wireless and wired communication links.

81. (*Currently Amended*) The system as recited in claim 80, wherein the server ~~computer~~ is further configured to provide a console for ~~allowing~~ an administrator of a service provider to allocate the storage space for a subscriber of the one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Canceled*)

83. (*Previously Presented*) The system as recited in claim 82, wherein the each of the wireless device executes a web browser through which a subscriber thereof accesses a storage space thereof for retrieving a file therefrom or storing a file therein.

84. (*Previously Presented*) The system as recited in claim 33, wherein the each of the wireless devices further is facilitated to allow downloading a file from a website

directly into the storage space instead of downloading the file into the wireless device itself.

85. (*Canceled*)

86. *(Currently Amended)* A computer program product, stored in a non-transitory computer-readable medium in a server, having a computer readable program code embodied therein, said computer readable program code comprising program instructions adapted to be executed for implementing expanding storage capacity of a plurality of wireless devices, the computer program product comprising:

program instructions for allocating via ~~a~~ the server ~~computer~~ a storage space of a predefined capacity for each of the wireless devices, the storage space being remotely located with respect to the each of the wireless devices,

program instructions for creating a file system for the storage space allocated for the each of the wireless devices;

program instructions for providing a link for the each of the wireless devices to access the storage space ~~and access world wide web~~,

wherein the link comprises a combination of wireless and wired communication ~~links~~ media; and

program instructions for the server ~~computer~~ updating the file system whenever a user of the each of the wireless devices performs operations to the storage space,

wherein the each of the wireless devices executes a web browser through which the user is allowed to create a folder in the storage space and to access the storage space for retrieving a file therefrom or storing a file therein, and

wherein the each of the wireless device includes a function of making or receiving a cellular phone call.

87. (*Currently Amended*) The program product of claim 86 further comprising program instructions for the each of the wireless devices operatively coupling to the server ~~computer~~ to download a file from a remote web site into the storage space directly instead of loading the file into the each of the wireless devices itself.

88. (*Currently Amended*)_~~–~~The program product of claim 86 further comprising program instructions for the server ~~computer~~ providing a console for allowing an administrator of a service provider to allocate the storage space for a subscriber of the one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

89. (*Previously_Presented*) The program product of claim 86, wherein the operations to the storage space include deleting, moving, or renaming a file being stored in the storage space.

REMARKS

The Office Action sent to Applicant on 0726/2011 has been carefully considered. Claims 31, 33 and 69 - 85 are previously pending and all pending claims stand rejected. The claims 31, 33, and 69 - 85 are amended. The amendment includes canceling additional claims 74, 82, and 85 and adding new claims 86 – 89. The amendment comprises enhancements in response to the Office Action of 07/26/2011 without introduce any new matter. The current pending claims standing for examining are claims 31, 33, 69 – 73, 75 – 81, 83 - 84, and 86 - 89. In addition, the specification is also amended to make correction on the referenced parent applications. The amended specification complies to the 312 amendment requirement without introducing any new matters. Applicant respectfully requests entry of the foregoing Amendments and reconsideration of the instant application in light of the amendments above and the remarks below.

1: Issues On Referencing Prior Applications:

a) The specification of instant application was not professionally drafted at the time of filing on 12/04/2003. Specially, it incorrectly referenced the related parent applications regardless its numerous formality issues.

For example, in the first paragraph of "Field of the Invention" of instant application has referenced claims 20 item a), b), d), claim 30 item b), and claim 36 of provisional application 60/401,238 of "Concurrent Web Based Multi-Task Support for Control Management System".

Yet, it actually really means to reference the utility application 10/713,904 because the provisional application 60/401,238 actually does not have these claims, instead these claims can be found in the converted application 10/713,904 . For example, the

description of the claims 36 of 10/713,904 states (claim 36 of 10/713,904 recite, and emphasis added)

"36. The claim 20 with item a), b), and d) together with claim 30) further includes a) When the wireless devices used as web-console host, the users on the web console of these wireless devices can partition storage, create and mount file system, and create file/directory hierarchy for any system within CCDSVM. In addition, user can move any type of data to the storage on these system from console host itself or from any other system within CCDSVM. This actually in the sense that is has enabled the users of these wireless devices to actually own a huge amount of virtual external storage such as owning multiple Gig Bytes disk storage on either system units or control management station."

In addition, the first paragraph of instant application also referenced a claim 19 of provisional application 60/402,626 of "IP Based Distributed Virtual SAN" filed on 8/12/2002. Actually, it really means to reference the application 10/713,905 because the provisional application 60/402,626 does not have the claim 19, instead the application 10/713,905 has claim 19.

Applicant had requested to convert the provisional application 60/401,238 filed on 8/6/2002 into a non-provisional application on 6/22/2003. The conversion requested got approved on 1/24/2004along with the application number 10/713,904 assigned on the same day. Applicant had requested to convert the provisional application 60/402,626 filed on 8/12/2002 into a non-provisional application on 6/22/2003. The conversion requested got approved on 1/24/2004 along with the application number 10/713,905 assigned on the same day.

This is why when filing instant application, Applicant can not reference the application 10/713,904 and ha sto reference the 60/401,238 because there is no application number 10/713,904 being assigned yet. This is also why when filing instant application, Applicant can not reference the application 10/713,905 and has to reference the 60/402,626 because there is no application number 10/713,904 being assigned yet.

Applicant hopes that the above clarification shall remove the confusing around the referenced parent application and hope to provide the specification of instant application having a solid ground. Also, a request for entering the amended specification is also respectively submitted.

2. Regarding The 35 USC §102 Rejection:

In paragraph II of the Office Action, the claims 31, 33, and 69 - 85 are rejected as being anticipated by O'Brien et al. (US. Patent No. 6,351,807 or "O'Brien"). Applicant respectively traverses the rejections and can not agree such rejection. Because a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added).

Applicant would like to point out that as matter of the facts, there are many elements of instant application are not found, either expressly or implicitly, in a single prior art reference of O'Brien. For example:

1) Regarding the claim 31 and 33 of instant application, Applicant can not agree the assertions on claims 31 and 33 from page 2 of the Office Action because O'Brien completely failed to disclose key elements of "a server computer", "wireless device", "wireless link" and "creating a file system for the storage space allocated for the wireless device".

First, the entire application of O'Brien never discloses any information that disclosed by instant application for wireless device, wireless link, and a storage server computer capable of IP, SCSI, Fiber channel and wireless communication. However, the Office Action of 07/26/2011 and 3/23/2011 has mentioned that a laptop is a type of wireless

device. Applicant can not accept such comment because such comment really against the original intention of O'Brien.

In respect to the computer history, specially before 2001, it is not proper to call the laptop computer as "a wireless device" although recently it might be true. Specially, if in 2000, O'Brien had thought of his laptop is a wireless device in his mind or he thought of his X:Drive is for wireless communication, he would also disclose cell phone and PDA which were popular consumer communication devices at that time. Unfortunately O'Brien has failed to disclose wireless device for cell phone and PDA and failed to disclose wireless communication media and links of instant application. Therefore, it is not proper to label the laptop of O'Brien as a wireless device that is probably against the original intention of O'Brien.

Most importantly, even if the laptop of O'Brien disclosed in 2000 is a wireless device, O'Brien still failed to disclose wireless communication media and a storage server capable of wireless, IP, SCSI and Fiber channel communication of instant application because throughout entire specification and drawings of O'Brien, people can not find these information. Obviously, without wireless communication media and links, the wireless laptop of O'Brien can not even reach the external storage of O'Brien. Therefore, O'Brien has failed to provide external storage space for wireless communication device.

Instant application has explicitly disclosed storage server capable of wireless communication, disclosed a network comprising a combination of wireless communication link, and disclosed wireless communication device in every page of instant specification. For example, in page 1, lines 20 – 26 of instant specification (recited in part & emphasis added) disclosed:

> "The External Storage of a System: The storage media is not a component of a system in a same enclosure. Therefore, they has to be connected through longer cable such as

Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless media etc..... "

For example, in page 3, lines 14 – 19 of instant specification (recited & emphasis added) disclosed:

"Net (2) represent a communication link, which may combined with wireless and non-wireless connection media and guarantee the communication packet can be sent/received between wireless device and the server. It is also assume that the net (2) infrastructure is built up in such way that the user from web-browser of a wireless device can access and browse any web-site on the Internet, Intranet."

For example, in page 2, lines 23 – 24 of instant application disclosed (recite in part & emphasis added):

"Today the wireless users commonly face the problem of lack of storage capacity on their wireless devices such as cell phone or PDA"

Since O'Brien has failed to disclose wireless communication media and links, wireless device, and wireless capable of storage server of instant application and the URL of O'Brien can not reach the wireless device since there is no wireless communication media and links, for these reasons alone, the claim 31 and 33 is patentable over O'Brien.

Second, O'Brien has failed to disclose creating "a file system for the storage space allocated for the wireless device" that disclosed in page 5, lines 1 – 2 of instant application such as (recited in part & emphasis added)"

"..Finally, for each small storage volume, a corresponding file system could be built up."

On the other hand, the Fig. 2, item 204 of O'Brien referenced by the Office Action does not support the assertion made by the Office Action because every computer has file systems. It is clear that creating a file system does not equivalent to "creating a file system for the storage space allocated for the wireless device" of instant application. Most importantly, it is obvious there is no any evidence that the file system 204 in Fig. 2 of

O'Brien is created for a storage volume exclusively allocated to a wireless device of instant application. In addition, throughout entire specification of O'Brien, there is also no such information either. Fig.2 of O'Brien is recited bellow:

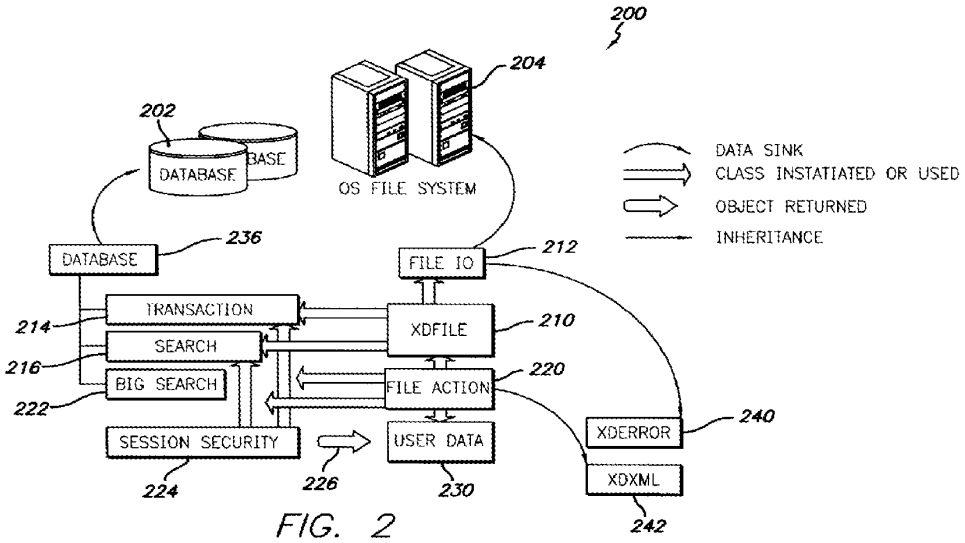


FIG. 2

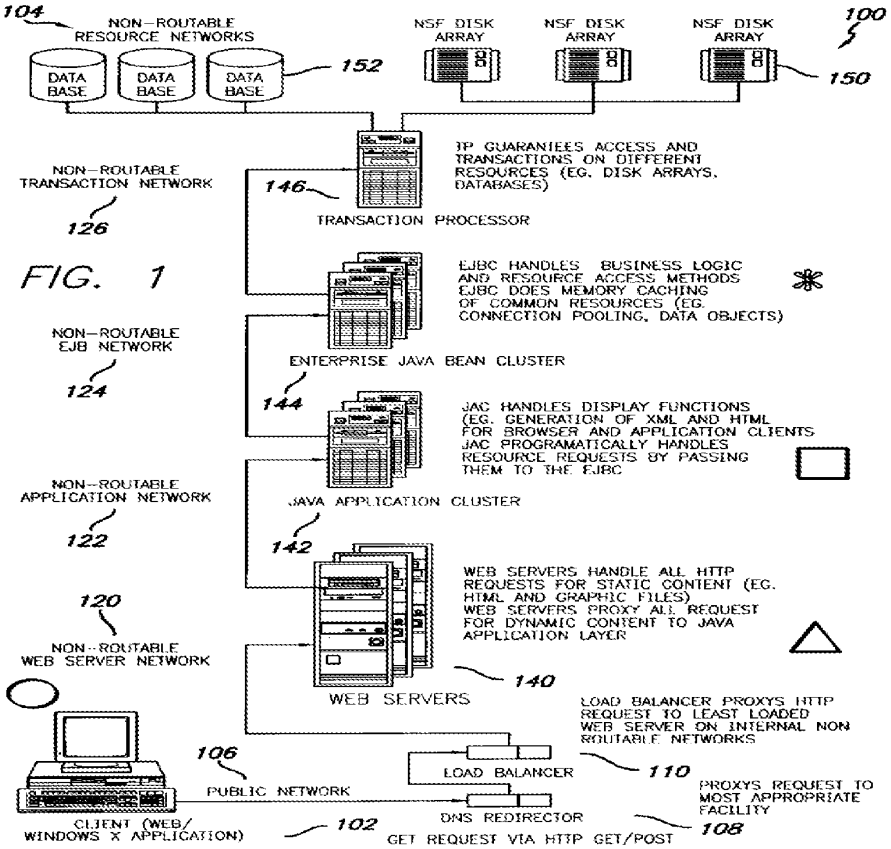
It is obvious that the file system 204 of O'Brien has failed to be created on a storage volume exclusively assigned to a wireless device. For this reason alone the claims 31 and 33 are patentable over O'Brien.

Third, O'Brien has failed to disclose that a server computer (server unit) in a communication network of instant application can provide storage space and services directly each of a plurality of wireless communication devices, can support user web based file objects accessing and management including creating file system on the allocated storage space, and can support download a file from a web site directly into a user's assigned storage unit on the server computer upon a user of a wireless device requests to download the file from the web site.

The proof information for the above statements can be found in the Fig. 1, Fig. 2, and in description written for Fig. 1 and Fig. 2 in page 3 – page 5 of instant application, where a server unit is described which is a server computer equipped with storage devices.

Contrary, the X:Drive of O'Brien is really a federated group of multiple server computers, wherein each server computer providing different functionalities to work with other server computers to provide storage service. Therefore, for a same storage service request, X:Drive requires the request being traveling along among multiple server computers to get finally served while instant application only requires one server computer to provide equivalent storage service. These are revealed in Fig. 1 and col. 3, lines 15 – 21 of O'Brien (recited bellow and emphasis added):

"Note should be made that the term "X:Drive" refers both to the system as a whole and to the individual space allocated to an individual user. Consequently, reference is sometimes made herein to the X:Drive system or to X:Drive to refer to the system as a whole. At other times, the term X:Drive indicates the user's individual X:Drive, or allocated space. The different uses are indicated by context."



In Fig. 1 of O'Brien, the X:Drive comprising web server Java application cluster, enterprise Java Bean Cluster, Transaction processor and load balancer and web server. It is clear that if a transaction processor server 146 of O'Brien is broken, the storage server of O'Brien can not function at all. Therefore, the performance and reliability of instant application shall be much higher than O'Brien due to less server computers required for perform similar functionality while the cost of storage service of instant application shall be lower than O'Bren.

To summarize, O'Brien does not have a server computer of instant application for providing storage space and services to each wireless device. For these reasons alone, the claim 31 and 33 are patentable over O'Brien.

Fourth, Although O'Brein mentioned URL, in col. 2, lines 17 – 25 of his specification such as

"Generally, home pages or other web pages are requested by the user through designation of the URL (uniform resource locator). With the transmission to the user via tcp/ip protocol, the information present at the url (and generally a file located somewhere on a computer) is transmitted to the user. the file may have links, or pointers, to other resources including images, graphics, audio or video streams, or other resources."

As pointed out before, O'Brien has failed to disclose the network of instant application that combines wireless and wired communication links, therefore, the URL of O'Brien can let any one of wireless devices to each and access the allocated storage on the storage server of instant application. For these reasons alone, the claim 31 and 33 are patentable over O'Brien.

2) Regarding claim 72, Applicant can not agree the assertions made on claim 72 because

During discussing patentability for claim 31 and 33, applicant has proved that O'Brien has failed to disclose the wireless device, wireless communication media and a

link combined with wired and wireless communication links, has failed to disclose creating file system for the storage space exclusively allocated to a wireless device, and failed to disclose a storage server providing external storage to wireless device. Therefore, O'Bring has also failed to disclose "said creating a file system for the storage space comprises partitioning a storage device to create the storage space according to the predefined capacity" of claim 72.

As matter of the fact, O'Brien even never disclose a words of "partitioning storage" or other equivalent words that contains a meaning of partitioning storage in his specification. Thus, the claim 72 is patentable over O'Brien.

3) Regarding claim 76 and 84, and claim 77 and 85, Applicant can not agree the assertions made by Office Action because O'Brien failed to disclose a sequence of steps of instant application. The steps include obtaining the downloading information of the file from a cache space on the wireless device for facilitating downloading the file from a web site into an allocated storage space on the server computer while O'Brien completely failed to disclose such subject matters on how to use "cache" for out-band downloading.

For example, instant application that has disclosed in page 6, lines 1 – 20 of instant specification such that (page 6, lines 1 – 20 recited in part and emphasis):

1) "..... web-browser (8 of Fig. 3) of a specific wireless device (1 of Fig. 3) accesses a remote download web server site (12 of Fig. 3) and obtain the information for download via path (a) of Fig. 3. For example, to get a web-page, which contains the data name for download.
2) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) obtains download information, which becomes available in the cached web-pages on wireless device.....
3) ..... send the obtained download information to storage server.....
4) .....
5) ....."

Although O'Brien mentioned cache such that

> "The EJB cluster (EJBC) caches memory of common resource such as the pooling of data connections and the like, as well as data objects." (O'Brein col. 8, lines 33 – 39)

It is obvious that the cache of the enterprise JavaBean cluster of O'Brien has failed to disclose the cache of the wireless device of instant application because only the information for the file in the cache of the wireless device can be used for accomplishing such out-band downloading the file into the storage space for a user of a wireless device.

Although col. 4, lines 7 – 10 of O'Brien mentioned that

"the shared internet storage resource of the present invention allows for direct internet-to-internet file transfer to a user's allocated x:drive file space in a process referred to as "skip the download" or "save to my xdrive." AND

col. 18, lines 33 – 39 mentioned that

"as shown in fig. 11, the save to my xdrive system 1100 first has the user 1110 submit the URL at step 1112. in order to access the x:drive system 100 of the present invention, the user submits the url as well as his or her user name and password at step 1114. upon submitting the url and the appropriate verification information, evaluation is made of the information for authentication purposes at step 1116."

It is clear that O'Brein definitely failed to disclose a step "2)" quoted above from the instant application that the download information needs to be obtained from the cache of the wireless device of instant application in order to have out-band "internet-to-internet file transfer" for the wireless device. Things are all there, yet as an inventor, O'Brien has failed to pick up such a step for getting the downloading information from cache in his specification.

Additionally, since O'Brien failed to disclose the wireless device and wireless communication media and links, and failed to disclose create file system on storage space

allocated to the wireless device, and failed to disclose a storage server providing storage service including out-band downloading service of instant application, O'Brien's "Save to MY X:Drive System" has failed to disclose that "facilitating to store a file being downloaded from a web site directly into the storage space instead of download" of instant application.

In conclusion, for the above discussed reasons alone, the claims 76 and 84, and 77 and 85 are patentable over the O'Brien since these claims have reflected the key elements disclosed by Applicant that O'Brien yet has failed to disclose.

Also, since independent claims 31 and 33 are patentable over O'Brien, by the law, the rest of claims depending on the claim 31 and 33 are also patentable over the O'Brien. Further, Applicant respectively submits requests for withdrawing of the 35 USC 102 (b) rejections over all claims of instant application and for allowance for the mentioned claims .

3. Regarding The 35 USC §103 Rejections:

The Office Action rejected claims 67 - 71, and 78 - 80 under 35 U.S.C. 103(a) as being obvious over O'Brien (US. 6,351,776), hereinafter referred to as "O'Brien" in view of Jhingan et al., US patent publication No. 20020133597 hereinafter "Jingan. Also, the claim 71 and 80 are rejected as being unpatentable over O'Brien and Jhingan, in further view of Hochmuth (US 7,500,069), hereinafter referred to as "Hochmuth".

Without admitting that O'Brien, Jhingan and Hochmuth are prior art and reserving the right to establish that they are not prior art. To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *in re Royka*, 490 f. 2d 98 1, 180 Uspq 580 (CCPA 1974). in other words, each and every element (or limitation) in a claim must be taught somewhere in the applied references. if

any one of the elements is not taught in any of the applied prior art, the obviousness rejection under §103 cannot stand.

Applicant respectively submit that the combination of O'Brien, Jhingan and Hochmuth have failed to disclose many key elements of instant application.

Regarding rejecting claims 69, 78, 70 and 79:

Applicant can not agree the assertions of Office Action made for rejection because:

first, although Jhingan disclosed a cell phone, yet, similar to O'Brien, Jhingan has also failed to disclose wireless communication media and links in the communication network of Jhingan and failed to disclose a wireless capable of storage server that instant application disclosed both as discussed before. Therefore, the cell phone of Jhingan can not reach the storage provided by Jhingan.

Second, similar to O'Brien, Jhingan has also failed to disclose a server unit (a storage server) to allocating predefined sized storage space to the wireless device, create file system on the storage space, and create a folder in the storage space. For example, the paragraph [0056] and [0057] of Jhingan recited bellow (emphasis added):

"[0056] FIG. 6 is a flowchart illustrating a file management session between a user and the Web application 106 once a user is registered. As the user performs a login to the Web application 106 in step 602, the Web application 106 also performs a login at the USC server 202A identified by sd12345.zzz.net, where the user's storage space account resides. In return, the Web application 106 obtains from the USC server 202A an encrypted session key such as a 128-bit key in step 604, which is used for subsequent operations during the session.

[0057] Subsequently in step 606, as the user performs a file or folder operation, such as creating a folder, the Web application 106 makes an API call with the encrypted session key to the USC server 202A in step 608 to create a folder for the user on the USC server 202A. In this instance, the API call is: "

Obviously, Jhingan's system requires two times login process, and a user of a computing device can not create a folder directly in a storage space of a storage server,

instead it requires an extra intermediate web server 106 to perform an API call to the storage server in order for creating the file folder. Opposite to Jhingan,, instant application eliminates the extra requirement for an additional intermediate server computer (web application 106) of Jhingan and allows a user of the wireless device to create a folder directly in the allocated storage space of a storage server. Obviously, the performance and reliability of instant application is better than Jhingan while the cost of providing storage service of instant application is obviously lower than Jhingan.

Actually, even with a virtualized storage server disclosed in Fig. 4 and in page 6, lines 30 - 39 of instant application, instant application will still have better performance and reliability than Jhingan. Applicant will explore this in a continuation application of instant application.

Similarly, instant application allows the user of the wireless device performing tasks of deleting, moving, copying or renaming files and folders on the allocated storage and transmits these tasks directly to the storage server for executing. On the other hand, Jhingan requires transmitting tasks to an extra intermediate web application 106 to make call to have storage server performing such tasks. It is clear that both O'Brien and Jhingan failed to disclose creating a file folder on a server unit of instant application. Therefore, the claims 69, 78, 70 and 79 are patentable over the combined O'Brien and Ghingan and a request for withdrawing the claims rejections is respectively submitted.

Regarding claim 71 and 80: Applicant can not agree the assertion of Office Action. The reason is simple that although Jhingan disclosed a cell phone, yet just like O'Brien, Jhingan has failed to disclose wireless link and wireless communication media for Jhingan's server while instant application has disclosed all of these. Obviously, without wireless media and wireless connection, Jhingan does not have wireless link and his mobile phone can not reach the storage provided by Jhingan. Besides, Simlar to O'Brien, Jhingan

has also failed to disclose the wireless capable of storage server of instant application. Therefore, the claim 71 and 80 are patentable over Jhingan and O'Brien and a request for withdrawing the claims rejections is respectively submitted..

Regarding claim 73 and 81: Applicant can not agree the assertion of Office Action. Because what col. 8, lines 8 – 17 of Hochmuth disclosed is (recited and emphasis added)

"configuration server 54 includes logic 59, which may include one or more processing modules and preferably includes computer readable program code for automatically configuring secure switched network 40. logic 59 may reside in one or more modules in configuration server 54 and/or in other subsystems, may allow administrators to assign secure logical storage partitions to particular cells that are connected to clients 20 and/or 30, and may simplify the management of all of the elements within administrative module 50. For example, logic 59 may provide a simple, common, and easy-to-use user interface that may be used to create cells that include particular LUN and secure file servers (sfss), and manage storage assignment and/or security."

Obviously, administrator of Hochmuth assigns secure logical storage partitions to particular cell only (the cell of Hochmuth comprising a plurality of networked resources including server computers), instead of assigning storage partition to his client 20. Opposite to Hochmuth, the administrator of instant application allocates storage space of the storage server and assigns the allocated storage space to each of wireless devices directly. Therefore, the combination of O'Brien, Jhingan and Hochmuth has failed to disclose the elements of instant application that were reflected in claim 73 and 81. Therefore, the claim 73 and 81 are patentable over Jhingan and O'Brien and a request for withdrawing the claims rejections is respectively submitted..

Regarding claims 74 and 82: Although the claim 74 and 82 are canceled and the reject are moot, Applicant still can not agree the assertion of Office Action because as

pointed out before that communication network of Jhingan has failed to disclose wireless link between the wireless device and the storage server that are disclosed by instant application. Therefore, Jhingan's cell phone can not reach the storage server of Jhingan. Opposite to Jhingan, the wireless device of instant application comprises function of making or receiving phone call and it is also capable of accessing assigned storage space on the storage server. Therefore, claim 71 and 80 of instant application for the wireless device are patentable over O'Bring and Jhingan and a request for withdrawing the claims rejections is respectively submitted.

Regarding claims 75 and 83, Applicant also can not agree the assertion of Office Action. What O'Brien disclosed col. 3, lines 45 – 56 is (recited)

"XML may be used in combination with JavaScript or the like to provide two means by which the Shared Internet Storage Resource of the present invention may be achieved. The first is a JavaScript object which may be transmitted to a browser program running on the user's computer. Such browsers may include ones that are well known, including Netscape® Communicator and Microsoft® Internet Explorer. Alternatively, a stand-alone application may be installed and stored upon the user's computer. This standalone application serves to intermediate the user commands with the web server and ultimately the metadatabase in the Internet storage device."

As applicant pointed out before that the combination of O'Brien, Jhingan and Hochmuth have failed to disclose the wireless device, the wireless communication media and links, and failed to disclose a server computer providing storage space to the wireless device, thus also failed to disclose the wireless device executing a web browser through which a subscriber thereof accesses a storage space thereof for retrieving therefrom or storing a file therein. Therefore, the claim 75 and 83 are patentable over the combination of combination of O'Brien, Jhingan and Hochmuth a request for withdrawing the claims rejections is respectively submitted.

Conclusion:

The remarks made above have clearly indicated that the combination of O'Brien, Jhingan and Mochmuth has failed to disclose the major subject matters of the instant application. Therefore, all independent claims 31 and 33 are patentable over the combination of O'Brien, Jhingan and Mochmuth. Further all claims depending on the independent claims 31 and 33 shall be patentable as matter of the patent law (See Jenric/Pentron, Inc. v. Dillon Co., 205 F. 3d 1377, 1382 (Fed. Cir. 2000).). Thus, the withdrawing all 35 USC 103 rejections from the Office Action of 07/26/2011 is respectively requested.

4: Summery:

Applicant believes that the proposed amended claims and the remarks made above have fully overcome the rejections made in Office Action on 07/26/2011 and the instant application are in condition for allowance. Therefore, the issuance of a formal notice of allowance at an earlier date is respectfully requested.

Applicant also very appreciates the Office Action for carefully examining the present application and if a telephone conference would facilitate the prosecution of this application, the applicant Sheng Tai (Ted) Tsao can be reached at (408) 813-0536 and at 408-251-0864. Please also forward the corresponding materials to inventor's address of 2979 Heidi Drive, San Jose, CA 95132.

Respectfully submitted,
Date: 08/31 /2011

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
SERIAL NO.:	10/726,897 Confirmation No. 4178
FILING DATE:	12/04/2003
TITLE:	The Use of Wireless Devices' External Storage
EXAMINER:	Chankong, Dohm
ART UNIT:	2452

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

RCE For Responding To The Final Office Action Of 07/26/2011

Dear Sir/Madam:

This is a request for continuing examination in response to the final Office Action of 07/26/2011 for the application 10/726,897.

The amendment to the claims is based on claims submitted on 06/16/2011 and can be found in the original specification and drawings filed on 12/04/2003. The amendment includes canceling additional claims 74, 82, and 85 and adding new claims 86 – 89. The total number of claims is 22 including independent claims 31, 33, and 86. The specification is also amended to meet the 312 amendment requirement, there is no new matter being introduced. Therefore, the entry for the amended specification and claims and an earlier allowance of the claims is respectively submitted.

Thanks for your help & Respectively Submitted

09/23/2011

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Amendment in the claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

1 – 30 (Canceled)

31. (*Currently Amended*) A method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server computer a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device ;

creating a file system for the storage space allocated for the wireless device ;

providing a link for the wireless device to access the storage space and access world wide web; and

updating the file system whenever a user of the wireless device performs operations to the storage space, wherein the wireless device includes a function of making or receiving a cellular phone call.

32. (Canceled)

33. (*Currently Amended*) A system for expanding storage capacity of a plurality of wireless devices, the system comprising:

a server computer configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless device;

provide a link for the each of the wireless device to access the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices; and

the plurality of the wireless devices, wherein each of the wireless devices is configured and allowed to access world wide web and access the storage space allocated for the each of the wireless devices, and wherein the each of the wireless devices includes a function of making or receiving a cellular phone call.

34 – 68 (Canceled)

69. (*Previously Presented*) The method as recited in claim 31, wherein the operations to the storage space include creating from the wireless device a folder in the storage space.

70. (*Currently Amended*) The method as recited in claim 69, wherein the operations to the storage space include deleting, moving, ~~copying~~ or renaming a file being stored in the storage space.

71. (*Currently amended*) The method as recited in claim 31, wherein the link ~~is wireless~~ comprises a combination of wireless and wired communication links.

72. (*Previously Presented*) The method as recited in claim 31, wherein said creating a file system for the storage space comprises partitioning a storage device to create the storage space according to the predefined capacity.

73. (*Currently Amended*) The method as recited in claim 71, further comprising:
providing a console for allowing an administrator of a service provider to allocate the storage space for a subscriber of the wireless device, wherein the service provider provides services for the wireless device.

74. (*canceled*).

75. (*Currently Amended*) The method as recited in claim 31 ~~74~~, wherein the wireless device executes a web browser through which the subscriber accesses the storage space for retrieving a file therefrom or storing a file therein.

76. (*Currently Amended*) The method as recited in claim 75 ~~31~~, further comprising facilitating to store a file being downloaded from a website directly into the storage space instead of downloading the file into the wireless device itself.

77. (*Currently Amended*) The method as recited in claim 76, wherein said facilitating to store a file being downloaded from a website directly into the storage space comprises:
obtaining downloading information for the file;
caching the downloading information in the wireless device; and
causing the server computer in accordance with the downloading information to download the file directly into the storage space.

78. (*Previously Presented*) The system as recited in claim 33, wherein the operations to the storage space include creating from the each of the wireless devices a folder in the storage space.

79. (*Currently Amended*) The system as recited in claim 78, wherein the operations to the storage space include deleting, moving, ~~copying~~ or renaming a file being stored in the storage space.

80. (*Currently Amended*) The system as recited in claim 33, wherein the link ~~is wireless~~ comprises a combination of wireless and wired communication links.

81. (*Currently Amended*) The system as recited in claim 80, wherein the server computer is further configured to provide a console for allowing an administrator of a service provider to allocate the storage space for a subscriber of the one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Canceled*)

83. (*Currently Amended*) The system as recited in claim 82, wherein the each of the wireless device executes a web browser through which a subscriber thereof accesses a storage space thereof for retrieving a file therefrom or storing a file therein.

84. (*Currently Amended*) The system as recited in claim 33, wherein the each of the wireless devices further is facilitated to allow downloading a file from a website

directly into the storage space instead of downloading the file into the wireless device itself.

85. (*Canceled*)

86. *(Newly Added)* A computer program product, stored in a non-transitory computer-readable medium having a computer readable program code embodied therein, said computer readable program code comprising program instructions adapted to be executed for implementing expanding storage capacity of a plurality of wireless devices, the computer program product comprising:

program instructions for allocating via a server computer a storage space of a predefined capacity for each of the wireless devices, the storage space being remotely located with respect to the each of the wireless devices,

program instructions for creating a file system for the storage space allocated for the each of the wireless devices;

program instructions for providing a link for the each of the wireless devices to access the storage space and access world wide web,

wherein the link comprises a combination of wireless and wired communication links; and

program instructions for the server computer updating the file system whenever a user of the each of the wireless devices performs operations to the storage space,

wherein the each of the wireless devices executes a web browser through which the user is allowed to create a folder in the storage space and to access the storage space for retrieving a file therefrom or storing a file therein, and

wherein the each of the wireless device includes a function of making or receiving a cellular phone call.

87. (*Newly Added*) The program product of claim 86 further comprising program instructions for the each of the wireless devices operatively coupling to the server computer to download a file from a remote web site into the storage space directly instead of loading the file into the each of the wireless devices itself.

88. (*Newly Added*) The program product of claim 86 further comprising program instructions for the server computer providing a console for allowing an administrator of a service provider to allocate the storage space for a subscriber of the one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

89. (*Newly Added*) The program product of claim 86, wherein the operations to the storage space include deleting, moving, or renaming a file being stored in the storage space.

The Use of Wireless Devices' External Storage

~~**By: Sheng (Ted) Tai Tsao**~~
~~**11/19/2003**~~

~~Field of the Invention~~

Cross Reference to Prior Application

This invention is ~~the~~ a continuation of the previous ~~invention,~~ application 10/713,904 which is converted on 06/23/2003 from provisional application ~~number~~ 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System" filed on 08/06/2002 in the name of same inventor[[,]]; and ~~where the claim 20 item a), b), d), claim 30 item b), and together with claim 36 represent an invention of using storage of a server system as the external storage for wireless devices. This invention focuses on how can a wireless device user actually use external storage. Specially it focus on how can a wireless device to download data to its external storage, which its principle has preliminary described in claim 19) of~~ the previous ~~invention,~~ application 10/713,905 which is converted on 06/23/2002 from provisional application ~~number~~ 60/402,626 of "IP Based Distributed Virtual SAN"~~, to transmit data in wireless environment~~ filed on 08/12/2002 in the name of the same inventor.

Field of the Invention

This invention focuses on how a wireless device can actually use external storage provided by a storage server. This invention also includes how a wireless device can download data to its external storage.

Background Information

~~a)~~ Terminology:

The Internal Storage of a System:

The storage media such as hard disk drives, memory sticks, memory etc., is connected to a system directly through bus or a few inches of cable. Therefore, the storage media actually is a component of [[a]] the system in an ~~same~~ enclosure.

The External Storage of a System:

The external storage media is not a component of [[a]] the system in [[a]] the same enclosure. Therefore, they ~~has~~ have to be connected through a connecting medium (e.g. a ~~longer~~ cable) such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or such as wireless ~~mcdia~~ medium and etc.. The storage media of an external storage could be magnetic hard disk drives, solid ~~satc~~ state disk, optical storage drives, memory card, etc. and could be in any form such as Raid[[,]] which usually consists of a group of hard disk drives.

The Storage Partition, its Volumes, and the Corresponding File System:

To effectively use ~~the~~ storage system, ~~the~~ each storage device usually needs to be partitioned into small volumes. After the partition, each of the volumes can be used to establish a file system[[s]] on it. To simplify the discussion herein, the term of the storage volume, its corresponding file system, and the term of the partition of [[a]] the storage device are often used without differentiation ~~in this invention~~.

CCDSVM:

It is an abbreviation for a central controlled distributed scalable virtual machine system. The CCDSVM allows a control management station to control a group of systems and provide distributed services to a client system on the [[in]] Internet, the Intranet, and an LAN environment.

ISP & ASP:

The ISP refers to Internet service provider and the ASP refers to application service provider.

~~b)~~ Figures:

Fig. 1~~: This~~ illustrates an embodiment of the instant application, the Fig. 1 is the same ~~figure~~ as Fig. 1 of the previous application of the "Concurrent Web Based Multi-task Support for Control Management System" with an exception of ~~renaming~~ replacing a console host ~~as~~ with a wireless device.

Fig. 2~~: This~~ is the same ~~figure~~ as Fig. 1 of the above except that it shows ~~the~~ a more detailed ~~details of~~ storage system controlled by ~~the~~ a server. In addition, multiple wireless devices are presented to access the storage system.

Fig. 3~~: This figure~~ shows ~~the~~ a scheme of a wireless device downloading contents from an ISP/ASP or other web sites to ~~the~~ an external storage ~~of this~~ allocated for the wireless device.

Fig. 4~~: This~~ is ~~the same figure as~~ similar to the Fig. 1 of the previous application of the "IP Based Distributed Virtual SAN" with exception that each IP

storage server ~~provide~~ provides a file system as external storage for each of the wireless devices instead of ~~provide~~ providing IP based virtual SAN service. ~~Also, each host actually is a wireless device~~.

~~c) Assumptions:~~

Unless specified, the programming language[[,]] and the protocols used by each software modules of instant application, and the computing system used ~~described~~ in this invention are assumed to be the same as described in the previous patent[[s]] ~~submission~~ applications.

In addition, in the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

Brief Description of the Invention

Today the wireless users commonly face ~~the~~ a problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which are usually limited to 256MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple gigabytes (GB) of storage for their wireless devices as well as allowing the users to use the GB storage for their multimedia applications, the storage ~~on~~ of a server can be used as the external storage for the wireless devices. This technology has been ~~claimed~~ briefly introduced in the previous ~~two~~ parent patent[[s]] applications ~~submission by the same author~~.

Now ~~we can~~ let us examine how ~~does~~ the external storage can actually be used by the wireless devices. First, ~~We can~~ let each server unit (e.g. the server 3 of the Fig. 2) partitions its storage system into ~~such way that each~~ volume[[s]] and each of the volumes will have multiple[[-]]GB in size. Therefore, each user ~~from a web-browser of any~~ of the wireless devices can be exclusively ~~be~~ assigned and ~~exclusively~~ access a specific storage

volume ~~on a server unit~~. For example, if we need to provide each user a 4GB ~~of~~ storage space, then a 160GB disk drive can support 40 users[[']]. Therefore, [[A]] a 4096GB storage system on [[a]] the server unit can support a total of 1024 wireless devices for users. Further, any data on the wireless device can be transmitted to an assigned storage volume~~s on a server unit~~. In addition, the user ~~on~~ of the wireless device also can download the multimedia data from ~~any~~ an ISP or ASP to the assigned storage volume[[s]] of a designated server unit through out-band approach ~~(~~shown in Fig. 3~~)~~. Finally, the user can use ~~their~~ a web-browser, which has a functionality of invoking embedded video or music, to enjoy ~~their~~ his/her stored multimedia contents.

These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures ~~where~~:

Description of the Drawings

Referring now to Fig. 1[[:]], ~~This figure~~ it demonstrates a configuration comprising a ~~the~~ network ~~connection between~~ connecting a wireless device and a server.~~:~~ ~~where~~

~~a)~~ In the Fig. 1, Net (2) represents a communication link, which may be combined with wireless and ~~non-wireless~~ wired connection media and guarantee that the communication packets can be sent/received between the wireless device and the server. It is also assumed that the net (2) representing an communication infrastructure is built up in such way that ~~the~~ a user ~~from web-browser~~ of a wireless device can access and browse any web-site on the Internet, the Intranet, or a local area network (LAN).

~~b)~~ ~~As described in previous patents submission~~ In Fig. 1, the console support software (5) on the server (3) can be configured to support web-based multi-tasks for the user[[s]] ~~on web-browser (8)~~ of the wireless device (1) via a web browser 8. Further, the user ~~on the web-browser (8)~~ of the wireless device is able to perform creating structured layered files/~~directory~~ directories or folders, and perform data management operations, such as delete, move, copy, rename for data files or folders/directories and etc.. on ~~the~~ an assigned storage volume [[of]] associated with the server (3).

~~c) As described in previous patents submission~~ In addition, the other software modules (9) of the wireless device (1) is ~~also capable~~ configured to send data to or receive data from the other service modules (7) ~~of~~ running on the server (3) via communication link (2) through a suitable IP or non-IP based protocol. The data ~~file~~ being sent cold be a digital photo picture, a message and etc..

~~d)As described in previous patents submission~~ Also, the console supporting software (5) of the server (3) and the other software modules (9) of the wireless device (1) can be implemented with any suitable languages such as C, C++, Java, etc. depending on the implementation.

~~e)As described in previous patents submission~~ Besides, the web-browser (8) of the wireless device (1) can be implemented any suitable software~~, which~~. The web browser is configured ~~is capable~~ to communication with web server software (4) on the server (3) ~~or~~ with any other web server through the HTTP protocol.

On the other hand, Fig. 2~~: This figure~~ has demonstrated ~~how does~~ that the storage system 10 of a server 3 can be allocated ~~assigned~~ to multiple wireless devices ~~as their external storage~~.

~~a) As described in the previous patents submission,~~ The storage system (10) of the server (3) can be partitioned into multiple storage volumes (11) by administration staff through a web-console (13) of a ~~web~~ console host (12).

~~b)~~ The storage system (10) of the server (3) can be partitioned in such way that each of the wireless devices can be ~~assigned~~ allocated with a storage volume ~~of~~ having a desired size, ~~which can be best supported by~~ therefore, the server 3 can support ~~for~~ maximum numbers of the wireless devices.

~~c) As described in previous patents submission~~ In addition, the storage connection media could be any kind[[s]] of cables, such as SCSI cable, IP cable, Fiber cable etc. or could be wireless communication media. The storage system itself could be various types.

~~d) It~~ Finally, it assumes that the storage system 10 can be accessed by each of the wireless devices through IP or non-IP based network and protocols.

Fig. 3~~: This figure~~ has demonstrated ~~how~~ that a user from a web-browser (8) on a wireless device[[s]] (1) can download data from a known web-site (12) to his/her ~~assigned~~ allocated external storage (10) ~~of~~ on the server (3). The dash-lined path (a) represents a communication channel between the wireless device (1) and ~~any~~ a remote downloading web-site (12)~~, which~~ that provides ~~the~~ downloading contents ~~for web download~~. The dash-lined path (b) represents a communication channel between the wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between the server 3 ~~wireless devices (1)~~ and the remote web-server (12)~~, which provides download contents~~.

The Detailed Description of the Invention

~~1:~~ The Use of the External Storage ~~of~~ by the Wireless Device:

The Fig. 2 shows a simplified diagram of the wireless devices (1 of Fig. 2) using the external storage system (10 of Fig. 2) of [[a]] the server (3 of Fig. 2)~~, which will~~ for effectively ~~resolve~~ resolving the storage limitation problem ~~of~~ for the wireless devices (1 of Fig. 2).

- Partition storage volumes (Fig. 2)

With this invention, the entire storage (10 of Fig. 2) on [[a]] the server (3 of Fig. 2) needs to be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB for each[[,]] ~~which~~ volume. This will allow the server 3 to serve maximum number of the wireless devices (1 of Fig. 2). With the web console support software (5 of Fig. 2) of the server (3 of Fig. 2), ~~the~~ tasks of partitioning the storage system 10 can be done through a web-console (13 of Fig. 2) on a console host (12 of Fig. 2) by an administrative staff.

In order to support ~~such~~ storage partitioning, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of the console host (12 of Fig. 2). ~~This~~ The storage information ~~including the~~ includes each storage device's name~~, storage~~ and total size etc.. Second, based on the received storage information the administration staff on the console host (12 of Fig. 2) can use a web-console (13 of Fig. 2) to fill out and [[to]] send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from the web-console (13 of Fig. 2) of the console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition~~,~~

~~which~~ to divide[[s]] the entire storage into multiple small volumes. Finally, for each small storage volume, a corresponding file system could be built up.

- Assign storage volumes (Fig. 2):

Each of the storage volumes together with its corresponding file system (11 of Fig. 2) [[of]] on the storage system (10 of Fig. 2) [[on]] of the server (3 of Fig. 2) needs to be exclusively ~~assigned~~ allocated and exported to a ~~given~~ specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) [[on]] of the server (3 of Fig. 2).

- Data and storage volume management (Fig. 2)

~~1)~~ With the support of the console support software modules (5 of Fig 2) of the server ~~system~~ (3 of Fig. 2), the user ~~on web-browser (8 of Fig. 2)~~ of the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 setup ~~the~~ folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user ~~on web-browser (8 of Fig. 2)~~ of the wireless device (1 of Fig. 2) can via the web-browser 8 of Fig. 2 perform all data management operations such as delete, copy, move, rename etc. ~~on that~~ for file system.

In order to support such data management on the external storage (10 of Fig. 2) ~~from web-browser (8 of Fig. 2) of~~ allocated to the wireless device (1 of Fig. 2) via the web-browser 8 of Fig. 2, first the console support software modules (5 of Fig. 2) of the server ~~system (~~3 of Fig. 2~~)~~ must communicate with the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2). Therefore, the user from the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to the console support software modules (5

of Fig. 2) of the server ~~system (~~3 of Fig. 2~~)~~. The[[se]] mentioned operations include establishing folder/directory, copying, moving, or reaming data file etc. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server ~~system (~~3 of Fig. 2~~)~~ actually perform[[s]] these operations ~~on~~ for the assigned file system of an allocated ~~assigned external~~ storage volume (11 of Fig. 2) on the server ~~system (~~3 of Fig. 2~~)~~.

- Store data from wireless device into external storage (Fig. 2)

To store the data such as digital photo pictures[[,]] or messages into the ~~assigned~~ file system on the allocated ~~external~~ storage (10 of Fig. 2) of [[a]] the server (3 of Fig. 2), the other software modules (9 of Fig. 2) of the wireless device (1 of Fig. 2) need to send these data to the other service modules (7 of Fig. 2) of the server (3 of Fig. 2) via communication link between them. Upon receiving the data, the other service modules (7 of Fig. 2) of the server (3 of Fig. 2) write these data to the ~~assigned~~ file system of the ~~assigned~~ allocated storage volume (11 of Fig. 2) ~~on server (3 of Fig. 2)~~ for the wireless device. The protocol used between these two communication entities could be either IP or non-IP based protocol.

- Download data from a remote web server site into ~~external~~ allocated storage volume (Fig. 3)

If a user of the wireless device (1 of Fig. 3) ~~user~~ wants to download a data from a remote web server (12 of Fig. 3) into the allocated ~~assigned~~ file system (11 of Fig. 3) of the ~~external~~ allocated storage (10 of Fig. 3) on the server (3 of Fig. 3), the following steps are required:

1) The user ~~from web-browser (8 of Fig. 3)~~ of the ~~a specific~~ wireless device (1 of Fig. 3) via a web-browser (8 of Fig. 3) accesses a remote downloading web

server site (12 of Fig. 3) ~~and~~ to obtain ~~the~~ information for the downloading via path (a) of Fig. 3. For example, [[to]] the user ~~get~~ accesses a web-page[[,]] which contains the data name for the downloading.

2) The other software modules (9 of Fig. 3) of ~~a specific~~ the wireless device (1 of Fig. 3) obtain[[s]] the downloading information, which becomes available in the cached web-pages on the wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the ~~download~~ web site (12 of Fig. 3).

3) The other software modules (9 of Fig. 3) of ~~a specific~~ the wireless device (1 of Fig. 3) send the obtained downloading information to other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) via path (b) of Fig. 3.

4) Upon receiving the downloading information from ~~a specific~~ the wireless device (1), the other service module (7 of Fig. 3) of the storage server (3 of Fig. 3) sends a web download request to ~~download~~ the web-site (12 of Fig. 3) via path (c) of Fig. 3 ~~based on download information obtained. It then~~ and receives the downloading ~~information~~ data streams from the web server of ~~download~~ the web-site (12 of Fig. 3).

5) Upon receiving ~~downloaded~~ downloading data streams, the other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write the[[se]] data streams ~~for the specific wireless device (1 of Fig. 3)~~ into the ~~assigned~~ allocated file system (11 of Fig. 3) on the server (3 of Fig. 3) for the wireless device (1 of Fig. 3).

- **Retrieve data from ~~external~~ allocated storage ~~of~~ for the wireless device**

1) If a web-browser (8 of Fig. 2) on a wireless device 1 of Fig. 2 has embedded video or music functionality, ~~the web-browser (8 of Fig. 2)~~ a user of [[a]] the wireless device (1 of Fig. 2) can ~~be~~ use[[d]] the browser to retrieve and play

~~those~~ multimedia data file such as video or music stored in the allocated ~~wireless device's external~~ storage volume (10 of Fig.2)~~, which actually~~ located on [[a]] the server (3 of Fig. 2).

2) If there is a need[[s]], the other software module (9 of Fig. 2) of the wireless device (1 of Fig. 2) also can retrieve data file from the allocated ~~assigned~~ file system of the ~~assigned~~ allocated storage volume (11 of Fig. 2) on the server (3 of Fig. 2).

- **Support external storage for a large number of the wireless devices**

If [[~~we~~]] there is a need to provide each user a 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on [[a]] the server unit can support 2024 user. Each of the server units only can efficiently support a limited size of the storage system. In order to support a large number of the wireless devices, ~~with external storage~~ such as for 500,000 ~~of them~~ wireless devices, a larger number of the servers ~~are~~ is required, in this case 250 servers is required. In order to let a larger number of the servers to effectively support the larger number of the wireless devices, an infrastructure like CCDSVM is desirable, which has been described in previous patent[[s]] applications ~~submission~~. With the CCDSVM the control management station can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

Electronic Patent Application Fee Transmittal

Application Number:	10726897
Filing Date:	04-Dec-2003
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Filer:	Sheng Tai Tsao
Attorney Docket Number:	

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	2202	2	26	52
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	2801	1	405	405
		Total in USD ($)		**457**

Electronic Acknowledgement Receipt	
EFS ID:	11041381
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	23-SEP-2011
Filing Date:	04-DEC-2003
Time Stamp:	20:21:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$457

RAM confirmation Number	14256
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment Submitted/Entered with Filing of CPA/RCE	Remark-on-OA-2.pdf	726343 aacf9432ff7114123caa57b70e9a1945a0bf43f1	no	16
Warnings:					
Information:					
2	Amendment Submitted/Entered with Filing of CPA/RCE	897claims-final.pdf	703263 5949eb77eb4c53535cf0722e94f1c0eed5d9d336	no	7
Warnings:					
Information:					
3	Amendment Submitted/Entered with Filing of CPA/RCE	897-spec-amend.pdf	524127 26d0946acd897eb25b1268681e909ee8829a0763	no	12
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	31289 6ee789ece00473770f47a3ba945318210ea23f70	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1985022		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/726,897	12/04/2003	

APPLICATION AS FILED – PART I

(Column 1) (Column 2) SMALL ENTITY ☒ OR OTHER THAN SMALL ENTITY

FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

(Column 1) (Column 2) (Column 3) SMALL ENTITY OR OTHER THAN SMALL ENTITY

AMENDMENT	09/23/2011	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DEBORAH NASH/

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/04/2003	Sheng (Ted) Tsao		4178

7590 07/26/2011

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
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EXAMINER	
CHANKONG, DOHM	
ART UNIT	PAPER NUMBER
2452	

MAIL DATE	DELIVERY MODE
07/26/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/726,897	TSAO, SHENG (TED)	
	Examiner	Art Unit	
	DOHM CHANKONG	2452	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31,33 and 69-85* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31,33 and 69-85* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This final rejection is in response to Applicant's amendment filed on 4/18/2011 and supplemental amendments filed on 5/31/2011 and 6/16/2011. In the most recent amendment, Applicant amends claims 31 and 33, cancels claims 32 and 34-68, previously cancelled claims 1-30, and adds claims 69-85. Accordingly, Applicant presents claims 31, 33, and 69-85 for further examination.

I. RESPONSE TO ARGUMENTS

Applicant's amendment to claims 31 and 33 does not overcome the *O'Brien* reference. See the following rejections for claim mapping and analysis.

II. CLAIM REJECTIONS – 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A. Claims 31, 33, 72, 76, 77, 84, and 85 are rejected under 35 U.S.C. § 102(b) as being anticipated by *O'Brien* et al., U.S. Patent No. 6.351.776 ["*O'Brien*"].

Claims 31 and 33

As to claim 31, *O'Brien* discloses a method for expanding storage capacity of a wireless device, the method comprising:

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device [column 3 «lines 8-17»:

disclosing Internet hard drive space that is allocated to an individual user | column 3 «lines 26-28»: disclosing that individual storage areas are allocated in "limited allotments" (i.e., predefined capacity)] ;

creating a file system for the storage space allocated for the wireless device [Fig. 2 «item 204»: disclosing the use of a file system];

providing a link for the wireless device to access the storage space [column 2 «lines 17-25»: disclosing the web page have URL information (i.e., file path and IP address of the remote web site)]; and

updating the file system whenever a user of the wireless device performs operations to the storage space [column 9 «lines 3-5»: disclosing operations are allowed to be performed on the file system | column 9 «lines 59-62» | column 12 «lines 30-53»].

Claim 33 is rejected for at least the same reasons set forth for claim 31.

Claim 72

O'Brien discloses said creating a file system for the storage space comprises partitioning a storage device to create the storage space according to the predefined capacity [column 3 «lines 26-28»].

Claims 76 and 84

O'Brien discloses facilitating to store a file being downloaded from a website directly into the storage space instead of downloading the file into the wireless device itself [column 4 «lines 7-10»: disclosing the internet-to-internet file transfer bypasses the user's device because the files are saved to the user's Xdrive].

Claims 77 and 85

O'Brien discloses wherein said facilitating to store a file being downloaded from a website directly into the storage space comprises:

obtaining downloading information for the file [Fig. 11 «item 1114» | column 18 «lines 33-39»: disclosing the user has the URL which requires that the system (i.e., the user's computer) had obtained the URL in a prior step];

transmitting the downloading information cached in the wireless device to the server [Fig. 11 «item 1114» | column 18 «lines 33-34»: disclosing that the user submits the URL information to the Xdrive system]; and

causing the server in accordance with the downloading information to download the file directly into the storage space [column 4 «lines 7-10»: disclosing the internet-to-internet file transfer bypasses the user's device because the files are saved to the user's Xdrive].

III. CLAIM REJECTIONS – 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

A. Claims 69-71 and 78-80 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *O'Brien* in view of *Jhingan* et al., U.S. Patent Publication No. 20020133597 ["*Jhingan*"].

Claims 69 and 78

O'Brien as modified by *Jhingan* discloses the operations to the storage space include creating from the wireless device a folder in the storage space [*Jhingan*, 0057: disclosing enabling a user to create a folder on the server (i.e., storage space)].

It would have been obvious to one of ordinary skill in the art to have modified *O'Brien*'s online storage system to include the folder creation functionality described above in *Jhingan*. Such a modification to *O'Brien*'s system is an example of using a known technique (*Jhingan*'s system allows users to create folders in the storage space) to improve similar systems (*O'Brien*'s online Xdrive storage space) in the same way. *See* MPEP § 2143.

Claims 70 and 79

O'Brien as modified by *Jhingan* discloses the operations the storage space include deleting, moving, copying, or renaming a file being stored in the storage space [*O'Brien*, column 8 «lines 39-42»].

Claims 71 and 80

O'Brien as modified by *Jhingan* discloses the link is wireless [*Jhingan*, 0043: disclosing well known wireless devices such as a notebook or mobile phone].

B. Claims 73-75 and 81-83 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *O'Brien* and *Jhingan*, in further view of *Hochmuth* et al., U.S. Patent No. 7500069 ["*Hochmuth*"].

Claims 73 and 81

O'Brien as modified by *Jhingan* and *Hochmuth* discloses providing a console for an administrator of a service provider to allocate the storage space for a subscriber of the wireless device, wherein the service provider provides services for the wireless device [*Hochmuth*, column 8 «lines 8-17»: disclosing providing a GUI to an administrator for allocating storage to clients | column 11 «lines 1-4»: providing a desired capacity for the storage].

It would have been obvious to one of ordinary skill in the art to have modified *O'Brien*'s Xdrive system to include an administrative GUI as taught in *Hochmuth*. Such a modification to *O'Brien*'s system is an example of using a known technique (*Hochmuth*'s administrative GUI to allocate space to clients) to improve similar systems (*O'Brien*'s online Xdrive storage space) in the same way. *See* MPEP § 2143.

Claims 74 and 82

O'Brien as modified by *Jhingan* and *Hochmuth* discloses the wireless device includes a function of making or receiving a cellular phone call [*Jhingan*, 0043: disclosing a mobile phone].

Claims 75 and 83

O'Brien as modified by *Jhingan* and *Hochmuth* discloses the wireless device executes a web browser through which the subscriber accesses the storage space for retrieving a file therefrom or storing a file therein [*O'Brien*, column 3 «lines 45-56»].

IV. CONCLUSION

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOHM CHANKONG whose telephone number is (571)272-3942. The examiner can normally be reached on Monday to Friday [10 am - 6 pm].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thu Nguyen can be reached on (571)272-6967. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DOHM CHANKONG/
Primary Examiner, Art Unit 2452

Notice of References Cited	Application/Control No. 10/726,897	Applicant(s)/Patent Under Reexamination TSAO, SHENG (TED)	
	Examiner DOHM CHANKONG	Art Unit 2452	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2002/0133597	09-2002	Jhingan et al.	709/228
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	Art Unit
	DOHM CHANKONG	2452

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
east text search	3/16/11	DC
updated east text seach	7/21/11	DC

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S47	14	(US-20100005153-$ or US-20020059621-$ or US-20030191716-$ or US-20020123336-$ or US-20050210120-$). did. or (US-6735623-$ or US-6714968-$ or US-7650621-$ or US-6356941-$ or US-7506034-$ or US-6839743-$ or US-7894803-$ or US-6351776-$ or US-6985927-$).did.	US-PGPUB; USPAT	OR	ON	2011/07/19 20:33
S49	2	((US-20100005153-$ or US-20020059621-$ or US-20030191716-$ or US-20020123336-$ or US-20050210120-$). did. or (US-6735623-$ or US-6714968-$ or US-7650621-$ or US-6356941-$ or US-7506034-$ or US-6839743-$ or US-7894803-$ or US-6351776-$ or US-6985927-$).did.) and creat$3 near3 folder	US-PGPUB; USPAT	OR	ON	2011/07/19 20:34
L1	102	(internet web) near3 (drive storage) and (creat$3 near3 folder) and wireless$2 and @ay<"2004"	US-PGPUB; USPAT	OR	ON	2011/07/21 17:29
L3	9	("20020095547" | "5926834" | "6073209" | "6304881" | "6351776" | "6449688" | "6735623" | "6745207" | "6745303").PN. OR ("6839743").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 17:31

L2	32	("5544320" | "5696901" | "5771354" | "5861883" | "5901228" | "5940823" | "5956490" | "5987454" | "5987506" | "6003030" | "6009427" | "6009433" | "6014651" | "6021433" | "6035325" | "6049877" | "6061798" | "6119229" | "6128624" | "6128627" | "6138158" | "6151601" | "6154738" | "6173318" | "6175842" | "6321254").PN. OR ("6985927").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/07/21 17:31
L4	16	(internet web remote $2) near3 (drive storage) and (creat$3 near3 folder) and wireless$2 and @ay<"2004" and (assign$5 allocat$6) with (space storage capacity) with user	US-PGPUB; USPAT	OR	ON	2011/07/21 17:32

EAST Search History (Interference)

< This search history is empty>

7/21/2011 5:57:23 PM
H:\Workspaces\10726897.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.
SERIAL NO.:	10/726,897 Confirmation No. 4178
FILING DATE:	12/04/2003
TITLE:	The Use of Wireless Devices' External Storage
EXAMINER:	Chankong, Dohm
ART UNIT:	2452

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Second Supplement Amendment In Response To The Office Action Of 03/23/2011

Dear Sir/Madam:

This is Second supplement amendment in response to the non-final Office Action of 03/23/2011 for the application 10/726,897.

The amendment to the claims is based on claims submitted on 05/31/2011 and can be found in the original specification and drawings filed on 12/04/2003. The claim 1-30, 32, 34 – 68 are canceled and new claims 69 – 85 are added. There is no fee due since same amount of claims are presented. Also, there is no new matter being introduced. Therefore, the entry for the amended claims and an earlier allowance of the claims is respectively submitted.

Thanks for your help & Respectively Submitted

06/15/2011

//Shanegtai Tsao//
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2979 Heidi Drive,
San Jose, CA 95132
408-813-0536

Amendment in the claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

1 – 30 (Canceled)

31. (*Currently Amended*) A method ~~of out-band downloading a file from a web-site to a targeted system~~ for expanding storage capacity of a wireless device, the method comprising:

~~retrieving, by a first wireless communication device, a web page from a remote web site served by a web server computer, the web page comprising information of at least a first file that is available for downloading,~~

~~sending, by the first wireless communication device, the information of the first file available for downloading to an associated computer, wherein the information of the first file available for downloading is obtained from the web page cached in the first wireless communication device,~~

~~requesting, by the associated computer, for downloading the first file from the web server computer, and~~

~~transmitting, by the web server computer, the first file to the associated computer in response to receive the request for downloading the first file from the associated computer, and~~

~~storing, by the associated computer, received downloading data stream of the first file into a first external storage space exclusively assigned to the first wireless communication device.~~

allocating via a server a storage space of a predefined capacity for the wireless device, the storage space being remotely located with respect to the wireless device;

creating a file system for the storage space allocated for the wireless device;

providing a link for the wireless device to access the storage space; and

updating the file system whenever a user of the wireless device performs operations to the storage space.

32. (Canceled)

33. (Currently Amended) A system ~~provides external~~ for expanding storage capacity of a plurality of [[for]] wireless devices, the system ~~that~~ comprising[[es]]:

~~at least a first web site served by a first web server computer on world wide web a, the first web site providing file downloading services via providing at least a first web page comprising information [[for]] of at least a first file that is available for downloading,~~

~~at least a first wireless communication device,~~

~~the first wireless communication device configured for accessing world wide web, the accessing including to access the first web page of the first web site, wherein the first web page upon being accessed is cached in the first wireless communication device; and~~

~~an associated computer providing at least a first storage space to at least the first wireless communication device as an exclusive accessible external storage space of the first wireless communication device across a communication network; and~~

~~wherein said the first wireless communication device operatively coupling to the associated computer for providing a first user of the first wireless communication device accessing the first storage space, the accessing including downloading at least the first file from the first web site directly into the first storage space instead of immediately downloading the first file into the first wireless communication device itself.~~

a server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a file system for the storage space allocated for the each of the wireless device;

provide a link for the each of the wireless device to access the storage space; and

update the file system whenever a user of the each of the wireless devices performs operations to the storage space, wherein the storage space being remotely located with respect to the ach of the wireless devices; and

the wireless devices, wherein each wireless device configured to access world wide web and access the storage space allocated for the each wireless device.

34 – 68 (Canceled)

69. *(Newly added)* The method as recited in claim 31, wherein the operations to the storage space include creating from the wireless device a folder in the storage space.

70. (*Newly added*) The method as recited in claim 69, wherein the operations to the storage space include deleting, moving, copying or renaming a file being stored in the storage space.

71. (*Newly added*) The method as recited in claim 31, wherein the link is wireless.

72. (*Newly added*) The method as recited in claim 31, wherein said creating a file system for the storage space comprises partitioning a storage device to create the storage space according to the predefined capacity.

73. (*Newly added*) The method as recited in claim 71, further comprising: providing a console for an administrator of a service provider to allocate the storage space for a subscriber of the wireless device, wherein the service provider provides services for the wireless device.

74. (*Newly added*) The method as recited in claim 73, wherein the wireless device includes a function of making or receiving a cellular phone call.

75. (*Newly added*) The method as recited in claim 74, wherein the wireless device executes a web browser through which the subscriber accesses the storage space for retrieving a file therefrom or storing a file therein.

76. (*Newly added*) The method as recited in claim 31, further comprising facilitating to store a file being downloaded from a website directly into the storage space instead of downloading the file into the wireless device itself.

77. (*Newly added*) The method as recited in claim 76, wherein said facilitating to store a file being downloaded from a website directly into the storage space comprises:

obtaining downloading information for the file;

transmitting the downloading information cached in the wireless device to the server; and

causing the server in accordance with the downloading information to download the file directly into the storage space.

78. (*Newly added*) The system as recited in claim 33, wherein the operations to the storage space include creating from the each of the wireless devices a folder in the storage space.

79. (*Newly added*) The system as recited in claim 78, wherein the operations to the storage space include deleting, moving, copying or renaming a file being stored in the storage space.

80. (*Newly added*) The system as recited in claim 33, wherein the link is wireless.

81. (*Newly added*) The system as recited in claim 80, wherein the server is further configured to provide a console for an administrator of a service provider to allocate the storage space for a subscriber of the one of the wireless devices, wherein the service provider provides services for the one of the wireless devices.

82. (*Newly added*) The system as recited in claim 80, wherein each of the wireless devices includes a function of making or receiving a cell phone call.

83. (*Newly added*) The system as recited in claim 82, wherein each of the wireless device executes a web browser through which a subscriber thereof accesses a storage space thereof for retrieving a file therefrom or storing a file therein.

84. (*Newly added*) The system as recited in claim 33, wherein each of the wireless devices further is facilitated to allow downloading a file from a website directly into the storage space instead of downloading the file into the wireless device itself.

85. (*Newly added*) The system as recited in claim 84, wherein the wireless device obtaining downloading information for the file, transmitting the downloading information cached in the wireless device to the server to cause the server in accordance with the downloading information to download the file directly into the storage space

Electronic Acknowledgement Receipt

EFS ID:	10317646
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	16-JUN-2011
Filing Date:	04-DEC-2003
Time Stamp:	11:59:58
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	897-2nd-suplemental.pdf	513438 0fb60a2e17cb48a7c6ecd4bb0478e391b478dc8b	no	7
Warnings:					
Information:					
		Total Files Size (in bytes):	513438		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/726,897	12/04/2003	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	06/16/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DIANA BATES/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.

SERIAL NO.: 10/726,897 Confirmation No. 4178

FILING DATE: 12/04/2003

TITLE: The Use of Wireless Devices' External Storage

EXAMINER: Chankong, Dohm

ART UNIT: 2452

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Supplement Amendment In Response To The Office Action Of 03/23/2011

Dear Sir/Madam:

This is supplement amendment in response to the non-final Office Action of 03/23/2011 for the application 10/726,897, and this supplement amendment is based on first amendment submitted on 04/18/2011.

The amendment to the claims can be found in the original specification and drawings filed on 12/04/2003, and there is no new matter being introduced. Therefore, the entry for the amended claims and an earlier allowance of the claims is respectively submitted.

Thanks for your help & Respectively Submitted

05/31/2011

//Shanegtai Tsao//
Sheng Tai (Ted) Tsao
2979 Heidi Drive,
San Jose, CA 95132
408-813-0536

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claim

Claims 1 -30 canceled

31. (Currently Amended) A method of supporting a device downloading a file from a web-site into an external storage space comprising:

~~assigning a fist wireless communication device to access a first external storage space provided by an associated computer across a communication network;~~

retrieving, by a first wireless communication device, a web page from a remote web site served by a web server computer, the web page comprising information of at least a first file that is available for downloading;

sending, by the first wireless communication device, the information of the first file available for downloading to an associated computer, wherein the information of the first file available for downloading is obtained from the web page cached in the first wireless communication device;

requesting, by the associated computer, for downloading the first file from the web server computer; and

transmitting, by the web server computer, the first file to the associated computer in response to receive the request for downloading the first file from the associated computer; and

storing, by the associated computer, received downloading data stream of the first file into a first external storage space exclusively assigned to the first wireless communication device.

~~instructing the fist wireless communication device's a web-browser to retrieve a web page from a remote web site served by a web server computer, the web page comprising a file information available for downloading, and to instructing the fist wireless communication device send[[ing]] the file information for the downloading to the associated computer via obtaining the file information from the web page cached in the first wireless communication device, and~~

~~instructing the associated computer to~~

~~receive the file information for downloading from the first wireless communication device,~~

~~send a request to the remote web server computer for downloading the file,~~

~~receive the downloading data stream for the file from the remote web-site server computer, and~~

~~store the file directly into the first external storage space assigned to the first wireless communication device.~~

32. (Currently Amended) The method of claim 31 further includes:

providing a user of the first wireless communication device via ~~the~~ web ~~browser~~ to access at least [[a]] the first file stored on the assigned first ~~external~~ storage space on the associated computer ~~across the communication network~~, wherein the first file is at least one of a streaming video file, a streaming musical file, or a digital picture file.

33. (Currently Amended) A system supporting ~~for~~ a device downloading files ~~for a plurality of wireless communication devices~~ into an external storage space, the system comprising:

at least a first web site served by a first web server computer ~~serving a web site~~ on world wide web ~~a communication network~~, the first web site providing file downloading services via providing at least a first web page comprising ~~at least an~~ information [[for]] of at least a first file that is available for downloading;

at least a first wireless communication device,

the first wireless communication device ~~comprising a web browser for the wireless communication device~~ configured for accessing world wide web, the accessing including to access ~~(retrieve) said~~ the first web page of ~~said~~ the first web site ~~for downloading at least said file~~, wherein ~~said~~ the first web page upon being accessed[[ing]] is cached in the first wireless communication device; and

an associated computer providing at least a[[n]] first storage space to at least ~~said~~ the first wireless communication device as an exclusive accessible external storage space of ~~said~~ the first wireless communication device across ~~the~~ a communication network; and

wherein ~~said~~ the first wireless communication device operatively coupling[[ed]] to the associated computer for ~~controlling~~ providing a first user of ~~said~~ the first wireless communication device accessing the ~~assigned external~~ first storage space, the accessing including ~~controlling~~ downloading at least ~~said~~ the first file from ~~said~~ the first web site directly into the ~~assigned external~~ first storage space instead of immediately downloading the first file into the first wireless communication device itself.

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34 – 51 (Canceled)

52. (Currently Amended) The method of claim 31 further includes:

~~assigning~~ configuring the associated computer with at least a ~~second~~ storage space, each storage space ~~of the associated computer~~ exclusively assigned to a ~~second~~ wireless communication device[[,]] and allowing a user of the ~~second~~ wireless communication device web based accessing ~~to download at least a file from the web site directly into~~ the assigned ~~second~~ storage space, ~~instead of immediately~~ the accessing including to perform said downloading operation ~~the file into the second wireless communication device~~.

53. (Currently Amended) The system of claim 31 further comprises[[ing]]:

~~allowing each wireless communication device downloading at least a file directly from a second web site served by~~ providing at least a second web server computer serving a second web site for supporting the first user of the first wireless communication device downloading at least a file from the second web site into the ~~corresponding assigned external~~ first storage space ~~on the associated computer~~ instead of immediately downloading the file into the first wireless communication device.

54. (Currently Amended) The system of claim 33, wherein

said associated computer is configured with at least a storage device, each storage device being partitioned into at least a storage volume, and each storage volume being configured with a file system and be exclusively assigned to a wireless communication device as an external storage space.

55. (Currently Amended) The system of claim 33, wherein

said associated computer further provides a web user interface (hereinafter "UI") comprising information of the first storage space to be transmitted[[ing]] and

displayed[[ing]] ~~the assigned external storage space~~ into a web browser of ~~a corresponding~~ the first wireless communication device ~~via a web user interface that~~ ; and further allows the first user selecting at least a management option to perform data management task.

56. (Currently Amended) The system of claim 33 further comprising:

providing the first user of the first wireless communication device ~~via the~~ web based transferring file that includes ~~browse~~r transmitting ~~data~~ at least a file between the first wireless communication device and the ~~assigned external~~ first storage space on the associated computer.

57. (Currently Amended) The system of claim 33 further comprising:

providing the first user of the wireless communication device ~~via the~~ web based ~~browser to~~ managing the first ~~assigned external~~ storage space, the managing including creating folder structure and performing at least one of ~~that includes creating folder structure and performing data management for the stored files, the data management including at least one of~~ rename, copy, delete, or move operation[[ng]] ~~option.~~ for data object, wherein the data object includes file and folder.

58. (Currently Amended) The system of claim 33, wherein said downloading ~~a file a~~ further comprises[[ing]]:

the first wireless communication device retrieving the first web page from the first web site into the first wireless communication device, and

further ~~the wireless communication device~~ sending the information of ~~said~~ the first file available for downloading to the associated computer based on the information

obtained from ~~said~~ the first web page that is cached in the first wireless communication device.

59. (Currently Amended) The system of claim 58, wherein said ~~comprising~~:

~~the~~ associated computer ~~receiving the information for download the file from the wireless communication device,~~ send[[ing]] a request to the ~~remote~~ first web server computer for downloading the first file in response to receive said information of the first file available for downloading sent from the first wireless communication device, and

further receive[[ing]] ~~the~~ downloading data stream [[for]] of the first file from the ~~remote~~ first web server computer, and store[[ing]] the first file directly into the first ~~external~~ storage space assigned to the first wireless communication device.

60. (New) The system of claim 33 further comprising:

Provid[[e]]ing the first user of the first wireless communication device ~~via the~~ web based ~~browser to~~ access[[ing]] at least the first [[a]] file stored on the ~~assigned~~ first external storage space [[on]] of the associated computer, wherein the first file is at least one of a streaming video file, a streaming musical file, or a digital picture file.

61. (New) A computer program product, tangibly stored on a non-transitory computer-readable medium, for a system providing each one of a plurality of wireless communication devices accessing an external storage space, the computer program product comprising:

[[a]] program code comprising program instructions for at least a first web server computer serving a first web site accessible by a plurality of users on world wide web ~~on a communication network~~,

the first web site providing file downloading service through providing at least a first web page comprising ~~at least an~~ information [[for]] of at least a first file that is available for downloading;

[[a]] program code comprising program instructions for at least a first wireless communication device[[s]] configured[[ing]] ~~a web browser being used~~ for accessing the world wide web, the accessing including to access ~~(retrieve)~~ at least ~~said~~ the first web page of ~~said~~ the first web site, wherein ~~said~~ the first web page upon accessing is cached in the first wireless communication device; and

[[a]] program code comprising program instructions for at least a[[n]] first associated computer providing at least a first storage space to at least ~~said~~ the first wireless communication device as an exclusive accessible external storage of ~~said~~ the first wireless communication device across ~~the~~ a communication network~~, and~~, the first associated computer

~~wherein said wireless communication device~~ operatively coupling to the fist wireless communication device ~~associated computer~~ for providing ~~controlling~~ a first user of ~~said~~ the first wireless communication device ~~via the web browser to~~ web based accessing and managing[[e]] the first ~~assigned external~~ storage space ~~that~~ , said accessing including[[es]] ~~controlling~~ supporting downloading at least ~~said~~ the first file from ~~said~~ the first web site directly into the ~~assigned external~~ first storage space instead of immediately downloading the first file into ~~said~~ the first wireless communication device.

62. (Currently Amended) The computer program product of claim 61, wherein said

associated computer is configured with at least a storage device, each storage device being partitioned into at least a storage volume, and each storage volume being configured with a file system and being exclusively assigned to a wireless communication device as an external storage.

63. (Currently Amended) The computer program product of claim 61, wherein said associated computer provides a web user interface comprising ~~transmitting and displaying~~ information of ~~the~~ said assigned external storage space to be transmitted to and displayed in[[to]] a web browser of ~~a corresponding~~ said wireless communication device ~~via a web user interface~~ that allows ~~the~~ said user accessing said ~~selecting management options and performing corresponding data management for the~~ assigned external storage space.

64. (Currently Amended) The computer program product of claim 61, wherein ~~the~~ said wireless communication device allows[[ing]] ~~the~~ said user performing web based file transferring ~~from the web browser via a web user interface~~ to transmit at least a data file[[s]] between ~~the~~ said wireless communication device and [[the]] said assigned external storage space on [[the]] said associated computer.

65. (Currently Amended) The computer program product of claim 61, wherein said wireless communication device allows[[ing]] said user performing ~~via the~~ web based ~~browser to~~ managing said assigned external storage space ~~that includes creating folder structure and performing data management for the stored files, the data~~ wherein said managing[[ement]] includes[[ing]] performing at least one of rename, copy, delete, or move operation for at least a data object that the data object includes[[ing]] file and folder.

66. (Currently Amended) The computer program product of claim 61, wherein said downloading includes said

wireless communication device sending the information of ~~the~~ said file available for downloading to ~~the~~ said associated computer based on the information obtained from ~~the~~ said web page cached in ~~the~~ said wireless communication device.

67 (Currently Amended) The computer program product of claim 66, wherein said associated computer receives[[ing]] the ~~download~~ information ~~for the~~ of said file available for downloading from ~~the~~ said wireless communication device, and further performs: [[,]]

sending a request to ~~the remote~~ said web server computer for ~~of~~ downloading ~~the~~ said file[[,]];

receiving ~~the~~ downloading stream for said ~~the~~ file from ~~the remote~~ said web server computer[[,]]; and

storing [[the]] said file directly into [[the]] said external storage space assigned to [[the]] said wireless communication device.

68. (Currently Amended) The computer program product of claim 61, wherein said wireless communication device

provides[[ing]] ~~the~~ said user of [[the]] said wireless communication device ~~via the web browser to~~ web based accessing at least a file stored on ~~the~~ said assigned external storage space, wherein [[the]] said file is at least one of a streaming video file, a streaming musical file, or a digital picture file.

Electronic Acknowledgement Receipt

EFS ID:	10201830
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	31-MAY-2011
Filing Date:	04-DEC-2003
Time Stamp:	21:30:10
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Supplemental Response or Supplemental Amendment	897-suplement.pdf	466716 3e95c423c9ea5e935db2dc8cfa565b7a7a6d571a	no	10
Warnings:					
Information:					
		Total Files Size (in bytes):	466716		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/726,897	12/04/2003	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	05/31/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/VENESSA JONES/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Applicant Initiated Interview Request Form

Application No.: 10/726,897 First Named Applicant: Sheng Tai (Ted) Tsao
Examiner: Chankong, Dohm Art Unit: 2452 Status of Application: Pending

Tentative Participants:
(1) Sheng Tai (Ted) Tsao **(2)** _____

(3) _____ **(4)** _____

Proposed Date of Interview: TBD **Proposed Time:** TBD **(AM/PM)**

Type of Interview Requested:
(1) [✓] Telephonic (2) [ ] Personal (3) [ ] Video Conference

Exhibit To Be Shown or Demonstrated: [ ] YES [ ] NO
If yes, provide brief description: _____

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) amended	claim 31		[ ]	[ ]	[ ]
(2) amended	claim 33		[ ]	[ ]	[ ]
(3) new	claim 61		[ ]	[ ]	[ ]
(4)			[ ]	[ ]	[ ]

[ ] Continuation Sheet Attached [ ] Proposed Amendment or Arguments Attached

Brief Description of Arguments to be Presented: Applicant would like to discuss the allowance for the the amended claims, specially for independent claim 31, 33, and 61

An interview was conducted on the above-identified application on _____

NOTE: This form should be completed and filed by applicant in advance of the interview (see MPEP § 713.01). If this form is signed by a registered practitioner not of record, the Office will accept this as an indication that he or she is authorized to conduct an interview on behalf of the principal (37 CFR 1.32(a)(3)) pursuant to 37 CFR 1.34. This is not a power of attorney to any above named practitioner. See the Instruction Sheet for this form, which is incorporated by reference. By signing this form, applicant or practitioner is certifying that he or she has read the Instruction Sheet. After the interview is conducted, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible. This application will not be delayed from issue because of applicant's failure to submit a written record of this interview.

/Shengtai Tsao/
Applicant/Applicant's Representative Signature

_____
Examiner/SPE Signature

Sheng Tai (Ted) Tsao
Typed/Printed Name of Applicant or Representative

_____
Registration Number, if applicable

PTOL-413A (08-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Instruction Sheet for:
APPLICANT INITIATED INTERVIEW REQUEST FORM

(Not to be Submitted to the USPTO)

1. If this form is signed by a registered practitioner not of record, the authority to submit the Applicant Initiated Interview Request Form is pursuant to limited authority to act in a representative capacity under 37 CFR 1.34 and further proof of authority to act in a representative capacity may be required. *See* 37 CFR 1.34.

   The Office will accept the signed form as an indication that the registered practitioner not of record is authorized to conduct an interview on behalf of the principal in pursuant to 37 CFR 1.34.

   For more information, see the "Conducting an Interview with a Registered Practitioner Acting in a Representative Capacity" notice which is available on the USPTO Web site at: http://www.uspto.gov/patents/law/notices/2010.jsp.

2. This is not a power of attorney to any named practitioner. Accordingly, any registered practitioner not of record named on the form does not have authority to sign a request to change the correspondence address, a request for express abandonment, a disclaimer, a power of attorney, or other document requiring the signature of the applicant, assignee of the entire interest or an attorney of record. If appropriate, a separate power of attorney to the named practitioner should be executed and filed in the US Patent and Trademark Office.

3. Any interview concerning an unpublished application under 35 U.S.C. § 122(b) with a registered practitioner not of record, pursuant to 37 CFR 1.34, will be conducted based on the information and files supplied by the practitioner in view of the confidentiality requirements of 35 U.S.C. § 122(a).

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	9950199
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	25-APR-2011
Filing Date:	04-DEC-2003
Time Stamp:	16:35:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Letter Requesting Interview with Examiner	897-request-interview.pdf	420830 2a572317b91f04025eaeb8fd57637b0bcf0dc4a2	no	3
Warnings:					
Information:					
		Total Files Size (in bytes):	420830		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

REMARKS

The Office Action sent to Applicant on 03/23/2011 has been carefully considered. Claims 31-51 are previously pending and all pending claims stand rejected. The claims 31 – 51 are amended comprising enhancements in response to the Office Action of 03/23/2011 without introduce any new matter. The current pending claims standing for examining are claims 31 – 33, and 52 – 68 which include the original claim 31 – 33 and new claims 52 - 58. The original claims 34 – 51 are canceled. Applicant respectfully requests entry of the foregoing Amendments and reconsideration of the instant application in light of the amendments above and the remarks below.

1. Regarding The 35 USC §112 Rejection:

The claims 31 – 51 are rejected under 35 USC §112, Applicant very appreciates Office Action pointed out the grammatical and statutory errors. These errors are fixed in the amended claims 31 – 33. Since the claims 34 - 51 are canceled, the rejections on these claims are moot. Since Applicant learned lessons from the errors pointed out by the Office Action, therefore, the added new claims are better scripted in a way that are much clean and neat in compliance to the 35 USC §112 requirement.

2. Regarding The 35 USC §102 Rejection:

In paragraph II of the Office Action, the claims 31 – 33, 37, and 45 are rejected as being anticipated by O'Brien et al. (US. Patent No. 6,351,807 or "O'Brien"). Applicant respectively traverses the rejections and can not agree such rejection. Because a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added).

Here, each and every element of Applicant's independent claims 31, and 33 are not found, either expressly or inherently, in a single prior art reference of O'Brien.

For example, the claim 31 of instant application (recited in part and emphasis added):

"31. ..... assigning a wireless communication device to access an external storage space provided by an associated computer across a communication network;

configuring the wireless communication device ... to .....

send the download information for the desired file to the associated computer based on the information of the desired file obtained from the cached web page in the wireless communication device;; .....".

The claims 31 reflects the disclosed subjects on page 6, lines 1 – 20 of instant application such that (instant application's page 6, lines 1 – 20 recited in part and emphasis):

1) "..... web-browser (8 of Fig. 3) of a specific wireless device (1 of Fig. 3) accesses a remote download web server site (12 of Fig. 3) and obtain the information for download via path (a) of Fig. 3. For example, to get a web-page, which contains the data name for download.
2) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) obtains download information, which becomes available in the cached web-pages on wireless device.....

send the obtained download information to storage server....."

On the other hand, although O'Brien disclosed

"The EJB cluster (EJBC) caches memory of common resource such as the pooling of data connections and the like, as well as data objects." (O'Brein col. 8, lines 33 – 39)

Yet, it is so obvious that the cache of the enterprise JavaBean cluster of O'Brien has failed to disclose the cache of the wireless communication device of instant application. Second, O'Brein's "Save to MY X:Drive System" has failed to disclose that the out-banded downloading requires to obtain the file information from the previously retrieved web page in the cache of instant application. Third, O'Brien has failed to disclose that the wireless communication device of instant application obtains the file information from the cached web page in the storage media of the wireless communication device and send it to the storage server that provides external storage to the wireless communication device. It is obviously that O'Brien failed to disclose and never disclose providing external storage for the wireless communication device.

Applicant would like to point out that for the above reasons alone, the claims 31 is patentable over the O'Brien. Since claim 33 is a system implemented the method of the claim 31, therefore, the claim 33 is also patentable over the O'Brien. Further, the claim 32 is a dependent claim of the claim 31, therefore, by the law, the claim 32 is also patentable over the O'Brien. From the given facts, Applicant respectively requests the Office Action to withdrawn the 35 USC 102 (b) rejection over the claim 31, 32, and 33. Also a request for allowance of claim 31, 32, and 33 is respectively submitted.

The claims 37 and 45 are canceled, therefore, the rejection on these two claims are moot.

3. Regarding The 35 USC §103 Rejection:

The Office Action rejected claims 34 – 36, 38 – 44, and 46 - 51 under 35 U.S.C. 103(a) as being obvious over O'Brien (US. 6,351,776), hereinafter referred to as "O'Brien" in view of Hochmuth (US 7,500,069), hereinafter referred to as "Hochmuth". Without admitting that O'Brien and Hochmuth are prior art and reserving the right to establish that

they are not prior art, Applicant respectfully traverses these rejections regardless the rejections are moot due to the cancellation of the claims 34 – 36, 38 – 44, and 46 - 51.

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *in re Royka*, 490 f. 2d 98 1, 180 Uspq 580 (CCPA 1974). in other words, each and every element (or limitation) in a claim must be taught somewhere in the applied references. if any one of the elements is not taught in any of the applied prior art, the obviousness rejection under §103 cannot stand.

Applicant respectively submit that the combination of O'Brien and Hochmuth have failed to disclose a detailed sequence of steps of supporting wireless communication device's web based downloading for a desired file from a remote web site directly into an external storage space provided by a storage server instead of immediately downloading it into the wireless communication device itself.

Applicant's remark made for 35 U.S.C. 102(b) rejection has clearly proved that O'Brien has failed to disclose the wireless communication device of instant application for supporting downloading file into external storage.

Second, although Mochmuth's disclosed wireless communication network and mobile device access the storage such as (Mochnuth COL. 5, lines 16 – 18 recite)

"FIG. 1 illustrates a secure storage access system 10 that includes clients 20 and 30 coupled to a secure switched network 40 through a network such as the Internet 15. Secure storage"

and such as (Mochnuth COL. 5, lines 42 – 43 recite)

"As illustrated in FIG. 1, client 30 includes mobile node 31 and computing node 32"

However, same as O'Brien that Mochmuth also has failed to disclose the important step of obtaining the file download information from the web page cached in the storage media of a wireless communication device.

Applicant would like to submit that because both of O'Brien and Mochmuth has failed to disclose such important step in a sequence of steps of instant application, the 35U.S.C 103 (a) rejections on the instant application shall be withdrawn. The independent claims 31, 33, and 61 of instant application are patentable over the combination of the O'Brien and Mochmuth.

4: Issues:

a) The specification of instant application was not professionally drafted at the time of submitting on 12/04/2003. Specially, it was incorrectly referenced related parent applications regardless its numerous formality issues.

For example, in the first paragraph of "Field of the Invention" of instant application has referenced claims 20 item a), b), d), claim 30 item b), and claim 36 of provisional application 60/401,238 of "Concurrent Web Based Multi-Task Support for Control Management System".

Yet, it actually really means to reference the utility application 10/713,904 which is converted from the provisional application 60/401,238 because the provisional application 60/401,238 actually does not have these claims, instead these claims can be found in the converted application 10/713,904 filed on 06/22/2003. For example, the description of the claims 36 of 10/713,904 states (claim 36 of 10/713,904 recite, and emphasis added)

"36. The claim 20 with item a), b), and d) together with claim 30) further includes a) When the wireless devices used as web-console host, the users on the web console of these wireless devices can partition storage, create and mount file system, and create file/directory hierarchy for any system within CCDSVM. In addition, user can move any type of data to the storage on these system from console host itself or from any other system within CCDSVM. This actually in the sense that is has enabled the users of these wireless devices to actually own a huge amount of virtual external storage such as owning multiple Gig Bytes disk storage on either system units or control management station."

In addition, the first paragraph of instant application also referenced a claim 19 of provisional application 60/402,626 of "IP Based Distributed Virtual SAN". Actually, it really means to reference the application 10/713,905 which was converted from the provisional application 60/402,626 on 06/22/2003 because the provisional application 60/402,626 does not have the claim 19, instead the application 10/713,905 has.

The reason for such incorrect references is that when instant application filed on 12/04/2003, the application number of 10/713,904 had not issued yet although Applicant filed a petition for converting the provisional application 60/401,238 into a non-provisional application on 06/22/2003. The application number of 10/713,904 was given by USPTO office on 01/21/2004.

Applicant has realized that it is a complicated issue to make corrections for the scenarios mentioned above for the instant application although Applicant has proved what the prior applications referenced by the first paragraph of instant application really referenced the converted non-provisional application 10/713,904 and 10/713,905. While the first paragraph of instant application has incorrectly referenced prior applications, yet they are still valuable to the instant application to be removed.

Applicant is curious about if a rule 312 type of amendment can be applied to the instant application to resolve at least the formality issues of the instant application. Please be advised. In addition, Applicant would like to file a continuation in part of an application for covering the virtual storage server providing external storage to the wireless communication devices along with resolving the discussed issue.

5: Conclusion:

The remarks made above have clearly indicated that the combination of O'Brien and Mochmuth has failed to disclose the major subject matters of the instant application. Therefore, all independent claims 31, 33, and 61 are patentable over the combination of

O'Brien and Mochmuth. Further all claims depending on the independent claims 31, 33, and 61 shall be patentable as matter of the patent law (See Jenric/Pentron, Inc. v. Dillon Co., 205 F. 3d 1377, 1382 (Fed. Cir. 2000).). Thus, the withdrawing all rejections from the Office Action of 03/23/2011 is respectively requested.

6: Summery:

Applicant believes that the proposed amended claims and the remarks made above have fully overcome the rejections made in Office Action on 03/23/2011 and the instant application are in condition for allowance. Therefore, the issuance of a formal notice of allowance at an earlier date is respectfully requested.

Applicant also very appreciates the Office Action for carefully examining the present application and if a telephone conference would facilitate the prosecution of this application, the applicant Sheng Tai (Ted) Tsao can be reached at (408) 813-0536 and at 408-251-0864. Please also forward the corresponding materials to inventor's address of 2979 Heidi Drive, San Jose, CA 95132.

Respectfully submitted,
Date: 04/18 /2011

/Shengtai tsao/
Sheng Tai (Ted) Tsao
2979 heidi drive,
San Jose, CA 95132

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.

SERIAL NO.: 10/726,897 Confirmation No. 4178

FILING DATE: 12/04/2003

TITLE: The Use of Wireless Devices' External Storage

EXAMINER: Chankong, Dohm

ART UNIT: 2452

Mail Stop Amendment
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Amendment In Response To The Office Action Of 03/23/2011

Dear Sir/Madam:

This is amendment in response to the Office Action of 03/23/2011 for the application 10/726,897. After amending, the claims 34 – 51 are canceled. The current total 20 pending claims include original claims 31 – 33, and new claims 52 – 68.

The amendment to the claims can be found in the original specification and drawings, and there is no new matter being introduced. The remark to the Office Action can be found in an attached document. Therefore, the entry for the amended claims and an earlier allowance of the claims is respectively submitted.

Thanks for your help & Respectively Submitted

04/18/2011

//Shanegtai Tsao//
Sheng Tai (Ted) Tsao
2979 Heidi Drive,
San Jose, CA 95132
408-813-0536

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claim

Claims 1 -30 canceled

31. (Currently Amended) A method of ~~out-band~~ downloading a file from a web-site into a ~~targeted system~~ storage space comprising:

assigning a fist wireless communication device to access a first external storage space provided by an associated computer across a communication network;

~~facilitating a user from~~ instructing the fist wireless communication device's a web-browser ~~of a system via a network of LAN, Intranet or Internet to accesses~~ to

retrieve a web page [[on]] from a remote web site served by a web server computer, ~~where~~ the web page comprising a file ~~contains file download information including the file path, the IP address of the remote web site, and related~~ information available for downloading ~~from the web server;~~ , and

~~instructing the wireless system to obtain~~

instructing the fist wireless communication device sending the ~~desired~~ file ~~download~~ information for the downloading ~~contained in the web page from~~ to the associated computer via obtaining the file information from the ~~cached~~ web page cached [[o]]in the ~~system~~ first wireless communication device; and

~~instructing the system to send the obtained file download information to a permitted targeted system via the network;~~

instructing the ~~targeted system~~ associated computer to

receive ~~said file~~ the file information for downloading ~~information~~ from the first wireless communication device, ~~and~~

send a ~~download~~ request to the remote web ~~site~~ server computer for downloading the file, ~~via the network; and~~

~~instructing the targeted system to~~

receive[[ing]] the downloading ~~file~~ data stream for the file from the remote web[[-site]] server computer, and

store the file directly into ~~a designated file system of the targeted system~~ the first external storage space assigned to the first wireless communication device ~~without goes through said system~~.

32. (Currently Amended) The method of claim 31~~, wherein said web browser of a system and the targeted system~~ further includes:

providing[[e]] ~~the~~ a user ~~from a~~ of the first wireless communication device[['s]] via the web browser to access at least a file stored on the assigned first external storage space across the communication network, wherein the file is at least one of a streaming video file, a streaming musical file, or a digital picture file. ~~web page, provide the user from a personal desktop or laptop to access the web page, and provide user from a server's web browser to access the web page; and~~

~~provide another remote laptop, desktop, or server as the targeted system~~.

33. (Currently Amended) A system ~~provides~~ supporting for downloading file for a plurality of ~~for~~ wireless communication devices ~~that comprises~~, the system comprising:

at least a web server computer serving a web site on a communication network, the web site providing file downloading services via providing at least a web page comprising at least an information for a file that is available for downloading;

at least a wireless communication device,

the wireless communication device comprising a web browser for the wireless communication device accessing world wide web, the accessing including to access (retrieve) at least said web page of said web site for downloading at least said file, wherein said web page upon accessing is cached in the wireless communication device; and

an associated computer providing at least an storage space to at least said wireless communication device as an external storage space of said wireless communication device across the communication network; and

wherein said wireless communication device operatively coupled to the associated computer for controlling a user of said wireless communication device accessing the assigned external storage space including controlling downloading at least said file from said web site directly into the assigned external storage space instead of immediately downloading the file into the wireless communication device itself.

~~a server unit connects to a network and to be accessed by one or more users from each of their own web browser via the network of LAN, Intranet or Internet;~~

~~the server unit is configured with one or more storage devices, which to be partitioned by one or more administration users from each of their own web browser over the network, and be assigned to each wireless device as its external storage; and~~

~~the server unit facilitates each user of the wireless devices from his/her web browser to perform tasks of accessing and managing the files and file-folders in the wireless device's assigned external storage, where the tasks include downloading files from remote web sites into the assigned external storage on the server unit, and~~

~~the server unit also facilitates each user's one or more tasks to be run concurrently in the user's web browser.~~

34 – 51 (Canceled)

52. (New) The method of claim 31 further includes:

assigning a second storage space of the associated computer to a second wireless communication device, and allowing the second wireless communication device to download at least a file from the web site directly into the assigned second storage space instead of immediately downloading the file into the second wireless communication device.

53. (New) The system of claim 31 further comprising:

allowing each wireless communication device downloading at least a file directly from a second web site served by a second web server computer into the corresponding assigned external storage space on the associated computer instead of immediately downloading the file into the wireless communication device.

54. (New) The system of claim 33, wherein

said associated computer configured with at least a storage device, each storage device being partitioned into at least a storage volume, and each storage volume being configured with a file system and be exclusively assigned to a wireless communication device as an external storage space.

55. The system of claim 33, wherein

said associated computer transmitting and displaying the assigned external storage space into a web browser of a corresponding wireless communication device via

a web user interface that allows the user selecting at least a management option to perform data management task.

56. (New) The system of claim 33 further comprising:

providing the user of the wireless communication device via the web browser transmitting data file between the wireless communication device and the assigned external storage space on the associated computer.

57. (New) The system of claim 33 further comprising:

providing the user of the wireless communication device via the web browser to managing assigned external storage space that includes creating folder structure and performing data management for the stored files, the data management including at least one of rename, copy, delete, or move operating option.

58. (New) The system of claim 33, wherein said downloading a file a further comprising:

the wireless communication device sending the information of said file available for downloading to the associated computer based on the information obtained from said web page cached in the wireless communication device.

59. (New) The system of claim 58 comprising:

the associated computer receiving the information for download the file from the wireless communication device, sending a request to the remote web server computer for downloading the file, receiving the downloading data stream for the file from the remote web server computer, and storing the file directly into the external storage space assigned to the wireless communication device.

60. (New) The system of claim 33 further comprising:

provide the user of the wireless communication device via the web browser to access at least a file stored on the assigned external storage space on the associated computer, wherein the file is at least one of a streaming video file, a streaming musical file, or a digital picture file.

61. (New) A computer program product, tangibly stored on a computer-readable medium, for a system providing each one of a plurality of wireless communication devices an external storage space, the computer program product comprising:

a program code comprising program instructions for at least a web server computer serving a web site on a communication network,
the web site providing file downloading service through providing at least a web page comprising at least an information for a file that is available for downloading;

a program code comprising program instructions for at least a wireless communication devices configuring a web browser being used for accessing the world wide web, the accessing including to access (retrieve) at least said web page of said web site, wherein said web page upon accessing is cached in the wireless communication device; and

a program code comprising program instructions for an associated computer providing at least a storage space to at least said wireless communication device as an external storage of said wireless communication device across the communication network; and

wherein said wireless communication device operatively coupling to the associated computer for controlling a user of said wireless communication device via the web browser to access and manage the assigned external

storage space that includes controlling downloading at least said file from said web site directly into the assigned external storage space instead of immediately downloading the file into said wireless communication device.

62. (New) The computer program product of claim 61, wherein said associated computer configured with at least a storage device, each storage device being partitioned into at least a storage volume, and each storage volume being configured with a file system and be exclusively assigned to a wireless communication device as an external storage.

63. (New) The computer program product of claim 61, wherein said associated computer transmitting and displaying information of the assigned external storage space into a web browser of a corresponding wireless communication device via a web user interface that allows the user selecting management options and performing corresponding data management for the assigned external storage space.

64. (New) The computer program product of claim 61, wherein the wireless communication device allowing the user from the web browser via a web user interface to transmit data files between the wireless communication device and the assigned external storage space on the associated computer.

65. (New) The computer program product of claim 61, wherein said wireless communication device allowing via the web browser to managing assigned external storage space that includes creating folder structure and performing data management for

the stored files, the data management including at least one of rename, copy, delete, or move operation.

66. (New) The computer program product of claim 61, wherein said

wireless communication device sending the information of the file available for downloading to the associated computer based on the information obtained from the web page cached in the wireless communication device.

67 (New) The computer program product of claim 66, wherein said

associated computer receiving the download information for the file from the wireless communication device, sending a request to the remote web server computer for of downloading the file, receiving the downloading stream for the file from the remote web server computer, and storing the file directly into the external storage space assigned to the wireless communication device.

68. (New) The computer program product of claim 61, wherein said wireless communication device

providing the user of the wireless communication device via the web browser to access at least a file stored on the assigned external storage space, wherein the file is at least one of a streaming video file, a streaming musical file, or a digital picture file.

Electronic Acknowledgement Receipt

EFS ID:	9905076
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	18-APR-2011
Filing Date:	04-DEC-2003
Time Stamp:	20:17:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Remark-on-OA.pdf	489577 43a848467ba7bf53e7ce5aa7745d12c5a8753dac	no	7
Warnings:					
Information:					
2	Amendment/Req. Reconsideration-After Non-Final Reject	6-10-09-amend.pdf	388286 64b6ea924b23062952d73a79e2085f0484fcae33	no	9
Warnings:					
Information:					
		Total Files Size (in bytes):	877863		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/726,897	12/04/2003	

APPLICATION AS FILED – PART I

(Column 1) (Column 2) — SMALL ENTITY ☒ OR OTHER THAN SMALL ENTITY

FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)	OR	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

(Column 1) (Column 2) (Column 3) — SMALL ENTITY OR OTHER THAN SMALL ENTITY

AMENDMENT	04/18/2011	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 21	= 0	X $26 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $110 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/TINA J. BARDEN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,897	12/04/2003	Sheng (Ted) Tsao		4178

7590 03/23/2011

SHENG (TED) TAI TSAO
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EXAMINER	
CHANKONG, DOHM	
ART UNIT	PAPER NUMBER
2452	

MAIL DATE	DELIVERY MODE
03/23/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/726,897	TSAO, SHENG (TED)	
	Examiner	Art Unit	
	DOHM CHANKONG	2452	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This non-final rejection is in response to Applicant's preliminary amendment filed on 6/12/2009. Applicant has cancelled claims 1-30 and added claims 31-51. Accordingly, Applicant presents claims 31-51 for examination.

I. CLAIM REJECTIONS – 35 U.S.C. § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A. Claims 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are replete with grammatical and statutory errors. In addition to correcting the errors detailed in the following section, Applicant should go over each claim to insure grammatical correctness and compliance with the second paragraph of 35 U.S.C. § 112.

Claim 31

Claim 31 is rejected for lacking proper antecedent basis for "the cached web page" and "the downloading file stream." The phrases "to accesses [sic] a web-page", "without goes [sic] through said system", and "instructing the targeted system to receiving [sic]" are grammatically improper.

Claim 32

The phrases "provide the user from a wireless device's web browser to access the web page", "provide the user from a personal desktop or laptop to access the web page", and "provide user from a server's web browser to access the web page" do not make sense because it is not

clear what is being provided to the user and what claim element is doing the providing. The phrase "and provide user [sic] from a server's web browser" is grammatically improper.

Claim 33

The phrases "a server unit connects to a network", "the server unit is configured", "the server unit facilitates", and "the server unit also facilitates" are all improperly written as method steps when claim 33 is an apparatus claim. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

The phrase "which to be partitioned by one or more administration users" is confusing because it is not clear what is being partitioned. Specifically, it is not clear if the server unit or the one or more storage devices are being partitioned.

The phrase "and be assigned to each wireless device as its external storage" is also confusing because it is not clear what is being assigned to each of the wireless devices. Specifically, it is not clear if the server unit or the one or more storage devices are assigned to the wireless device.

Claim 33 also lacks proper antecedent basis for "the files and file-folders."

The phrase "facilitates each user's one or more tasks to be run concurrently" is confusing because if there is only one task, it is not clear how one task can be running "concurrently." It is also not clear what elements are running "concurrently" – if the one or more tasks are running concurrently with one another or if the task of downloading files from the remote site to the external storage is run "concurrently" with some other task in the browser.

The phrase “one or more tasks” is confusing because its relationship to the previously claimed “tasks” is not clear. Specifically, it is not clear if the "one or more tasks" are referring to the same or different tasks. There should be language either linking (e.g., “a plurality of tasks”, “the plurality of tasks”) or differentiating (e.g., “a first task”, “a second task”) between the terms.

Claim 34

The phrase “the server unit facilitates” is improperly written as method steps when claim 34 is an apparatus claim. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

The phrase “a web browser” is confusing because it conflicts with the prior use of the term in parent claim 33. It is not clear if the "web browser" in claim 34 is intended to refer to the same "web browser" claimed in claim 33. If so, the terms should be properly linked (e.g., "the web browser").

The phrase “to select one storage device at time [sic] from the displayed a list [sic] of one or more storage devices on the server unit" is improper. Also "the displayed a list [sic]" lacks proper antecedent basis.

Claim 34 also lacks proper antecedent basis for "the list" and "the requirement.”

Claim 35

The phrase “the server unit also facilitates” is improperly written as method steps when the claim is an apparatus claim. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

The phrase "each administration user" is confusing because it conflicts with the phrase "one or more administration users" in parent claim 33. It is not clear if the "administration user" in claim 35 is intended to refer to the same "administrator user(s)" in claim 33. If so, the terms should be properly linked (e.g., "the one or more administration user").

The phrase "a web browser" is confusing because it conflicts with the prior use of the term in parent claim 33. It is not clear if the "web browser" in claim 34 is intended to refer to the same "web browser" claimed in claim 33. The phrase "The claim 35" is improper.

The phrase "a corresponding storage volume" is confusing because it conflicts with the prior use of the term "storage volume" found in parent claim 34. It is not clear if the "storage volume" in claim 35 is intended to be the same or different from the storage volume of claim 34.

Claim 36

The phrase "said user from wireless device's web browser to [sic] access and manage the files and file-folders" is grammatical improper. The phrase "the assigned storage" is confusing because it is not clear if the phrase is intended to refer to "the assigned external storage."

Claim 36 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 37

The phrases "a user", "a wireless device's web browser", "a network", "a remote web-site" are confusing because it conflicts with the prior use of the terms in parent claim 33. Claim

31 is rejected for lacking proper antecedent basis for "the cached web page" and "the downloading file stream." The phrase "without goes [sic] through said system" is improper.

Claim 37 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 38

The phrase "said facilitates user [sic] from wireless device's web browser" is grammatically improper. The phrase "one or more storage devices" is confusing because it conflicts with the prior use of the same term in claim 33. The phrase "administration user's web browser" is confusing because it conflicts with the prior use of the same term in claim 33.

The phrase "one or more storages volume" is grammatically incorrect. The phrase "the requirement for the user" lacks proper antecedent basis. The phrase "a corresponding user" is confusing because it conflicts with all prior uses of the "user" in previous claims.

Claim 38 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 39

The phrase "administration user" is confusing because it conflicts with the phrase "one or more administration users" in parent claim 33.

Claim 39 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 40

There are multiple uses of the phrase "one or more storage devices." The phrase "one or more storage devices" is confusing because the relationship between the phrases within claim 40 is not clear. Applicant should amend with proper identifiers such as "a" or "the" to clarify the relationship.

Claim 40 also lacks proper antecedent basis for "the services and data." The phrase "in dependent of other server units" is grammatically improper. The phrase "facilitates each user's one or more tasks to be run concurrently" is confusing because if there is only one task, it is not clear how one task can be running "concurrently." It is also not clear what elements are running "concurrently" – if the one or more tasks are running concurrently with one another or if the task of downloading files from the remote site to the external storage is run "concurrently" with some other task in the browser.

Claim 41

The phrase "a web browser" is confusing because it conflicts with the prior use of the term in parent claim 40. Claim 41 lacks proper antecedent basis for "the requirement."

Claim 41 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations

and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 42

The phrase "a web browser" is confusing because it conflicts with the prior use of the term in parent claim 40. The phrase "a corresponding storage volume" is confusing because it conflicts with the prior use of the term "storage volume" found in parent claim 40. The phrase "each file system" is also confusing because it implies that there are multiple file systems but the claim only claims "one file system."

Claim 42 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 43

The phrase "corresponding wireless device" is confusing because it conflicts with the phrase "a corresponding user's wireless device" in claim 40. The phrase "the user of each wireless device" lacks proper antecedent basis.

Claim 43 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 44

The phrase "the user from wireless device's web browser to [sic] access and manage the files and file-folders" is grammatical improper. The phrase "the assigned storage" is confusing because it is not clear if the phrase is intended to refer to "the assigned external storage." The phrase "The claim 43" is grammatically incorrect.

Claim 44 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 45

The phrase "said provider the user from wireless device to access and manage assigned external storage" is grammatically improper. The phrases "a user", "a wireless device's web browser", "a network", "a remote web-site" are confusing because it conflicts with the prior use of the terms in parent claim 40.

Claim 45 is rejected for lacking proper antecedent basis for "the cached web page" and "the downloading file stream." The phrase "without goes [sic] through said system" is improper. The phrase "The claim 43" is grammatically incorrect.

Claim 45 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 46

The phrase "one or more storage devices" is confusing because it conflicts with the prior use of the same term in claim 40. The phrase "administration user's web browser" is confusing because it conflicts with the prior use of the same term in claim 40.

The phrase “one or more storages volume” is grammatically incorrect. The phrase “the requirement for the user" lacks proper antecedent basis. The phrase "a corresponding user" is confusing because it conflicts with all prior uses of the "user" in previous claims.

Claim 46 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 47

The phrase "the control system also facilitates each user including the administration user from web browser” is confusing because the language requires multiple users to use a single web browser. The phrase “The claim 46” is grammatically incorrect.

Claim 47 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 48

The phrase "to receive, identify, and runs [sic] each task in the background" is grammatically improper. The term "the background" lacks proper antecedent basis. The phrase "a corresponding server unit" is confusing because it conflicts with the prior use of the phrase in claim 46. The phrase "The claim 47" is grammatically incorrect.

Claim 48 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 49

The phrases "the request application service and data" and "the corresponding user's wireless devices" lack proper antecedent basis. The phrase "The claim 47" is grammatically incorrect.

Claim 49 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

Claim 50

The phrases "a virtual server" and "one or more users" are confusing because it conflicts with the prior use of the term in claim 40 and the other uses of the same term within claim 50.

Claim 50 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations

and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

The limitations "form [sic] a virtual server on a LAN to be accessed by"" are grammatically incorrect.

Claim 51

The phrase "administration user" is confusing because it conflicts with the phrase "one or more administration users" in parent claim 40.

The phrase "the server unit" is confusing because parent claim 40 recites "one or more server units." Therefore, it is unclear if "the server unit" is intended to refer to one or more server units. The phrase "The virtual claim 50" is grammatically incorrect.

Claim 51 is also rejected for comprising a method step which is confusing because the claim is directed to an apparatus. The claims should be rewritten into apparatus-type limitations and not method steps. That is, the limitations must effect the structure of the server system. See MPEP § 2114.

II. CLAIM REJECTIONS – 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A. Claims 31-33, 37, and 45 are rejected under 35 U.S.C. § 102(b) as being anticipated by *O'Brien* et al., U.S. Patent No. 6.351.776 ["*O'Brien*"].

Claim 31

O'Brien discloses a method of out-band downloading a file from a web-site to targeted system comprising:

facilitating a user from a web-browser of a system via a network of LAN, Intranet or Internet to accesses a web-page on a remote web site [abstract: disclosing using a browser to access a user-interface | column 2 «lines 17-20»], where the web-page contains file download information including the file path, the IP address of the remote web site, and related information for downloading [column 2 «lines 17-25»: disclosing the web page have URL information (i.e., file path and IP address of the remote web site)];

instructing the system to obtain the file download information contained in the web page from the cached web page on the system [Fig. 11 «item 1114» | column 18 «lines 33-39»: disclosing the user has the URL which requires that the system (i.e., the user's computer) had obtained the URL in a prior step];

instructing the system to send the obtained file download information to a permitted targeted system via the network [Fig. 11 «item 1114» | column 18 «lines 33-34»: disclosing that the user submits the URL information to the Xdrive system (i.e., permitted target system)];

instructing the targeted system to receive said file download information and send a download request to the remote web site via the network [column 18 «lines 64-66»: disclosing the Xdrive system contacts the URL site to begin the download process]; and

instructing the targeted system to receiving the downloading file stream from the remote web-site directly into a designated file system of the targeted system without goes through said system [column 4 «lines 7-10»: disclosing the internet-to-internet file transfer bypasses the user's device because the files are saved to the user's Xdrive].

Claim 32

*O'Bri*en discloses wherein said web browser of a system and the targeted system further includes:

provide the user from a wireless device's web browser to access the web page [column 2 «lines 46-47»: a laptop is a type of wireless device], provide the user from a personal desktop or laptop to access the web page [column 2 «lines 46-47»: a laptop is a type of wireless device], and provide user from a server's web browser to access the web page [column 3 «line 39-41»]; and

provide another remote laptop, desktop, or server as the targeted system [column 3 «lines 15-22»: *O'Brien*'s xdrive system reads on the claimed targeted system].

Claim 33

O'Brien discloses a system provides external storage for wireless devices that comprises:

a server unit connects to a network and to be accessed by one or more users from each of their own web browser via the network of LAN, Intranet or Internet [column 7 «lines 5-11 and 36-41»: disclosing a user using a browser-based application and accessing the xdrive through the internet];

the server unit is configured with one or more storage devices, which to be partitioned by one or more administration users from each of their own web browser over the network, and be assigned to each wireless device as its external storage [column 3 «lines 15-21»: disclosing users are allocated individual space or their own individual Xdrive]; and

the server unit facilitates each user of the wireless devices from his/her web browser to perform tasks of accessing and managing the files and file-folders in the wireless device' s assigned external storage, where the tasks include downloading files from remote web sites into the assigned external storage on the server unit [column 4 «lines 7-10»: *O'Brien* allows internet-to-internet transfer from the server to the user's xdrive]; and

the server unit also facilitates each user's one or more tasks to be run concurrently in the user's web browser [column 4 «lines 33-34»: disclosing providing browser-based access to the files which requires that the tasks be run within the browser. See also the § 112 rejection above as to the confusion regarding the "concurrently" term].

Claims 37 and 45

Claims 37 and 45 are rejected for at least the same reasons set forth for claim 31.

III. CLAIM REJECTIONS – 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

A. Claims 34-36, 38-44, and 46-51 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *O'Brien* in view of Hochmuth et al., U.S. Patent No. 7.500069 ["Hochmuth"].

Claims 34 and 41

As to claim 34, *O'Brien* as modified Hochmuth discloses wherein the server unit facilitates each administration user from a web browser to select one storage device at time from the displayed a list of one or more storage devices on the server unit to partition the selected storage device into one or more storage volumes for all storage devices on the list in response to the requirement of providing desired sized external storage to each wireless device [Hochmuth, column 8 «lines 8-17»: disclosing providing a GUI to an administrator for allocating storage to clients | column 11 «lines 1-4»: providing a desired capacity for the storage].

It would have been obvious to one of ordinary skill in the art to have modified *O'Brien*'s Xdrive system to include an administrative GUI as taught in Hochmuth. Such a modification to *O'Brien*'s system is an example of using a known technique (Hochmuth's administrative GUI to allocate space to clients) to improve similar systems (*O'Brien*'s online Xdrive storage space) in the same way. See MPEP § 2143.

Claim 41 is rejected for at least the same reasons set forth for claim 34.

Claims 35 and 42

As to claim 35, *O'Brien* as modified by Hochmuth discloses wherein the server unit also facilitates each administration user from a web browser to create one file system on a corresponding storage volume at a time for all storage volumes; and for all file systems, to assign a file system to a corresponding user's wireless device for the user from the wireless device's web browser to access and manage files and file-folders on the assigned external storage [*O'Brien*, Fig. 2 «item 204» | column 9 «lines 3-9»].

Claim 42 is rejected for at least the same reasons set forth for claim 35.

Claims 36, 43, and 44

As to claim 36, *O'Brien* as modified by Hochmuth discloses creating file folders and directories structure on the assigned storage, storing files on the wireless device into the assigned storage [*O'Brien*, column 3 «lines 15-17»],

performing data management tasks for the assigned storage including deleting, renaming, moving, and copying file-folders, directories and files, and including accessing and retrieving files from the assigned external storage to the user's wireless device [*O'Brien*, column 8 «lines 39-43»];

wherein said files includes streaming video, audio, digital picture, and message file [*O'Brien*, column 2 «lines 22-24»].

Claims 43 and 44 are rejected for at least the same reasons set forth for claim 36.

Claims 38 and 46

As to claim 38, *O'Brien* as modified by Hochmuth discloses the server unit facilitates to:

display one or more storage devices of the server unit into administration user' s web browser in response to the requirement for the user to perform partitioning each storage device into one or more storages volume [Hochmuth, column 8 «lines 8-17»: displaying the available file servers (i.e., storage devices) in the administrator's GUI];

display one or more storage volumes of the server unit into administration user' s web browser in response to the requirement for the user to perform creating a file system for each corresponding storage volume [Hochmuth, column 8 «lines 8-17»: displaying the available LUNs (i.e., storage devices)]; and

display assigned external file system into a corresponding user's wireless device's web browser in response to the user of the wireless device to perform tasks of accessing and managing one or more files and file-folder in the assigned external storage [*O'Brien*, column 3 «lines 57-65»: displaying a user interface for accessing the user's Xdrive file system].

See the rejection of claim 34 for reasons and motivation to combine *O'Brien* and Hochmuth.

Claim 46 is rejected for at least the same reasons set forth for claim 38.

Claims 39 and 51

As to claim 39, *O'Brien* as modified by Hochmuth discloses the system further includes:

provide administration user from wireless device's web browser to perform tasks including partitioning the storage devices and creating file systems for the server unit [Hochmuth, Fig. 1 «item 31»: disclosing a mobile node | column 8 «lines 8-17»];

provide administration user from laptop/desktop's web browser to perform tasks including partitioning the storage devices and creating file systems for the server unit [Hochmuth, Fig. 1 «item 32» | column 8 «lines 8-17»]; and

provide administration user from server unit' s web browser to perform tasks including partitioning the storage devices and creating file systems for the server unit [Hochmuth, Fig. 1 «item 50»: disclosing an administrative module on the server | column 8 «lines 8-17»].

See the rejection of claim 34 for reasons and motivation to combine *O'Brien* and Hochmuth.

Claim 51 is rejected for at least the same reasons set forth for claim 39.

Claim 40

O'Brien as modified by Hochmuth discloses a virtual server provides external storage for one or more wireless devices that comprises:

one or more server units, where each server unit configured with one or more storage devices [*O'Brien*, Fig. 12: disclosing an xdrive server]; and

a control system connects and controls said one or more server units via a network of LAN, Intranet or Internet to form a central controlled distributed scalable virtual machine ("CCDSVM") to be accessed by one or more users [Fig. 12 «item 1218» | column 19 «line 64» to column 20 «line 7»: disclosing a resource access layer which is accessed by a user to access the transaction database. The limitation "to form a central controlled distributed scalable virtual

machine ("CCDSVM") is not given any patentable weight since it does not affect the structure of the claimed virtual server (see MPEP § 2114)], wherein

the control system facilitates each administration user from a web browser over the network to partition one or more storage devices on each server unit and to assign each partitioned storage volume of each storage device to a corresponding user's wireless devices as external storage [Hochmuth, column 8 «lines 8-17»]; and wherein

the control system also facilitates each user from a wireless device's web browser via the network to perform tasks of accessing and managing one or more files and file-folders on the assigned external storage of a assigned server unit [*O'Brien*, column 8 «lines 39-43»], and the control system also facilitates each user' s one or more tasks to be run concurrently in the user's web browser [*O'Brien*, column 4 «lines 33-34»: disclosing providing browser-based access to the files which requires that the tasks be run within the browser. See also the § 112 rejection above as to the confusion regarding the "concurrently" term]; and wherein

each server unit provides the services and data to each assigned wireless devices in dependent of other server units and without going through the control system in response to the user of each wireless device performing said tasks [*O'Brien*, column 15-44»].

See the rejection of claim 34 for reasons and motivation to combine *O'Brien* and Hochmuth.

Claim 47

O'Brien as modified by Hochmuth discloses the control system also facilitates each user including the administration user from web browser to specify the task information for performing each task [*O'Brien*, column 20 «lines 4-7»: disclosing that the resource access layer

allows users to access and invoke operations on the server system], and to transmit each task information from the web browser to the control system [*O'Brien*, column 19 «lines 28-63»].

Claim 48

O'Brien as modified by Hochmuth discloses providing the control system to receive, identify and runs each task in the background, distribute each task to a corresponding server unit for actual executing, and provide task status or result back to administration user's web browser in response to each user's tasks [Hochmuth, Fig. 1 «item 50» | column 4 «lines 14-17» | column 8 «lines 17-20»: allowing the administrator to monitor resource consumption].

See the rejection of claim 34 for reasons and motivation to combine *O'Brien* and Hochmuth.

Claim 49

O'Brien as modified by Hochmuth discloses providing each server unit delivers the requested application service and data directly back to the corresponding user' s wireless devices without going through the control system and independent of other server units in response to each user's performed tasks of accessing application and data service [*O'Brien*, Fig. 12: disclosing the request processing layer returns requested files to the client's file access service | column 11 «lines 56-62»].

Claim 50

O'Brien as modified by Hochmuth discloses:

form a virtual server on a LAN to be accessed by one or more users including the administration user from each of their own web browser via said network [Hochmuth, column 4 «lines 29-31»];

form a virtual server over a Intranet to be accessed by one or more users including the administration user from each of their own web browser via said network [Hochmuth, column 6 «lines 5-7»: disclosing a VPN (i.e., intranet)]; and

form a virtual server over the Internet to be accessed by one or more users including the administration user from each of their own web browser via said network [Hochmuth, Fig. 1 «item 15»].

See the rejection of claim 34 for reasons and motivation to combine *O'Brien* and Hochmuth.

IV. CONCLUSION

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOHM CHANKONG whose telephone number is (571)272-3942. The examiner can normally be reached on Monday to Friday [10 am - 6 pm].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thu Nguyen can be reached on (571)272-6967. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DOHM CHANKONG/
Primary Examiner, Art Unit 2452

Notice of References Cited	Application/Control No. 10/726,897	Applicant(s)/Patent Under Reexamination TSAO, SHENG (TED)	
	Examiner DOHM CHANKONG	Art Unit 2452	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,351,776	02-2002	O'Brien et al.	709/245
*	B	US-6,356,941	03-2002	Cohen, Alon	709/219
*	C	US-2002/0059621	05-2002	Thomas et al.	725/87
*	D	US-2002/0123336	09-2002	Kamada, Tomihisa	455/420
*	E	US-2003/0191716	10-2003	Woods et al.	705/50
*	F	US-6,714,968	03-2004	Prust, Mitch	709/219
*	G	US-6,735,623	05-2004	Prust, Mitch	709/219
*	H	US-6,839,743	01-2005	Shim, Jae-Bum	709/217
*	I	US-6,985,927	01-2006	O'Brien et al.	709/213
*	J	US-7,506,034	03-2009	Coates et al.	709/219
*	K	US-7,650,621	01-2010	Thomas et al.	725/87
*	L	US-7,894,803	02-2011	Kamada, Tomihisa	455/414.3
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S3	18	(cloud partition$2) near3 storage same (download$3 transfer $5) with (content file) and @ay<"2004" and (wireless portable cellular) near3 (device computer $4phone)	US-PGPUB; USPAT	OR	ON	2011/02/15 16:34
S2	49	(cloud partition$2) near3 storage same (download$3 transfer $5) with (content file) and @ay<"2004"	US-PGPUB; USPAT	OR	ON	2011/02/15 16:34
S6	20	(cloud partition$2 external) near3 storage same (direct $2) with (download$3 transfer$5) with (content file) and @ay<"2004"	US-PGPUB; USPAT	OR	ON	2011/02/15 16:36
S16	14	(partition$3 assign$5) with (space storage) with user and (remote $2 virtual) with (space storage) with (user) and (server database partition$2 assign$5 virtual remote$2) with (download$3 transfer $5) with (web near3 page website) and @ay<"2004"	US-PGPUB; USPAT	OR	ON	2011/02/16 13:10
S19	25	(remote$2 virtual) with (space storage) and (server database partition$2 assign$5 virtual remote$2) with direct$2 near6 (download$3 transfer $5) with (web near3 page website) and @ay<"2004"	US-PGPUB; USPAT	OR	ON	2011/02/16 13:17

S18	11	(remote$2 virtual partition$3 assign$3) with (space storage) with (user) and (server database partition$2 assign$5 virtual remote $2) with direct$2 near6 (download$3 transfer$5) with (web near3 page website) and @ay<"2004"	US-PGPUB; USPAT	OR	ON	2011/02/16 13:17
S24	12	(partition$3) with (server system database storage) same (user client) and (website web near2 page) same (download $3) with (user client) with (partition assign $4 space storage) and @ay<"2004"	US-PGPUB; USPAT	OR	ON	2011/03/14 14:29
S27	59	(assign$4) with (space storage) same (user client) and direct$2 with (transfer$4 download$3) with (user client) with (partition assign$4 space storage) and @ay<"2004"	US-PGPUB; USPAT	OR	ON	2011/03/14 14:53
S26	50	(assign$4) with (space storage) same (user client) and direct$2 with (transfer$4) with (user client) with (partition assign$4 space storage) and @ay<"2004"	US-PGPUB; USPAT	OR	ON	2011/03/14 14:53
S28	151	(assign$4) with (space storage) same (user client) and direct$2 with (transfer$4 download$3) with (partition assign$4 space storage) and @ay<"2004" not S27	US-PGPUB; USPAT	OR	ON	2011/03/14 14:58

S30	24	(assign$4) with (space storage) same (user client) and server with (transfer$4 download $3) with (partition assign$4) near6 (space storage) and @ay<"2004" not S27	US-PGPUB; USPAT	OR	ON	2011/03/14 14:59
S31	28	directly near6 (transfer $4 download$3) with (server website web near3 page) with (partition assign$4 user client) near6 (space storage) and @ay<"2004" not S27	US-PGPUB; USPAT	OR	ON	2011/03/14 15:05
S33	9	("20020095547" | "5926834" | "6073209" | "6304881" | "6351776" | "6449688" | "6735623" | "6745207" | "6745303").PN. OR ("6839743").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/03/14 15:45
S35	76	(("5544320" | "5696901" | "5771354" | "5861883" | "5901228" | "5940823" | "5956490" | "5987454" | "5987506" | "6003030" | "6009433" | "6014651" | "6021433" | "6035325" | "6049877" | "6061798" | "6119229" | "6128624" | "6128627" | "6138158" | "6151601" | "6154738" | "6173318" | "6175842").PN. OR ("6351776").URPN.) and @ay<"2004"	US-PGPUB; USPAT; USOCR	OR	ON	2011/03/14 15:51

S34	105	("5544320" | "5696901" | "5771354" | "5861883" | "5901228" | "5940823" | "5956490" | "5987454" | "5987506" | "6003030" | "6009433" | "6014651" | "6021433" | "6035325" | "6049877" | "6061798" | "6119229" | "6128624" | "6128627" | "6138158" | "6151601" | "6154738" | "6173318" | "6175842").PN. OR ("6351776").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/03/14 15:51
L3	82	(assign$4 allocat$5) with (space storage) same (user client) and direct$2 with (transfer $4 download$3) with (partition assign$4 space storage) and @ay<"2004" and (administrator manager) with (allocat $5 partition$3 assign $6) with (storage space)	US-PGPUB; USPAT	OR	ON	2011/03/16 12:32
L4	28	(assign$4 allocat$5) with (space storage) same (user client) and direct$2 with (transfer $4 download$3) with (partition assign$4 space storage) and @ay<"2004" and (administrator) with (allocat$5 partition$3 assign$6) with (storage space)	US-PGPUB; USPAT	OR	ON	2011/03/16 12:35

L7	49	(assign$4 allocat$5) with (partition$3 virtual) near5 (space storage) same (user client) and @ay<"2004" and (administrator) with (allocat$5 partition$3 assign$6) with (storage space)	US-PGPUB; USPAT	OR	ON	2011/03/16 12:53
L16	38	("20010054081" | "20020059402" | "20020107806" | "20030050046" | "20030055870" | "20030220983" | "20040038675" | "20040128365" | "20050044191" | "20050210120" | "5418837" | "5629980" | "6009401" | "6128661" | "6134593" | "6275575" | "6292473" | "6308061" | "6353792" | "6366791" | "6496692" | "6512919" | "6516318" | "6629130" | "6701378" | "6799165" | "6799277" | "6832230" | "6941270" | "6959325" | "6985927" | "7035918" | "7080051" | "7113765" | "7113981" | "7266365" | "7294776" | "7363026").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/03/16 14:22

EAST Search History (Interference)

<This search history is empty>

3/16/2011 2:26:44 PM
C:\Documents and Settings\dchankong\My Documents\EAST\Workspaces\10726897.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	10726897	TSAO, SHENG (TED)
	Examiner	Art Unit
	DOHM CHANKONG	2452

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
east text search	3/16/11	DC

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/726,897	12/04/2003	Sheng (Ted) Tsao	

CONFIRMATION NO. 4178

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
SAN JOSE, CA 95132

PUBLICATION NOTICE

Title: Use of wireless devices' external storage

Publication No.US-2010-0005153-A1
Publication Date:01/07/2010

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

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Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/726,897		Sheng (Ted) Tsao	

CONFIRMATION NO. 4178

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
SAN JOSE, CA 95132

WITHDRAWAL NOTICE

OC000000037926607

Date Mailed: 09/28/2009

Letter Regarding a New Notice and/or the Status of the Application

If a new notice or Filing Receipt is enclosed, applicant may disregard the previous notice mailed on 12/07/2004. The time period for reply runs from the mail date of the new notice. Within the time period for reply, applicant is required to file a reply in compliance with the requirements set forth in the new notice to avoid abandonment of the application.

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web. https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

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If the reply is not filed electronically via EFS-Web, the reply must be accompanied by a copy of the new notice.

If the Office previously granted a petition to withdraw the holding of abandonment or a petition to revive under 37 CFR 1.137, the status of the application has been returned to pending status.

/ylueng/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
10/726,897	12/04/2003	2186	486		21	3

CONFIRMATION NO. 4178

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
SAN JOSE, CA 95132

UPDATED FILING RECEIPT

OC000000038008614

Date Mailed: 09/28/2009

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Sheng (Ted) Tsao, San Jose, CA;

Power of Attorney: None

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 03/05/2004

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 10/726,897**

Projected Publication Date: 01/07/2010

Non-Publication Request: No

Early Publication Request: No
** **SMALL ENTITY** **

Title

Use of wireless devices' external storage

Preliminary Class

711

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/726,897	12/04/2003	Sheng (Ted) Tai Tsao	

CONFIRMATION NO. 4178

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
SAN JOSE, CA 95132

FORMALITIES LETTER

OC0000000012036294

Adjustment date: 09/28/2009 VVAN11
01/24/2005 WASFAW1 00000009 10726897
02 FC:1999 -385.00 OP

Date Mailed: 12/13/2004

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is insufficient.
  Applicant must submit $ **10** *to complete the basic filing fee for a small entity.*
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125, is required. The specification, claims, or abstract page(s) submitted is not acceptable and cannot be scanned or properly stored because:
  - The line spacing on the specification, claims, or abstract is not 1½ or double spaced (see 37 CFR 1.52(b)).

SUMMARY OF FEES DUE:

Adjustment date: 01/24/2005 WASFAW1
12/05/2003 WABRHAM1 00000075 10726897
01 FC:2001 -375.00 OP

Total additional fee(s) required for this application is $75 for a Small Entity

- $10 Statutory basic filing fee.
- $65 Late oath or declaration Surcharge.

01/24/2005 WASFAW1 00000009 10726897
01 FC:2051 65.00 OP
02 FC:1999 385.00 OP

09/28/2009 VVAN11 00000011 10726897
01 FC:2001 395.00 OP

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
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Initial Patent Examination Division (703) 308-1202
PART 2 - COPY TO BE RETURNED WITH RESPONSE

Electronic Acknowledgement Receipt

EFS ID:	5505813
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
09/28/2009 VVAN11 00000010 10726897 01 FC:2202 26.00 DP	
Title of Invention: Adjustment date: 09/28/2009 VVAN11 06/12/2009 INTEFSW 00007888 10726897 01 FC:1202 -52.00 DP	Use of wireless devices' external storage 09/28/2009 VVAN11 00000012 10726897 01 FC:9998 16.00 DP
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	12-JUN-2009
Filing Date:	04-DEC-2003
Time Stamp:	13:25:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$52

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao, et al.	
SERIAL NO.:	10/726,897	Confirmation No. 4178
FILING DATE:	07/02/2004	
TITLE:	The Use of Wireless Devices' External Storage	
EXAMINER:		
ART UNIT:	2186	

Mail Stop Amendment

COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, VA 22313-1450

Preliminary Amendment

Dear Sir:

please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Drawings begin on page 3 of this paper and include an attached replacement sheets.

Amendments to the Abstract begin on page 4 of this paper and include an attached replacement sheet.

Amendments to the Claims are reflected in the listing of claims which begin on page 5 of this paper.

Remarks/Arguments begin on page 13 of this paper.

Appendix, including following documents, begins on page 14 of this paper:

(1) Substitute specification;

(2) Replacement sheet for abstract; and

(3) Replacement figures.

AMENDMENTS TO THE SPECIFICATION

Applicant elects to withdraw amendments to the specification filed after the original filing date of 12/04/2003. A substitute specification, which is the original version filed on 12/04/2003, is included in the Appendix of this paper.

AMENDMENTS TO THE DRAWINGS

Applicant elects to withdraw amendments and/or additional figure(s) filed after the original filing date of 12/04/2003. Replacement sheets of all figures, which is the original version filed on 12/04/2003, are included in the Appendix of this paper.

AMENDMENT TO THE ABSTRACT

Applicant elects to withdraw any amendments to the abstract filed after the original filing date of 12/04/2003. A replacement sheet for abstract is included in the Appendix of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claim

Claims 1 – 10 and claim 11-30 canceled

31. (New) A method of out-band downloading a file from a web-site to a targeted system comprising:

facilitating a user from a web-browser of a system via a network of LAN, Intranet or Internet to accesses a web-page on a remote web site, where the web-page contains file download information including the file path, the IP address of the remote web site, and related information for downloading;

instructing the system to obtain the file download information contained in the web page from the cached web page on the system;

instructing the system to send the obtained file download information to a permitted targeted system via the network;

instructing the targeted system to receive said file download information and send a download request to the remote web site via the network; and

instructing the targeted system to receiving the downloading file stream from the remote web-site directly into a designated file system of the targeted system without goes through said system.

32. (New) The method of claim 31, wherein said web browser of a system and the targeted system further includes:

provide the user from a wireless device's web browser to access the web page, provide the user from a personal desktop or laptop to access the web page, and provide user from a server's web browser to access the web page; and

provide another remote laptop, desktop, or server as the targeted system.

33. (New) A system provides external storage for wireless devices that comprises:

a server unit connects to a network and to be accessed by one or more users from each of their own web browser via the network of LAN, Intranet or Internet;

the server unit is configured with one or more storage devices, which to be partitioned by one or more administration users from each of their own web browser over the network, and be assigned to each wireless device as its external storage; and

the server unit facilitates each user of the wireless devices from his/her web browser to perform tasks of accessing and managing the files and file-folders in the wireless device's assigned external storage, where the tasks include downloading files from remote web sites into the assigned external storage on the server unit; and

the server unit also facilitates each user's one or more tasks to be run concurrently in the user's web browser.

34. (New) The system of the claim 33, wherein the server unit facilitates each administration user from a web browser to select one storage device at time from the displayed a list of one or more storage devices on the server unit to partition the selected storage device into one or more storage volumes for all storage devices on the list in response to the requirement of providing desired sized external storage to each wireless device.

35. (New) The system of the claim 34, wherein the server unit also facilitates each administration user from a web browser to create one file system on a corresponding storage volume at a time for all storage volumes; and for all file systems, to assign a file system to a corresponding user's wireless device for the user from the wireless device's web browser to access and manage files and file-folders on the assigned external storage.

36. (New) The claim 35, wherein said user from wireless device's web browser to access and manage the files and file-folders on the assigned external storage further includes:

creating file folders and directories structure on the assigned storage, storing files on the wireless device into the assigned storage, performing data management tasks for the assigned storage including deleting, renaming, moving, and copying file-folders, directories and files, and including accessing and retrieving files from the assigned external storage to the user's wireless device; wherein said files includes streaming video, audio, digital picture, and message file.

37. (New) The system of claim 33, wherein said downloading files from a remote web site to the assigned storage on the server unit further includes:

facilitating a user from a wireless device's web-browser via a network to select one remote web site at a time for accessing a web-page on a remote web site, where the web-page contains a file download information including file path, and IP address of the remote web site for downloading;

instructing the wireless device to obtain the file download information contained in the web page from the cached web page data on the wireless device;

instructing the wireless device to send the obtained file download information to the server unit via the network;

instructing the server unit to receive said file download information and send a download request to the remote web site via the network; and

instructing the server unit to receiving the downloading file stream from the remote web-site directly into the user's wireless device's assigned external storage without goes through the wireless device.

38. (New) The system of claim 33, wherein said facilitates user from wireless device's web browser to perform tasks further includes: the server unit facilitates to

display one or more storage devices of the server unit into administration user's web browser in response to the requirement for the user to perform partitioning each storage device into one or more storages volume;

display one or more storage volumes of the server unit into administration user's web browser in response to the requirement for the user to perform creating a file system for each corresponding storage volume; and

display assigned external file system into a corresponding user's wireless device's web browser in response to the user of the wireless device to perform tasks of accessing and managing one or more files and file-folder in the assigned external storage.

39. (New) The system of claim 33 further includes:

provide administration user from wireless device's web browser to perform tasks including partitioning the storage devices and creating file systems for the server unit;

provide administration user from laptop/desktop's web browser to perform tasks including partitioning the storage devices and creating file systems for the server unit; and

provide administration user from server unit's web browser to perform tasks including partitioning the storage devices and creating file systems for the server unit.

40. (New) A virtual server provides external storage for one or more wireless devices that comprises:

one or more server units, where each server unit configured with one or more storage devices; and

a control system connects and controls said one or more server units via a network of LAN, Intranet or Internet to form a central controlled distributed scalable virtual machine ("CCDSVM") to be accessed by one or more users, wherein

the control system facilitates each administration user from a web browser over the network to partition one or more storage devices on each server unit and to assign each partitioned storage volume of each storage device to a corresponding user's wireless devices as external storage; and wherein

the control system also facilitates each user from a wireless device's web browser via the network to perform tasks of accessing and managing one or more files and file-folders on the assigned external storage of a assigned server unit, and the control system also facilitates each user's one or more tasks to be run concurrently in the user's web browser; and wherein

each server unit provides the services and data to each assigned wireless devices in dependent of other server units and without going through the control system in response to the user of each wireless device performing said tasks.

41. (New) The virtual server of the claim 40, wherein the control system facilitates each administration user from a web browser to partition each storage device of each server unit into one or more storage volumes for all storage of the virtual server in response to the requirement of providing desired sized external storage to each user's wireless device.

42. (New) The virtual server of the claim 40, wherein the control system also facilitates each administration user from a web browser to create one file system on a corresponding storage volume at a time for all storage devices on each server unit; and further to create one or more file-folders/directories structure on each file system.

43. (New) The virtual server of the claim 40, wherein the control system also facilitates to assign each file system to a corresponding wireless device, and facilitates the user of each wireless device from its web browser to access and manage one or more files and file-folders on the assigned external storage.

44. (New) The claim 43, wherein said provide the user from wireless device's web browser to access and manage assigned external storage includes:

creating file folders and directories structure on the assigned storage, storing files on the wireless device into the assigned external storage, performing data management tasks for the assigned storage including deleting, renaming, moving, and copying file- folders/directories and files, and including accessing and retrieving files from assigned external storage to the user's wireless device via the web browser; wherein said files includes streaming video, audio, digital picture, and message file.

45. (New) The claim 43, wherein said provide the user from wireless device to access and manage assigned external storage further includes:

facilitating a user from a wireless device's web-browser via a network to select one remote web site at a time for accessing a web-page on a remote web site, where the web-page contains a file download information including file path, and IP address of the remote web site for downloading;

instructing the wireless device to obtain the file download information from the cached web page on the wireless device;

instructing the wireless device to send the obtained file download information to its assigned server unit in the virtual server via the network;

instructing the assigned server unit to receive said file download information and send a download request to the remote web site via the network; and

instructing the assigned server unit to receive and deposit the downloading file stream from the remote web-site directly into the user's assigned file system on the server unit without goes through the wireless device.

46. (New) The virtual server of claim 40, wherein the control system further facilitates

displaying one or more server units and each server unit's one or more storage devices into each administration user's web browser in response to the requirement for the user to perform tasks of partitioning each storage device into one or more storages volume;

displaying one or more storage volumes of each server unit into administration user's web browser in response to the requirement for the user to perform tasks of creating a file system for each corresponding storage volume; and

displaying assigned external file system on the assigned system unit into a corresponding wireless device's web browser in response to the user of the wireless device to perform tasks of accessing and managing the assigned external storage.

47. (New) The claim 46, wherein the control system also facilitates each user including the administration user from web browser to specify the task information for performing each task, and to transmit each task information from the web browser to the control system.

48. (New) The claim 47 further includes:

provide the control system to receive, identify and runs each task in the background, distribute each task to a corresponding server unit for actual executing, and provide task status or result back to administration user's web browser in response to each user's tasks.

49. (New) The claim 47 further includes:

provide each server unit delivers the requested application service and data directly back to the corresponding user's wireless devices without going through the control system and independent of other server units in response to each user's performed tasks of accessing application and data service.

50. (New) The virtual server of claim 40 further includes:

form a virtual server on a LAN to be accessed by one or more users including the administration user from each of their own web browser via said network;

form a virtual server over a Intranet to be accessed by one or more users including the administration user from each of their own web browser via said network; and

form a virtual server over the Internet to be accessed by one or more users including the administration user from each of their own web browser via said network;

51. (New) The virtual claim 50 further includes:

provide administration user from wireless device's web browser to perform tasks including partitioning the storage devices and creating file systems for the server unit;

provide administration user from laptop/desktop's web browser to perform tasks including partitioning the storage devices and creating file systems for the server unit; and

provide administration user from server unit's web browser to perform tasks including partitioning the storage devices and creating file systems for the server unit.

REMARKS

Applicants has recognized that this application being filed on 12/04/2003 and requests examiner to start processing this application as soon as possible. The Examiner is invited to contact Sheng Tai (Ted) Tsao at 408-813-0536.

Respectfully submitted,

Dated: 6/9/2009

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Appendix

Appendix includes the following documents:

(1) Substitute specification;

(2) Replacement sheet for abstract; and

(3) Replacement figures.

Substitute Application
For
United States Patent Application No. 10/726,897

Entitled

The Use of Wireless Devices' External Storage

Inventor

Sheng Tai (Ted) Tsao, a citizen of the United States of America

The Use of Wireless Devices' External Storage

Field of the Invention

This invention is the continuation of the previous invention, application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System", where the claim 20 item a), b), d), claim 30 item b), and together with claim 36 represent an invention of using storage of a server system as the external storage for wireless devices. This invention focuses on how can a wireless device user actually use external storage. Specially it focus on how can a wireless device to download data to its external storage, which its principle has preliminary described in claim 19) of previous invention, application number 60/402,626 of "IP Based Distributed Virtual SAN", to transmit data in wireless environment.

Background Information

a) Terminology:

The Internal Storage of a System:

The storage media such as hard disk drives, memory sticks, memory etc is connected to a system directly through bus or a few inches of cable. Therefore, the storage media actually is a component of a system in a same enclosure.

The External Storage of a System:

The storage media is not a component of a system in a same enclosure. Therefore, they has to be connected through longer cable such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless media etc. The storage media of external storage could be

magnetic hard disk drives, solid sate disk, optical storage drives, memory card, etc. and could be in any form such as Raid, which usually consists a group of hard disk drives.

The Storage Partition, its Volumes, and the Corresponding File System:

To effectively use the storage system, the storage usually needs to be partitioned into small volumes. After partition, each volumes can be used to establish file systems on it. To simplify the discussion, the term of the storage volume, its corresponding file system, and the term of the partition of a storage are used without differentiation in this invention.

CCDSVM:

It is an abbreviation for central controlled distributed scalable virtual machine system. The CCDSVM allows a control management station to control group of systems and provide distributed services to client system in Internet, Intranet, and LAN environment.

ISP & ASP:

Internet service provider and application service provider.

b) Figures:

Fig. 1: This is the same figure as Fig. 1 of "Concurrent Web Based Multi-task Support for Control Management System" with exception of renaming console host as wireless device.

Fig. 2: This is the same figure as Fig. 1 except that it shows the more details of storage system controlled by the server. In addition, multiple wireless devices are presented.

Fig. 3: This figure shows the scheme of wireless device download contents from ISP/ASP or other web sites to the external storage of this wireless device.

Fig. 4: This is the same figure as Fig. 1 of "IP Based Distributed Virtual SAN" with exception that each IP storage server provide file system as external storage for wireless devices instead of provide IP based virtual SAN service. Also, each host actually is a wireless device.

c) Assumptions:

Unless specified, the programming language, the protocols used by each software modules, and the system used described in this invention are assumed to be the same as described in previous patents submission.

In the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

Brief Description of the Invention

Today the wireless users commonly face the problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which usually limited to 256MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple GB of storage for their wireless devices as well as allow users to use GB storage for their multimedia application, the storage on a server can be used as external storage for wireless devices. This technology has been claimed in previous two patents submission by the same author. Now we can examine how does the external storage actually be

used by the wireless device. We can let each server unit (3 of Fig. 2) partitions its storage system in such way that each volumes will have multi-GB in size. Therefore, each user from web-browser of any of wireless devices can exclusively be assigned and exclusively access a specific storage volume on a server unit. For example, if we need to provide each user 4GB of storage space, then a 160GB disk drive can support 40 users. A 4096GB storage system on a server unit can support 1024 user. Further, any data on the wireless device can be transmitted to assigned storage volumes on a server unit. In addition, the user on the wireless device also can download the multimedia data from any ISP or ASP to the assigned storage volumes of a designated server unit through out-band approach (Fig. 3). Finally, the user can use their web-browser, which has functionality of invoking embedded video or music, to enjoy their stored multimedia contents.

These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures where:

Description of the Drawings

Fig. 1: This figure demonstrates the network connection between a wireless device and a server, where

a) Net (2) represent a communication link, which may combined with wireless and non-wireless connection media and guarantee the communication packet can be sent/received between wireless device and the server. It is also assume that the net (2) infrastructure is built up in such way that the user from web-browser of a wireless device can access and browse any web-site on the Internet, Intranet.

b) As described in previous patents submission, the console support software (5) on server (3) can support web-based multi-task for users on web-browser (8) of wireless device (1). Further, the user on the web-browser (8) is able to perform creating structured layered files/directory or folders, and perform data management operations such as delete, move,

copy, rename for data files or folders/directories etc on the assigned storage volume of server (3).

c) As described in previous patents submission, the other software modules (9) of wireless device (1) is also capable to send data to or receive data from other service modules (7) of server (3) via communication link (2) through suitable IP or non-IP based protocol. The data file being sent cold be a digital photo picture, a message etc..

d) As described in previous patents submission, the console supporting software (5) of server (3) and the other software modules (9) of wireless device (1) can be implemented with any suitable languages such as C, C++, Java, etc.

e) As described in previous patents submission, the web-browser (8) of wireless device (1) can be any suitable software, which is capable to communication with web server software (4) on server (3) or with any other web server through HTTP protocol.

Fig. 2: This figure demonstrated how does the storage of a server can be assigned to multiple wireless devices as their external storage.

a) As described in previous patents submitting, the storage system (10) of server (3) can be partitioned into multiple volumes (11) by administration staff through web-console (13) of web console host (12).

b) The storage system (10) of server (3) can be partitioned in such way that each wireless devices can be assigned with a volume of desired size, which can be best supported by the server for maximum number of wireless devices.

c) As described in previous patents submitting, the storage connection media could be any kinds such as SCSI cable, IP cable, Fiber cable etc. The storage system itself could be various types.

d) It assumes that the storage system can be accessed through IP or non-IP based network and protocols.

Fig. 3: This figure demonstrated how a user from a web-browser (8) on wireless devices(1) can download data from a known web-site (12) to his/her assigned external storage (10) of server (3). The dash-lined path (a) represents a communication channel between wireless device (1) and any remote download web-site (12), which provides the contents for web download. The dash-lined path (b) represent a communication channel between wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between wireless devices (1) and the remote web-server (12), which provide download contents.

The Detailed Description of the Invention

1: The Use of the External Storage of the Wireless Device:

The Fig. 2 shows a simplified diagram of the wireless devices (1 of Fig. 2) using external storage system (10 of Fig. 2) of a server (3 of Fig. 2), which will effectively resolve the storage limitation problem of wireless devices (1 of Fig. 2).

- Partition storage volumes (Fig. 2)

With this invention, the entire storage (10 of Fig. 2) on a server (3 of Fig. 2) need to be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB each, which will allow the server to serve maximum number of wireless devices (1 of Fig. 2). With the web console support software (5 of

Fig. 2) of the server (3 of Fig. 2), The task of partitioning storage can be done through web-console (13 of Fig. 2) on console host (12 of Fig. 2) by administrative staff.

In order to support such storage partition, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of console host (12 of Fig. 2). This including the storage device name, storage total size etc. Second, the administration staff on console host (12 of Fig. 2) can use web-console (13 of Fig. 2) to fill and to send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from web-console (13 of Fig. 2) of console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition, which divides entire storage into multiple small volumes. Finally, for each small storage volume, a corresponding file system could be built up.

- Assign storage volumes (Fig. 2):

Each storage volumes with its corresponding file system (11 of Fig. 2) of the storage (10 of Fig. 2) on server (3 of Fig. 2) needs to be exclusively assigned and exported to a given specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) on server (3 of Fig. 2).

- Data and storage volume management (Fig. 2)

1) With the support of console support software modules (5 of Fig 2) of the server system (3 of Fig. 2), the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can setup the folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can

perform all data management operations such as delete, copy, move, rename etc. on that file system.

In order to support such data management on external storage (10 of Fig. 2) from web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2), first the console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2) must communicate with web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2). Therefore, the user from web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2). These operations include establishing folder/directory, copying, moving, or reaming data file etc. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server system (3 of Fig. 2) actually performs these operations on the assigned file system of assigned external storage volume (11 of Fig. 2) on the server system (3 of Fig. 2).

- Store data from wireless device into external storage (Fig. 2)

To store the data such as digital photo pictures, or messages into the assigned file system on external storage (10 of Fig. 2) of a server (3 of Fig. 2), the other software modules (9 of Fig. 2) of wireless device (1 of Fig. 2) need to send these data to other service modules (7 of Fig. 2) of server (3 of Fig. 2) via communication link between them. Upon receiving data, the other service modules (7 of Fig. 2) of server (3 of Fig. 2) write these data to assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2). The protocol used between these two communication entities could be either IP or non-IP based protocol.

- Download data from remote web server site into external storage (Fig. 3)

If the wireless device (1 of Fig. 3) user want to download data from remote web server (12 of Fig. 3) into assigned file system (11 of Fig. 3) of the external storage (10 of Fig. 3) on server (3 of Fig. 3), the following steps are required:

1) The user from web-browser (8 of Fig. 3) of a specific wireless device (1 of Fig. 3) accesses a remote download web server site (12 of Fig. 3) and obtain the information for download via path (a) of Fig. 3. For example, to get a web-page, which contains the data name for download.
2) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) obtains download information, which becomes available in the cached web-pages on wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the download site (12 of Fig. 3).
3) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) send the obtained download information to other service modules (7 of Fig. 3) of storage server (3 of Fig. 3) via path (b) of Fig. 3.
4) Upon receiving the download information from a specific wireless device (1), the other service module (7 of Fig. 3) of the storage server (3 of Fig. 3) send a web download request to download web-site (12 of Fig. 3) via path (c) of Fig. 3 based on download information obtained. It then receives the download information data from web server of download web-site (12 of Fig. 3).
5) Upon receiving downloaded data, the other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write these data for the specific wireless device (1 of Fig. 3) into the assigned file system (11 of Fig. 3) on the server (3 of Fig. 3).

- **Retrieve data from external storage of wireless device**

1) If a web-browser has embedded video or music functionality, the web-browser (8 of Fig.) of a wireless device (1 of Fig. 2) can be used to retrieve and play those multimedia data file such as

video or music stored in wireless device's external storage volume (10 of Fig.2), which actually located on a server (3 of Fig. 2).

2) If there is needs, the other software module (9 of Fig. 2) of wireless device (1 of Fig. 2) also can retrieve data file from assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2).

- **Support external storage for large number of wireless devices**

If we need to provide each user 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on a server unit can support 2024 user. Each server only can efficiently support a limited size of the storage system. In order to support a large number of wireless devices with external storage such as 500,000 of them, a larger number of servers are required, in this case 250 servers is required. In order to let a larger number of the server to effectively support larger number of the wireless devices, an infrastructure like CCDSVM is desirable, which has been described in previous patents submission. With CCDSVM the control management station can control larger number of storage servers to provide external storage for huge number of the wireless devices.

Replacement Figures For

US Patent Application No. 10/726,897

Entitled

The Use of Wireless Devices' External Storage

Wireless devices supports in a simple environment

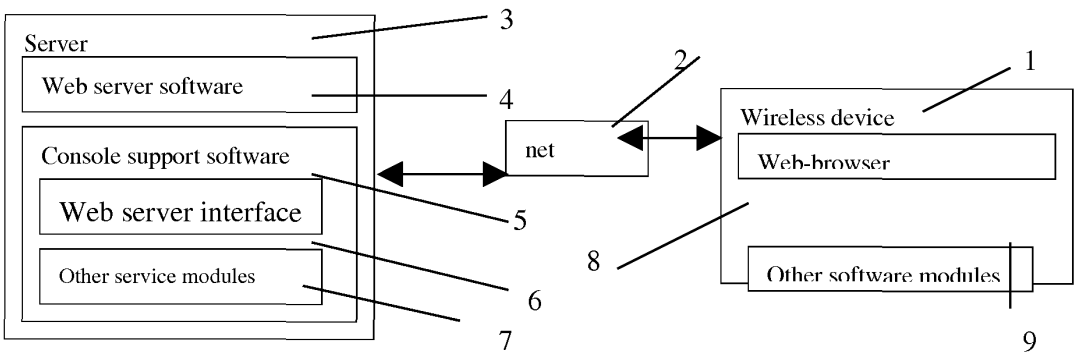


Fig. 1

Wireless devices access external storage through web browser

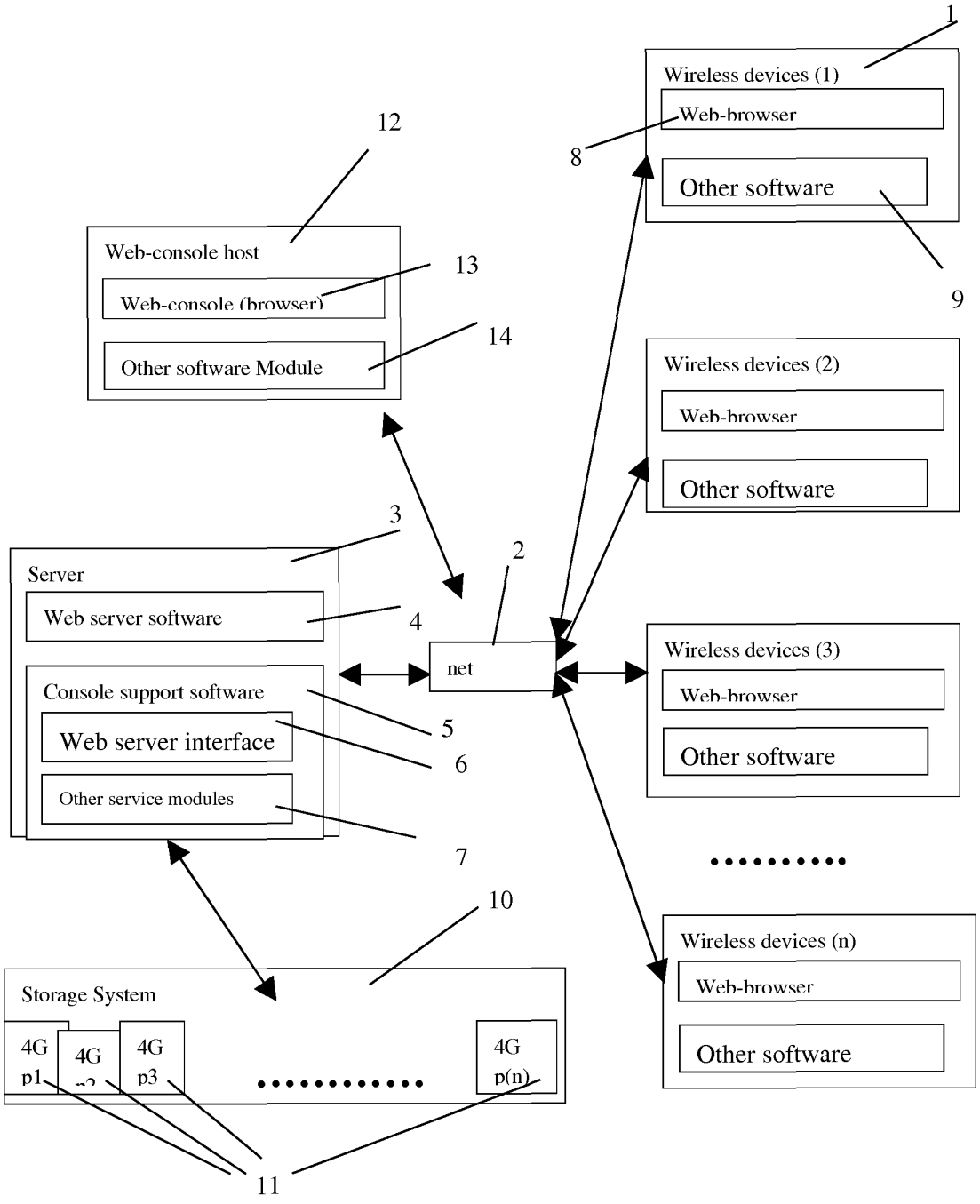


Fig. 2

Wireless out-band download

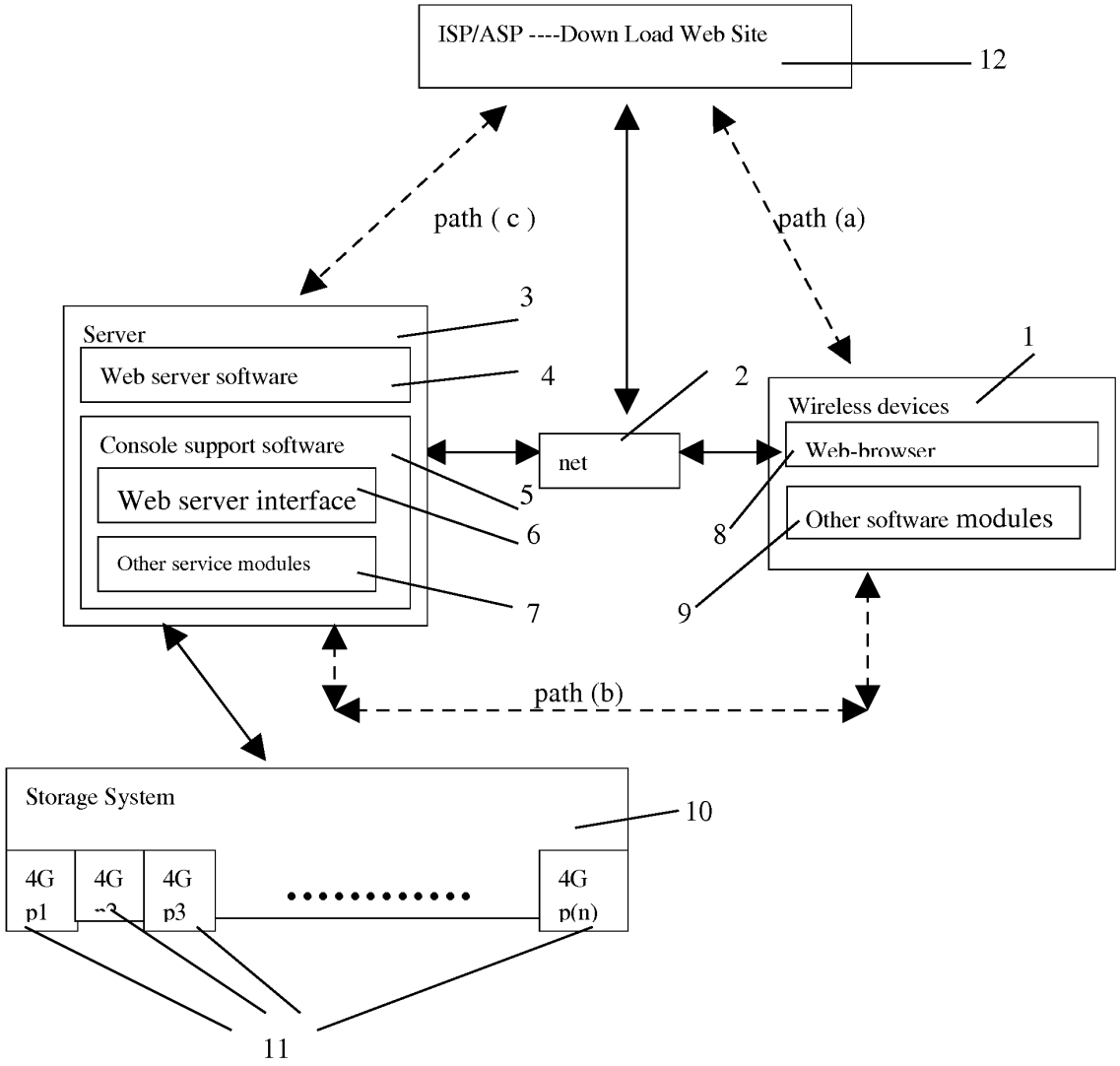


Fig. 3

Web server interface

Web browser

The CCDSVM Support External Device for Huge Number of Wireless Device

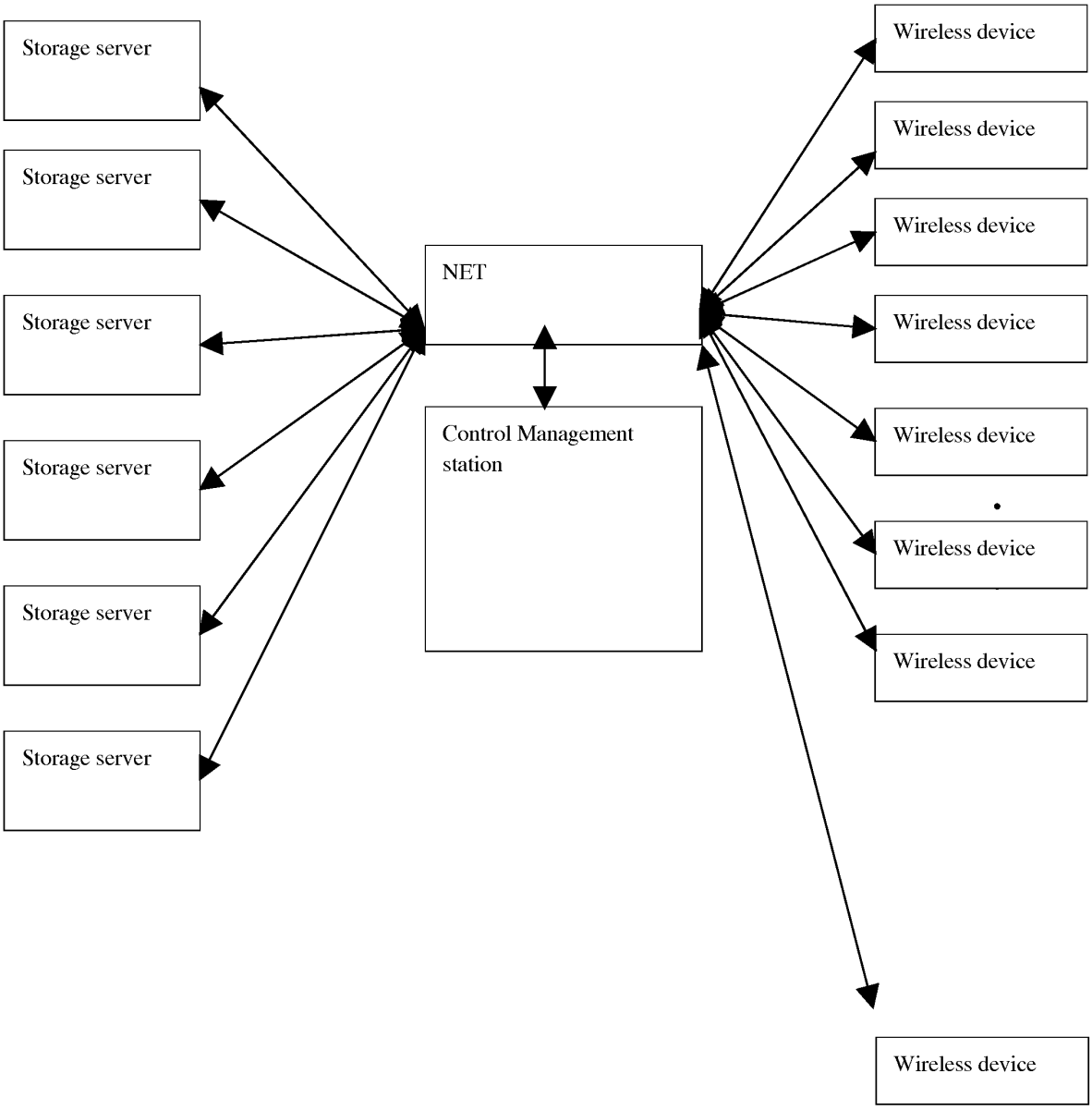


Fig. 4

Replacement Sheet for ABSTRACTION

FOR

United States Patent Application No. 10/726,897

Entitled

The Use of Wireless Devices' External Storage

Abstraction

Adapting web-based external storage, wireless device can posses huge amount of storage that current any wireless device's internal storage can not provide. To effectively let the storage server providing external storage (file system) for wireless device, the storage of a storage server need to be partitioned into multiple small storage volume and need to be exported to each specific wireless device. The console support software coupled with web-server software of a server provides both users of wireless device and console through web-browser to perform tasks of creating and utilizing external storage (file system). To support larger number of wireless devices with external storage, a central controlled distributed scalable virtual machine infrastructure can be deployed. The larger number of storage server controlled by a central control system can satisfy unlimited wireless devices external storage needs.

Electronic Patent Application Fee Transmittal

Application Number:	10726897
Filing Date:	04-Dec-2003
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Filer:	Sheng Tai Tsao
Attorney Docket Number:	

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	1202	1	52	52
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
		Total in USD ($)		**52**

Electronic Acknowledgement Receipt	
EFS ID:	5505813
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	12-JUN-2009
Filing Date:	04-DEC-2003
Time Stamp:	13:25:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$52

RAM confirmation Number	7888
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Claims	6-10-09-amend.pdf	365306 f84f6cbdb4ea75f92434084f3ada35522f78b fba	no	14
Warnings:					
Information:					
2	Specification	original-spec-6-9-09.pdf	352033 1409a34365eb429be991ec9cc1e3ef24e39 937e5	no	11
Warnings:					
Information:					
3	Drawings-only black and white line drawings	orig-figs-6-9-09.pdf	353984 86d92a2afa519d1c386a62f2a2f96c316f97b b85	no	5
Warnings:					
Information:					
4	Abstract	orig-Abstraction-6-9-09.pdf	303607 598d9dec7ab057b4daa9c7d803aad082d3 99947c	no	2
Warnings:					
Information:					
5	Fee Worksheet (PTO-875)	fee-info.pdf	29421 1971fc8bc2c7bce132d513ca56067e65638c 3d72	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1404351		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Sheng Tai (Ted) Tsao	
APPLICATION NO.:	10/726,897	
TITLE:	A Method and Apparatus of Providing External Storage of Wireless Devices	
FILING DATE:	12/04/2003	Confirmation No. 4178
EXAMINER:		
ART UNIT:	2186	

Mail Stop: Preliminary Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Preliminary Amendment For continuation Application

Dear Sir:

The following amendment is based on last amendment made on 1/30/2008:

1) The amendment in specification starts on page 2 and end on page 18. The amendment mainly is focus on adding prior application 10/116,511 as a continuation-in-part of current application. Also, added descriptions that disclosed in 10/713,904 and 10/713, 905, and added description for attached total 25 new figures.

2) The amendment in drawing as follow:
   - Added new Fig. 5 that is disclosed in 10/713,904 and 10/713,905.
   - Added new Fig. 6, which is disclosed in 10/116,511.
   - Added 23 new figures from 7A to 7F, 8A to 8D, 9A to 9D, 10A to 10F, and 11A to 11C. These figures are registered materials of 2002 copyright registration submitted to US Library of Congress for a version of product created in 2002 and related to present invention, which is also related to application 10/713,904, 10/713,905 and in 10/116,511.

3) There is no new matter being added and there is no amendment in claims and abstraction.

Respectfully submitted

Dated: 10/29/2008

Sheng Tai (Ted) Tsao
2979 Heidi Drive
San Jose, CA 95132

Amendment of specification. Please replace the amended contents bellow.

A Method and Apparatus of Providing External Storage of Wireless Devices

Cross-References To Related Application(s)

[0001] This application is the continuation-in-part of United States Patent Application Se. No.10/713,904 in the name of the same inventor and entitled "Concurrent Web Based Multi-Task Support for Control Management System" and is also a continuation-in-part of United States Patent Application Se. No.10/713,905 entitled "Method and Apparatus for web-based Storage On Demand" and Application Se. No. 10/116,511 entitled "Intelligent Distributed Virtual Server" in the name of the same inventor.

Field of Invention

[0002] This invention relates to provide wireless user having a web-based working environment to use larger number of external storage.

Brief Description of the Invention

[0003] Today wireless users commonly face the problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which usually limited to 256MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple GB of storage for their wireless devices as well as allow users to use gig-bytes storage for multimedia application, the storage on a server can be used as the external storage for wireless devices.

[0004] In one example that let each server unit (3 of Fig. 2) partitions its storage system in such way that each volumes will have multi-gig-bytes in size. Therefore, each user from web-browser of any of wireless devices can exclusively be assigned for accessing a specific storage volume on a server unit. In one embodiment, for example, if to provide each user 4GB of storage space, then a 160GB disk drive can support 40 users. A 4096GB storage system on a server unit can support 1024 user.

[0005] Further, any data on the wireless device can be transmitted to assigned storage volumes on a server unit. In addition, in one embodiment, the user on the wireless device can download the multimedia data from any ISP or ASP to the assigned storage volumes of a designated server unit through an out-band approach (Fig. 3). Finally, the user can use their web-browser to invoke embedded video or music, to enjoy their stored multimedia contents.

[0006] These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures where:

Brief Description of The Drawing

[0007] Fig. 1 has illustrated a wireless device (1) configured with a web-browser (8) and can access a server system (3).

[0008] Fig. 2 has illustrated one or multiple wireless devices (1), each configured with web-browser (8), can access the assigned storage volumes of storage system on a server system (3).

[0009] Fig. 3 has illustrated a scheme of present invention that how does a wireless device can download content file/data from ISP/ASP or other web sites to the assigned external storage of a wireless device. The external storage server configured with one or more storage devices such as RAID, IDE or SCSI or optical disk drives.

[00010] Fig. 4 has illustrated a scheme of present invention that how to support unlimited wireless devices to have larger size of external storage, which is an example of central controlled scalable distributed virtual server (CCDSVM). Each storage server and each wireless device have identical configuration as the server system (3) and wireless device (1) illustrated in Fig. 2. The control system has identical configuration as control management station (15) in Fig. 5.

[00011] Fig. 5 has illustrated a typical central controlled distributed scalable virtual machine ("CCDSVM").

[00012] Fig. 6 illustrates a typical computing system, which could be a server, laptop or desktop or handheld devices of PDA or cell phone etc. without limits. It is connected into a network of LAN or Intranet or Internet.

[00013] Fig. 7A has illustrated one embodiment that control station (15) of Fig. 5 provisions system units (3) of Fig. 5 and displays them in each user's web browser such that

user can selecting any system unit and submit a task for further to display major resources information on that system unit in CCDSVM; Fig. 7B has illustrated that the major system resource information of a system unit of Fig. 5 is displayed in user's web browser after said user mentioned in Fig. 7A had submitted requested task, where displayed resources information include system information such as system name, IP address, OS type and version, and processes/threads information; and various hardware information such as CPU, memory, storage, network information. Also each resource are displayed with associated attributes such as name, type, size, version number, and timestamps etc. without limits.

[00014] Fig. 7C, Fig. 7D, and Fig. 7F have illustrated that in one embodiment the status of each provisioned system unit (3) of Fig. 5 such as active or down or spare can be displayed in each user's web browser and can be monitored. Also, Fig. 7E has illustrated that the status of a system unit can be changed from active to spare through online operation via displayed operation menu and displayed list of system units.

[00015] Fig. 8A to Fig. 8 D, in one embodiment, has illustrated that the data including file and file-folder can be transferred (replicated) between any two systems in a virtual file server based on the CCDSVM. Fig. 8A has illustrated one embodiment that a list of systems in a virtual file server based on CCSVM has displayed in web browser (8) of each user along with operation options; therefore, user can select a source system (a system unit named ttsao6) and a destination system (MYADDR, which represents control station (15) also named ttsao5 in this figure) for data transfer;

[00016] Fig. 8B has illustrated another embodiment that a list of systems in CCSVM has displayed in web browser (8) of each user along with operation options such that user can select a source system (a system unit (3) named ttsao6) and a destination system (MYADDR, which is control station and also named ttsao5) for data transfer;

[00017] Fig. 8C has illustrated another embodiment that a list of systems in CCSVM has displayed in web browser (8) of each user along with operation options of "SEARCHDATA" such that user has actually find and selects a source system (a system unit named ttsao6.stt.com) and a destination system (ttsao5 that is the control station and also is named by MYADDR) for file transfer; in addition, one or more file systems along with resided one or more file-folders and files on each selected system are also displayed in web

browser; said operation options of "SEARCHDATA" option allows user to browser and walk through to search and select a desired file-folder or file for data transfer;

[00018] Fig. 8D has illustrated another embodiment that selected source and destination systems in CCSVM and selected source and destination file or file folder have being displayed in user's web browser along with a operating option of "XFERDATA"; therefore, said user is ready to transfer the desired data from source system to designated file-folder on designated targeted system just matter of hit submit button.

[00019] Fig. 9A to Fig. 9C has illustrated that how a virtual file system can be accessed by user from web browser (8) of Fig. 5; Fig. 9A illustrates that a list of systems in a virtual file server (3) based on CCDSVM and an operation button has been displayed in user's web browser; so that user is able to choose any system in the virtual file server to display each file system on system, where said system can be control station ("MYADDR", which is also named ttsao5) or one or more system units (ttsao4 and ttsao6);

[00020] Fig. 9B illustrates one embodiment that one or more file systems on a system unit (ttsao6) of virtual file serve have being displayed in user's web browser; Fig. 9C illustrates another embodiment that one or more file systems on control system (MYADDR, which is also named ttsao5) has being displayed in said user's web browser (8); in addition, the file systems in a selectable area and a submit button associated with operation for selecting file system are also displayed in user browser in both Fig. 9B and Fig. 9C.; each displayed file system includes associates attributes such as name of storage device volume name and mount point of each file system, the file system type, total number of blocks in this storage volume, the used blocks and remaining blocks of this storage device, and the percent of storage that has being used;

[00021] Fig. 9D illustrates one embodiment that one or more sub file-folders and files under a file-folder resides on a systems unit (ttsao6) has being displayed in user's web browser; also a list of options on operating menu and an associated submit button has being displayed in web browser, where displayed operating option include delete file (DELET), create new file-folder (MKDIR), copy file (COPY), move file (MOVE), rename file (RENAME); the displayed operating environment allow user to access and perform various task for file and file-folder on every system in virtual file server based on CCDSVM; each

displayed file and file-folder include its associated attributes such as file or file-folder's name, pathname, size, ownership, permission of read or write mode, timestamps, etc. without limits.

[00022] Fig. 10A to Fig. 10F illustrates a centralized storage management for system units in CCDSVM. The Fig. 10 A illustrates one embodiment that a list of system units in CCDSVM and an operation button has been displayed in user's web browser; so that user is able to choose any system unit in the CCDSVM to manage its storage devices;

[00023] Fig. 10B illustrates another embodiment that a specific system unit has been selected and displayed in user's web browser; The displayed information include the system unit's name, IP address, total number of disks, and total storage capacity; in addition, each storage device of system unit is displayed in a selectable area along with a associated submit button for operating purpose;

[00024] Fig. 10C illustrates another embodiment that one of storage devices on a system unit has being partitioned into one and more storage volumes and being displayed in user's web browser; the displayed information includes partitioned device volume name, size, starting logical block address, and ending logical block address (LBA); each displayed storage volume of a storage device can be used to make file system either on native storage system unit or by a remote system via IP based storage protocol; in addition, displayed information also includes a storage volumes selectable area, an storage operation selecting area, and an associated submit button for storage operation;

[00025] Fig. 10D illustrates one more embodiment that one of storage devices on a system unit has being partitioned into one and more storage volumes and being displayed in user's web browser; part of storage operation options are also displayed such as delete a storage volume ("DELPART"), change storage volume ("CHDSKPART") etc. without limits.

[00026] Fig. 10E and 10F illustrate an embodiment of a virtual storage volume pool of CCDSVM, which has been displayed in user's web browser; the displayed virtual storage volume pool includes each system unit's name, IP address, number of storage devices in the system unit, each partitioned storage volume and its storage volume name, size, starting logical block address (LBA) and ending logical block address;

[00027] Fig. 11A to Fig.11C illustrates one embodiment of user authentication scheme in CCDSVM environment; Fig. 11A illustrates one embodiment of a central authentication scenario, which has being displayed in a privileged user's web browser; the

displayed information includes a list of system in CCDSVM that can be assigned to each user for accessing, which could be control system or any system unit, a set of operating option for set up user authentication, the user name, password, and a specific IP address from that said user is permitted access CCDSVM;

[00028] Fig. 11B and 11C illustrate another embodiment of user authentication operation that has being displayed in user's web browser; the displayed information includes various operating option in addition to information displayed in Fig. 11A such as create user account profile (NEW), delete user account profile (DELENTRY), display user account profile (GETENTRY), and list one more user account profiles (LISTENTRY) etc. without limits;

[00029] In the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

Detailed Description Of The Invention

[00030] The following terms are used through out this patent application to describe the present invention. The internal storage media such as hard disk drives, memory sticks, memory etc is connected to a system directly through bus or a few inches of cable. Therefore, the internal storage media actually is a component of a system in a same enclosure. The external storage media is not a component of a system in a same enclosure. Therefore, they has to be connected through longer cable such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless media etc. The storage media of external storage could be magnetic hard disk drives, solid sate disk, optical storage drives, memory card, etc. and could be in any form such as Raid, which usually consisting a group of hard disk drives.

[00031] To effectively use the storage system, the storage usually needs to be partitioned into small volumes. After partition, each volumes can be used to establish a file systems on top of it. To simplify the discussion, the term of the storage volume, its corresponding file system, and the term of the partition of a storage may be used without differentiation in this invention.

[00032] Central controlled distributed scalable virtual machine system ("CCDSVM") allows a control management station to control group of systems and provide distributed services to client system in Internet, Intranet, and LAN environment.

[00033] The ISP stands for Internet service provider and the ASP stands for application service provider.

[00034] Fig. 1 has demonstrates the network connection between a wireless device and a server, where Net (2) represents a communication link, which may combined with wireless and non-wireless connection media and guarantee the communication packet can be sent/received between wireless device (1) and the server (3). It is also assume that the net (2) infrastructure is built up in such way that the user from web-browser of a wireless device can access and browse any web-site on the Internet, Intranet.

[00035] Console support software (5) on server (3) provides users on web-browser (8) of wireless device (1) with capability of running concurrent multi-tasks within a same single web-browser (8). Further, console support software (5) on server (3) provides user on the web-browser (8) of wireless device (1) to perform creating layered files/directory or folders structure, and to perform data management operations such as delete, move, copy, rename for data files or folders/directories and so forth on the assigned storage volume of server (3).

[00036] The other software modules (9) of wireless device (1) [[is]] are also capable to send data to or receive data from other service modules (7) of server (3) via communication link (2) through suitable IP or non-IP based protocol. The data file being sent cold be a digital photo picture, a message and so forth without limits. The console supporting software (5) of server (3) and the other software modules (9) of wireless device (1) can be implemented with any suitable languages such as C, C++, Java, and so forth without limits. The web-browser (8) of wireless device (1) can be any suitable software, which is capable to communication with web server software (4) on server (3) through HTTP protocol or other web based protocols.

[00037] Fig. 2 has demonstrated how does the storage of a server can be assigned to multiple wireless devices to use as their external storage. The storage system (10) of server (3) can be partitioned into multiple volumes (11) by administration staff through web-console (13) of web console host (12). The storage system (10) of server (3) can be partitioned in such way that each wireless devices can be assigned with a volume of desired size, which can

be best supported by the server for maximum number of wireless devices. Also, the storage connection media could be any kinds such as SCSI cable, IP cable, Fiber cable etc. The storage system itself could be various types and the storage system can be accessed through IP or non-IP based network and protocols.

[00038] Fig. 3 has demonstrated how a user from a web-browser (8) on wireless devices(1) can download data from a known web-site (12) to his/her assigned external storage (10) of server (3). The dash-lined path (a) represents a communication channel between wireless device (1) and any remote web-site (12), from where the contents can be downloaded. The dash-lined path (b) represents a communication channel between wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between wireless devices (1) and the remote web-server (12), from where contents can be downloaded.

[00039] Using external storage system (10 of Fig. 2) of a server (3 of Fig. 2) by wireless devices (1 of Fig. 2) effectively resolves the storage limitation problem of wireless devices (1 of Fig. 2). In one embodiment, the entire storage (10 of Fig. 2) on a server (3 of Fig. 2) can be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB each to allow the server to serve maximum number of wireless devices (1 of Fig. 2). With the web console support software (5 of Fig. 2) of the server (3 of Fig. 2), the task of partitioning storage can be done through web-console (13 of Fig. 2) on console host (12 of Fig. 2) by administrative staff.

[00040] In order to support storage partition, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of console host (12 of Fig. 2), which includes the storage device name, storage total size etc. Second, the administration staff on console host (12 of Fig. 2) can use web-console (13 of Fig. 2) to fill and [[to]] send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2) where the storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from web-console (13 of Fig. 2) of console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition, which divides entire storage into multiple small volumes. Finally, for each small storage volume builds a corresponding file system.

[00041] Each storage volumes with its corresponding file system (11 of Fig. 2) of the storage (10 of Fig. 2) on server (3 of Fig. 2) needs to be exclusively assigned to a given

specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) on server (3 of Fig. 2).

[00042] It is necessary to provide wireless user to manage data and storage volume on assigned external storage volumes. With the support of console support software modules (5 of Fig 2) of the server system (3 of Fig. 2), the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can setup the folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can perform all data management operations such as delete, copy, move, rename etc. on that file system.

[00043] To support data management on external storage (10 of Fig. 2) from web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2), first the console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2) must send data information of said a server system to web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2). Therefore, the user from web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2), where, the operations include establishing folder/directory, copying, moving, or reaming data file and so forth. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server system (3 of Fig. 2) actually performs these operations on the assigned file system of assigned external storage volume (11 of Fig. 2) on the server system (3 of Fig. 2).

[00044] To store the received data such as digital photo pictures, or messages and so forth into the assigned file system on external storage (10 of Fig. 2) of a server (3 of Fig. 2), the software modules (9 of Fig. 2) of wireless device (1 of Fig. 2) send received data to service software modules (7 of Fig. 2) of server (3 of Fig. 2) via communication link. Upon receiving data, the service software modules (7 of Fig. 2) of server (3 of Fig. 2) write received data to assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2). The protocol used between these two communication entities could be either IP or non-IP based protocol.

[00045] If the wireless device (1 of Fig. 3) user want to download data from remote web server (12 of Fig. 3) directly into assigned file system (11 of Fig. 3) of the external storage (10 of Fig. 3) on server (3 of Fig. 3), the following steps are required:

[00046] 1) User from web-browser (8 of Fig. 3) of a specific wireless device (1 of Fig. 3) accesses a remote download web server site (12 of Fig. 3) and obtains the information for download via path (a) of Fig. 3. For example, to get information on a web-page of web server (12 of Fig. 3), which contains the data name for download.

[00047] 2) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) obtains download information, which becomes available in the cached web-pages on wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the download site (12 of Fig. 3).

[00048] 3) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) send the obtained download information to service software modules (7 of Fig. 3) of storage server (3 of Fig. 3) via path (b) of Fig. 3.

[00049] 4) Upon receiving the download information from a specific wireless device (1), the service software module (7 of Fig. 3) of the storage server (3 of Fig. 3) sends a web download request to download web-site (12 of Fig. 3) via path (c) of Fig. 3 based on download information obtained and further receives the download data from web server of download web-site (12 of Fig. 3).

[00050] 5) Upon receiving downloaded data, the service software modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write received data for the specific wireless device (1 of Fig. 3) into the assigned external file system (11 of Fig. 3) on the server (3 of Fig. 3).

[00051] There several ways to retrieve data from external storage of wireless device to wireless device itself. In one embodiment, a web-browser has embedded video or music functionality, the web-browser (8 of Fig.) of a wireless device (1 of Fig. 2) can be used to retrieve and play multimedia data file such as video or music stored in wireless device's external storage volume (10 of Fig.2), which actually located on a server (3 of Fig. 2). In another embodiment, the software module (9 of Fig. 2) of wireless device (1 of Fig. 2) can retrieve data file from assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2) via communication link.

[00052] It is possible to provide mass number of wireless device users with external storage. For example, to provide each user 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on a server unit can support 2024 user In order to support a large number of wireless devices with external storage, for example supporting 500,000 wireless devices, a larger number of servers are required, in this case 250 servers is required. In order to let a larger number of the server to effectively support larger number of the wireless devices, an infrastructure like CCDSVM is desirable. With CCDSVM the control management station can control larger number of storage servers to provide external storage for unlimited number of the wireless devices.

[00053] The Fig. 5 has illustrated an example of CCDSVM. The control station (15) provisions and controls each system unit (3) and distributing requests from one or more client systems (1) to available system unit (3) for required services. Further, in one embodiment, each system unit (3) can provide service to requested client (1) directly independent of other system units (3) without going through control system again.

[00054] In one embodiment of supporting larger number of wireless device to access external storage, each storage of each server system (3) will be pre-partitioned with one or more fix sized storage volumes. Once an owner of the wireless device sends a request, the control system (15) will identify an server system (3), which has storage space available to satisfy the requested wireless devices (1), and further assign and map available storage volume to requested wireless device (1).

[00055] In another embodiment, the control station (15) dynamically keeps and updates storage availability information in its information list of server systems (3), therefore, once receive a request of providing external storage volume, the control station (15) can assign the right size of storage immediately to requested wireless device. In addition, control station (15) can also instructing service software of server system (3) to dynamically partition storage volume on available storage space based on requested size, and further to assign partitioned storage volume to requested wireless device and keep mapping information on control system (15).

[00056] In addition, the server software of control station communicates to service software of system unit (3) to automatically provision one or more system unit (3) via a proprietary sequence of combined TCP/UDP/IP protocols, and it also keeps an information list of system units in both memory and secondary storage device on control system (15), which including each system unit's system name, ID, IP address, service pool ID, hardware resource information, and data resource and application service information. The system unit (3) can be automatically provisioned into one or more groups of services based on service type or ID. The server software of control system includes web server software modules (4), console support software modules (5), which further includes web server interface software modules (6) and control management software modules (7).

[00057] In present invention, the system unit (3) of Fig. 5 has identical role and similar features as the server system (3) in Fig. 1 and Fig. 2 and the storage server in Fig. 4. Also, the server software of control system provide each user from each of their own single web browser or non web-based UI with capability of performing one or more concurrent tasks within said a single web browser (8) or non web based UI over said CCDSVM.

[00058] The server software of control system will receive each task information and store each task information into a corresponding valid entry of user space task list along with acquiring one or more locks for executing said task. Upon said task is finished, server software of control station will release corresponding entry of user space task list and locks. In addition, server software of control station (15) will obtain the status or result of each task or a location of task result and provide response encoded with status or result or the location information of result back to corresponding web browser or said non web based UI. Said response can be made independently regardless said task is finished or not. In present invention, the client system (1) of Fig. 5 has identical role and similar features as the wireless device (1) in Fig. 1, 2, 3, and 4.

[00059] These management tasks can be performed from web browser (8) include storage configuration, storage volume allocation and assignment, storage partitioning and repartitioning for RAID or SCSI or IDE disk drives, make and mount file system on the top of storage volume; monitoring status of storage, network, CPU, memory, processes/threads and other resource's usage and activity. Move or transmit data such as a multiple gigabytes of file or other data in any form from any point or any system to another point or system within said

pools; setup authentication of specific user from a specific web-console with certain privilege for entire CCDSVM or for a specific system, which could be any storage server or host or control station; setting up the authentication for specific services on one or more specific hosts, or on control system, and stores the authentication information in a list on control system; create file system, file and file-folder or directory structures, and perform all other related data file operations on either the controls station or hosts for data or application file accessing; and all other kind of tasks and operations, which can be run in command line user interactive work (operating) environment or native window based user interactive work environment. The mentioned data file can be documentation file such as text or Word or PDF or spreadsheet file or presentation slide file etc. and can be various record file. The mentioned application file can be various formatted binary file to provide application service such as web service, message service network service, storage service etc without limits.

[00060] FIG. 6 illustrates a typical computer system (16), in one embodiment, the distribution control station (15) comprises a computer system (16) which includes a bus (102) or other communication mechanism for communicating information, and a processor (CPU) (104) coupled with the bus (102) for processing information. The computer system (16) also includes a main memory (106), such as a random access memory (RAM) or other dynamic storage device, coupled to the bus (102) for storing information and program instructions to be executed by the processor (104). The main memory (106) also may be used for storing temporary variables or other intermediate information during execution or instructions to be executed by the processor (104). The computer system (16) further includes a read only memory (ROM) (108) or other static storage device coupled to the bus (102) for storing static information and instructions for the processor (104). a storage device (110), such as a magnetic disk or optical disk, is provided and coupled to the bus (102) for storing information and instructions. The bus (102) may contain, for example, thirty-two address lines for addressing video memory or main memory (106). The bus (102) can also include, for example, a 32-bit data bus for transferring data between and among the components, such as the CPU 104, main memory 106, video memory and the storage media (110). Alternatively, multiplex data / address lines may be used instead of separate data and address lines.

[00061] In one embodiment, the CPU (104) comprises a microprocessor manufactured by Motorola(R), such as the 680x0 processor or a microprocessor manufactured by Intel(R), such as the 80X86, or Pentium(R) processor, or a SPARC(R) microprocessor from Sun Microsystems(R). However, any other suitable microprocessor or microcomputer may be utilized. The main memory (106) can comprise dynamic random access memory (DRAM). And video memory (not shown) can comprise a dual-ported video random access memory.

[00062] The computer system (16) may be coupled via the bus (102) to a display (112), such as a cathode ray tube (CRT), liquid crystal display (LCD) or Plasma display panel, for displaying information to a computer user. An input device (114), including alphanumeric and other keys, is coupled to the bus (102) for communicating information and command selections to the processor (104). Another type of user input device comprises cursor control (116), such as a mousse, a trackball, or cursor direction keys for communicating direction information and command selections to the processor 104 and for controlling cursor movement on the display (112). This input device typically has two degrees of freedom in two axes, a first axis (e.g., x) and a second axis (e.g., y) that allows the device to specify positions in a plane.

[00063] According to one embodiment of the invention, the steps of the processes of the present invention is provided by computer systems (16) in response to the processor (104) executing one or more sequences of one or more instructions contained in the main memory (106). Such instructions may be read into the main memory (106) from another computer-readable medium, such as the storage device (110). Execution of the sequences of instructions contained in the main memory (106) causes the processor (104) to perform the process steps described herein. One or more processors in a multi-processing arrangement may also be employed to execute the sequences of instructions contained in the main memory (106). In alternative embodiments, hard-wired circuitry such as Application Specific Integrated Circuit (ASIC) may be used in place of or in combination with software instructions to implement the invention. Thus, embodiments of the invention are not limited to any specific combination of hardware circuitry and software.

[00064] The term "computer-readable medium" as used herein refers to any medium that participated in providing instructions to the processor 104 for execution. Such a medium may take may forms, including but not limited to, non-volatile media, volatile media, and

transmission media. Non-volatile media includes, for example, optical or magnetic disks, such as the storage device (110). Volatile media includes dynamic memory, such as the main memory (106). Transmission media includes coaxial cables, copper wire and fiber optics, including the wires that comprise the bus (102). Transmission media can also take the form of acoustic or light waves, such as those generated during radio wave and infrared data communications.

[00065] Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, a CD-ROM, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, a RAM, a PROM, an EPROM, a FLASH-EPROM, any other memory chip or cartridge, a carrier wave as described hereinafter, or any other medium from which a computer can read.

[00066] Various forms of computer readable media may be involved in carrying one or more sequences of one or more instructions to the processor (104) for execution. For example, the instructions may initially be carried on a magnetic disk of a remote computer. The remote computer can load the instructions into its dynamic memory and send the instructions over a telephone line using a modem. A modem local to the computer system (16) can receive the data on the telephone line and use an infrared transmitter to convert the data to an infrared signal. An infrared detector coupled to the bus (102) can receive the data carried in the infrared signal and place the data on the bus (102). The bus (102) carries the data to the main memory (106), from which the processor (104) retrieves and executes the instructions. The instructions received from the main memory (106) may optionally be stored on the storage device (110) either before or after execution by the processor (104).

[00067] The computer system (16) also includes a communication interface (118) coupled to bus the (102). The communication interface (118) provides a two-way data communication coupling to a network link (120) of the network infrastructure (2) that is connected to routers in network infrastructure (2). For example, the communication interface (118) may be an integrated services digital network (ISDN) card or a modern to provide a data communication connection to a corresponding type of telephone line, which can comprise part of the network link (120). As another example, the communication interface (118) may be a local area network (LAN) card to provide a data communication connection to

a compatible LAN. Wireless links may also be implemented. In any such implementation, the communication interface (118) sends and receives electrical electromagnetic or optical signals that carry digital data streams representing various types of information.

[00068] The network link (120) typically provides data communication through one or more networks to other data devices. For example, the network link (120) of network infrastructure (2) may provide a connection through a local network to a host/server computer or to data equipment operated by an Internet Service Provider (ISP) (126) via switched of network infrastructure (2). The ISP (126) in turn provides data communication services through the world wide packet data communication network now commonly referred to as the "Internet" (128) of network infrastructure (2). The Internet (128) uses electrical electromagnetic or optical signals that carry digital data streams. The computer system (16) further includes web server (4) for providing e.g. a user interface to the clients (1) or console hosts (12) for requesting data streams from the virtual server . In one example said user interface can include a list of available video content files in the virtual video server or virtual file server and ways of selecting content files for viewing, including optionally payment terms.

[00069] The computer system (16) can send messages and receive data, including program code, through the communication interface (118). In the Internet example, clients (1) can transmit code (e.g., program instructions, HTML, etc.) for an application program through the Internet (128), the ISP (126), and communication interface (118).

[00070] The computer system (16)'s hardware capacity determine such how many concurrent tasks, how may total users, how many concurrent users it can support. The network hardware such as the bandwidth of each network interface (118) and the total number of network interface cards, the speed of CPU, and the size of memory (106) determine the total number of concurrent data connections with certain rate of per connection the computer system (16) can provide, and determine the total number of concurrent users and tasks can have or run on computer system (16), and determine the total number of other systems that computer system (160 can control.

[00071] The example versions of the invention described herein can be implemented as logical operations in a distribution control station (15). The logical operations of the present

invention can be implemented as a sequence of steps executing on distribution control station (15). The implementation is a matter of choice and can depend on performance of the distribution control station (15) implementing the invention. As such, the logical operations constituting said example versions of the invention are referred to for e.g. as operations, steps or modules.

[00072] The present invention has been described in considerable details with reference to certain examples. However, other versions and examples are also possible, therefore, the spirit of this invention shall not be limited to these examples and/or embodiments.

(New Sheet)

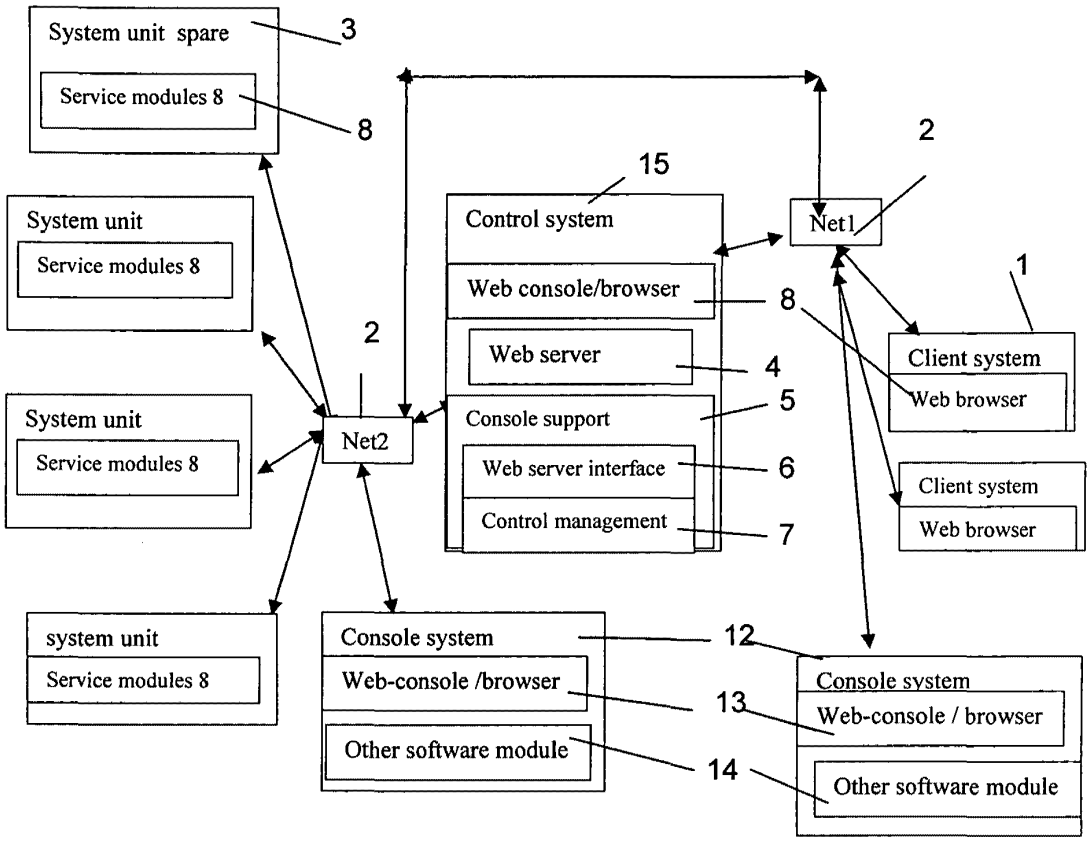


Fig. 5

(New Sheet)
A typical Computer system connected into network

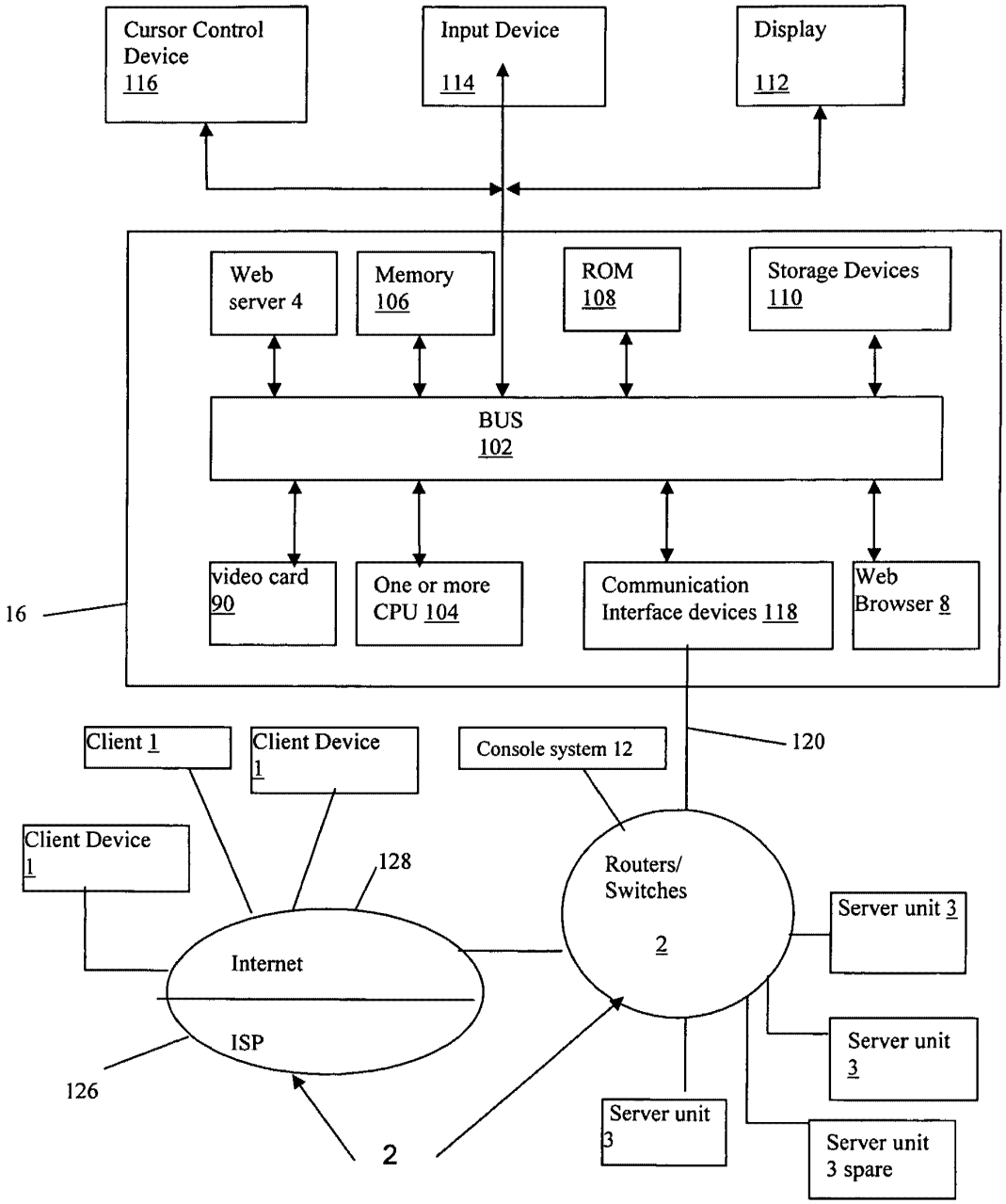


Fig. 6

Fig. 7A & Fig. 7B (New Sheet)

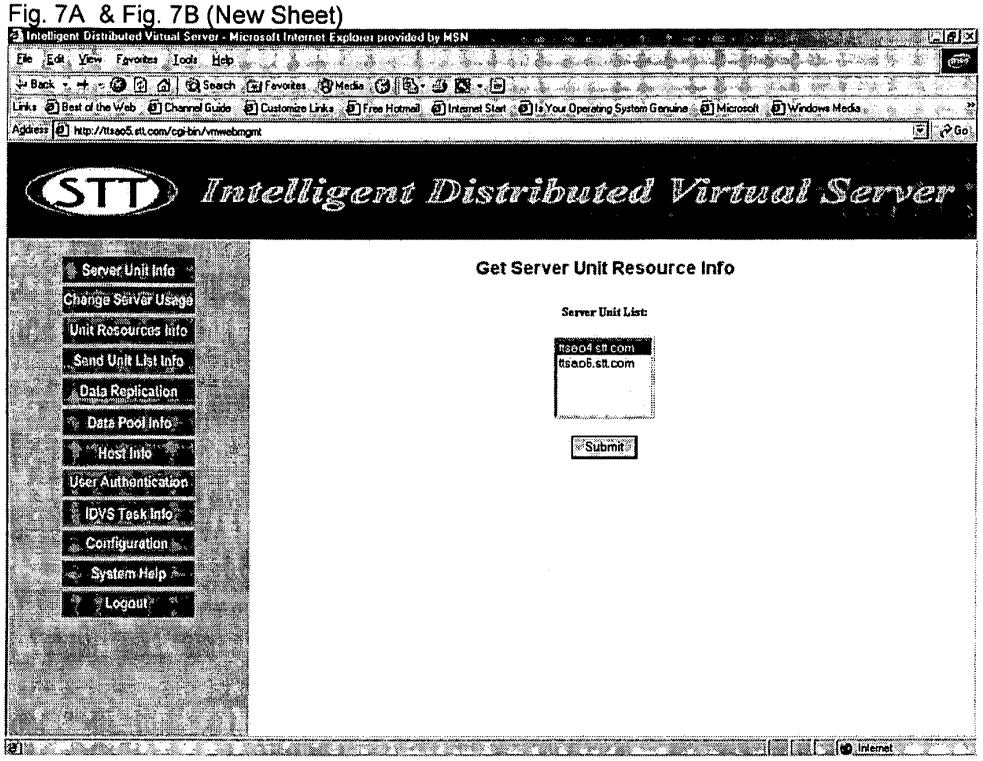


Fig. 7A

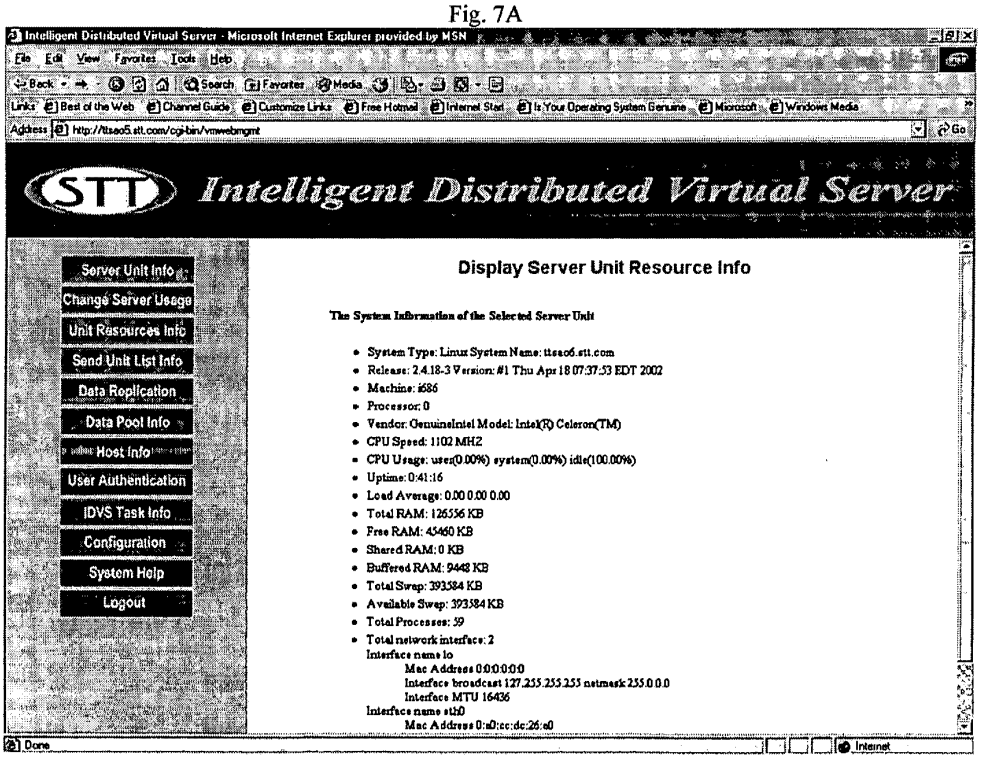


Fig. 7B

Fig. 7C and Fig. 7D (New Sheet)

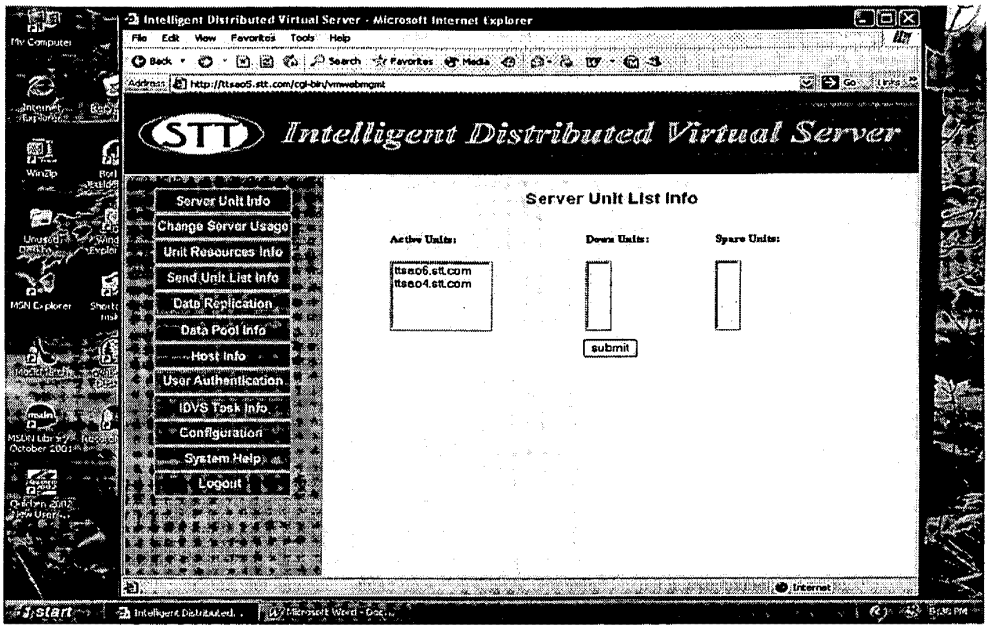


Fig. 7C

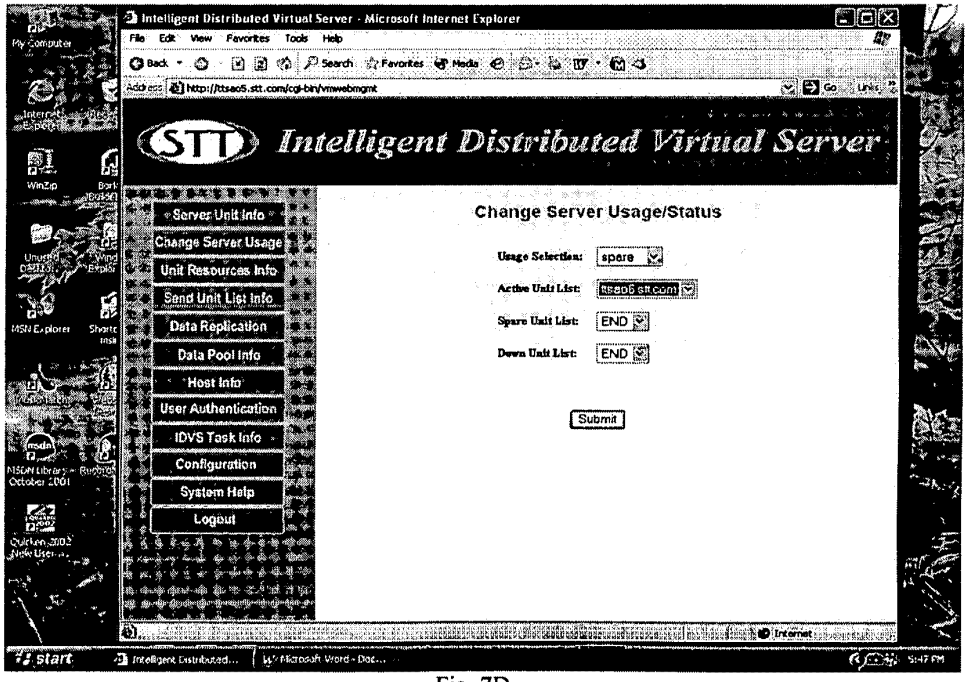


Fig. 7D

Fig. 7E and Fig. 7F (New Sheet)

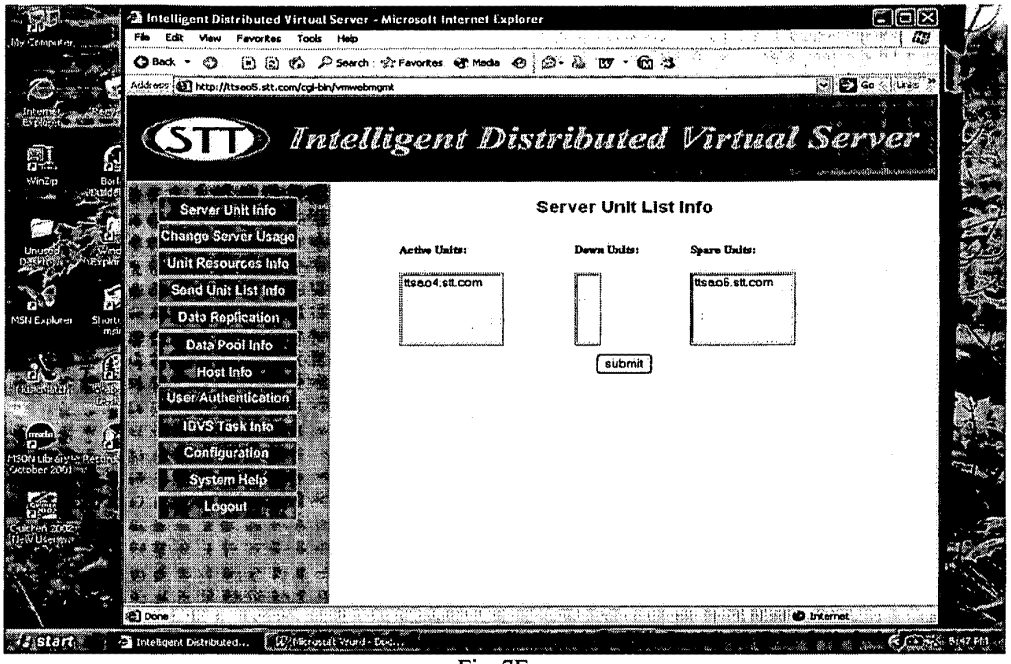


Fig. 7E

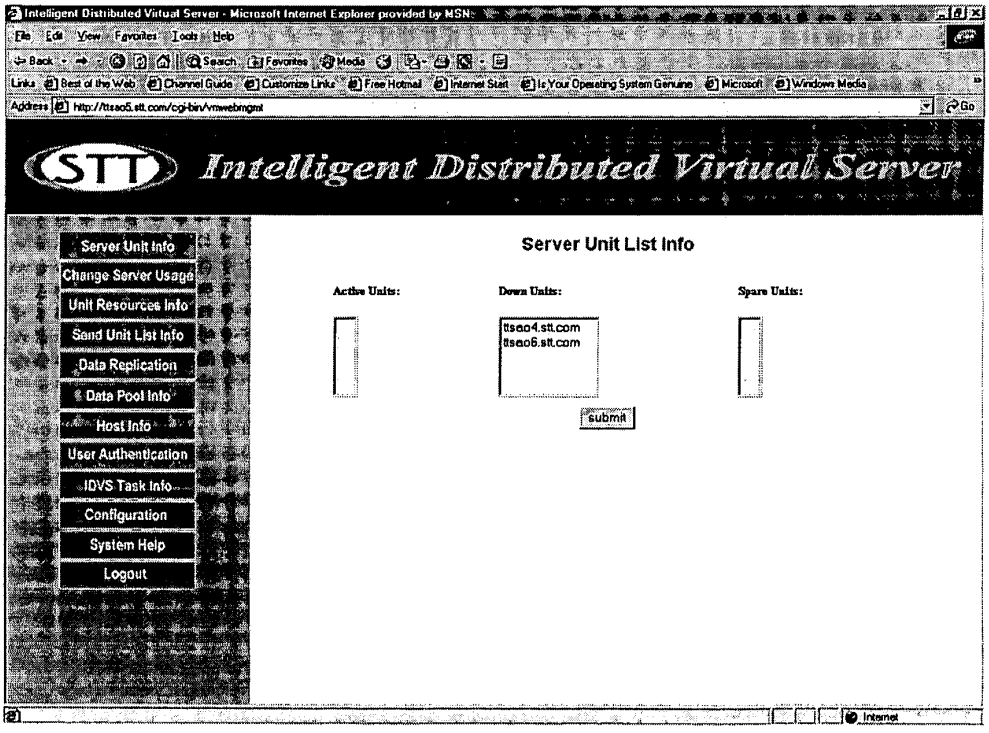


Fig. 7F

Fig. 8A & Fig. 8B (New Sheet)

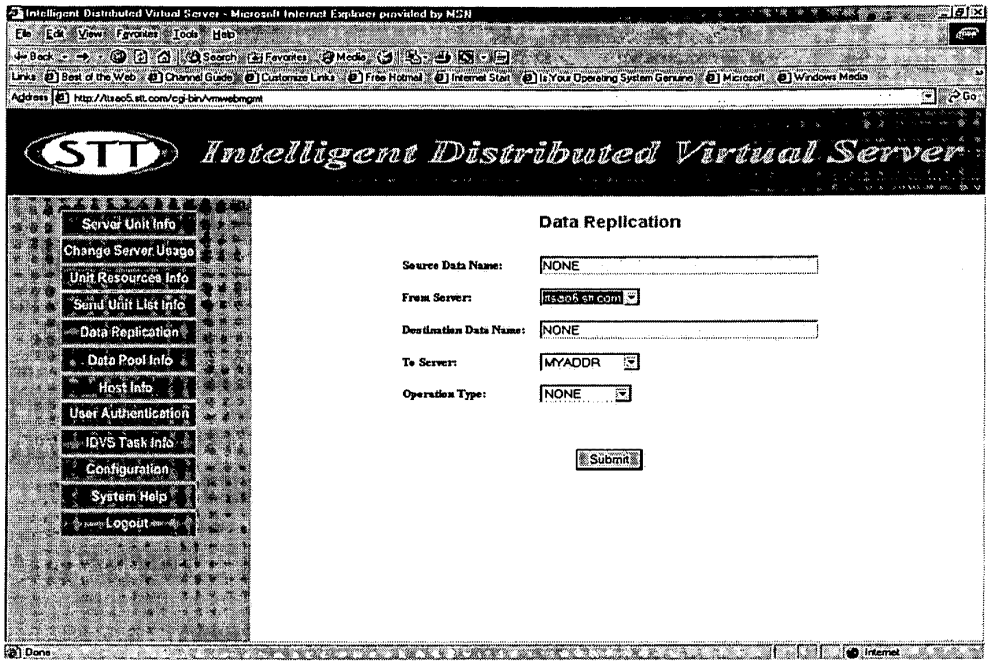


Fig. 8A

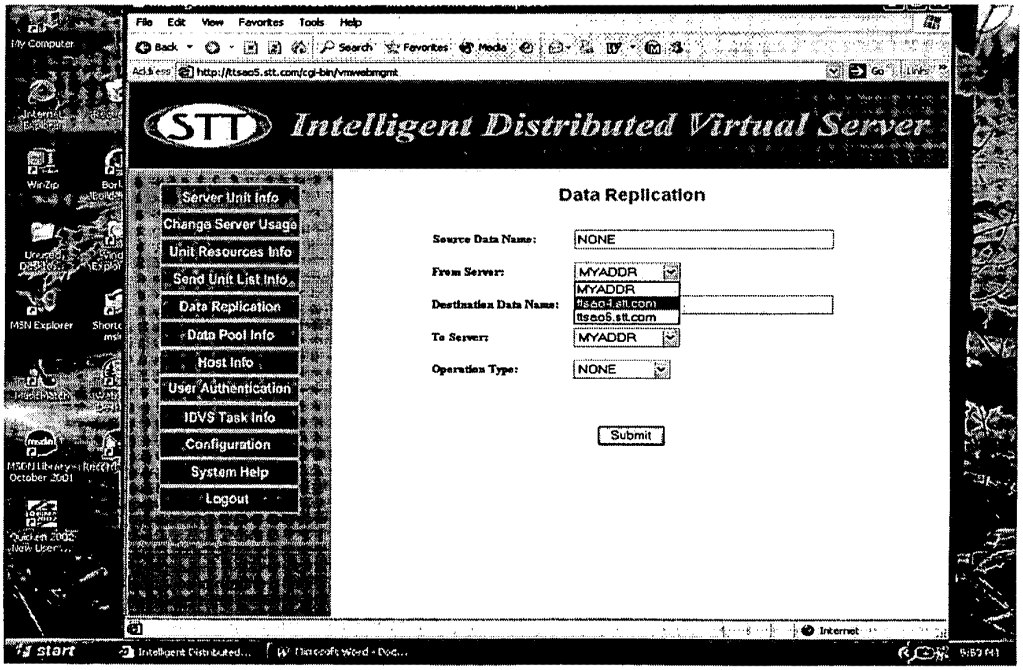


Fig. 8B

Fig. 8C & Fig. 8D (New Sheet)

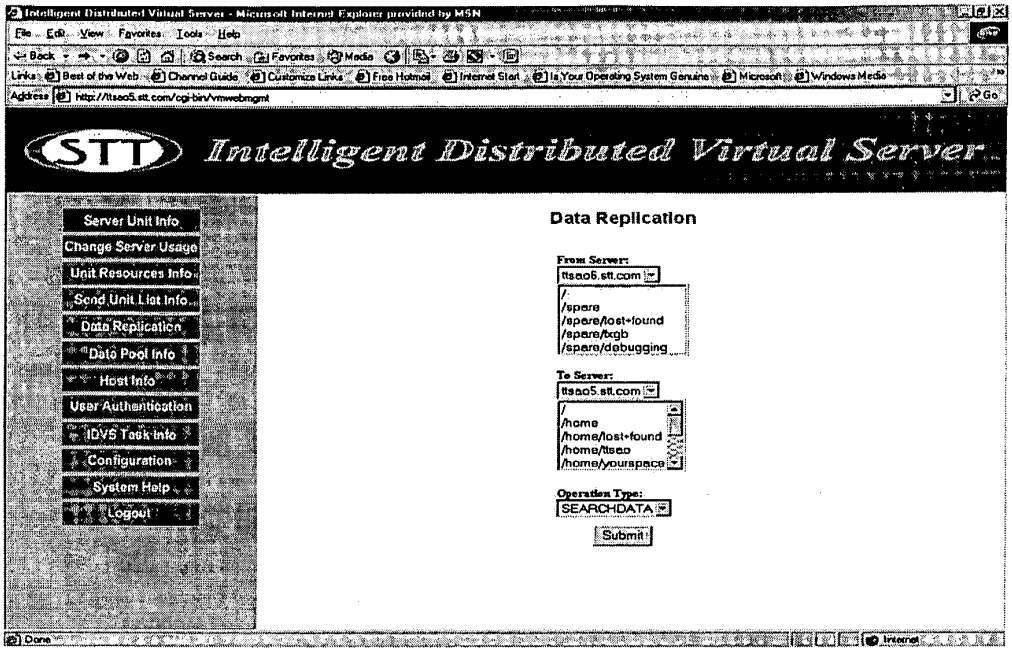


Fig. 8C

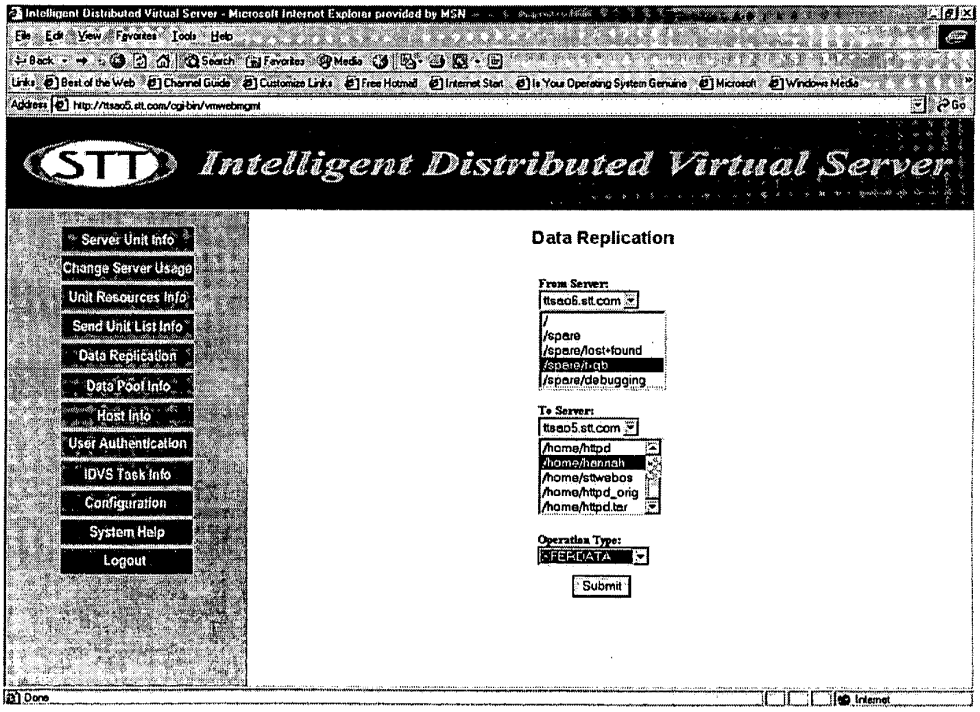


Fig. 8D

Fig. 9A & Fig. 9B (New Sheet)

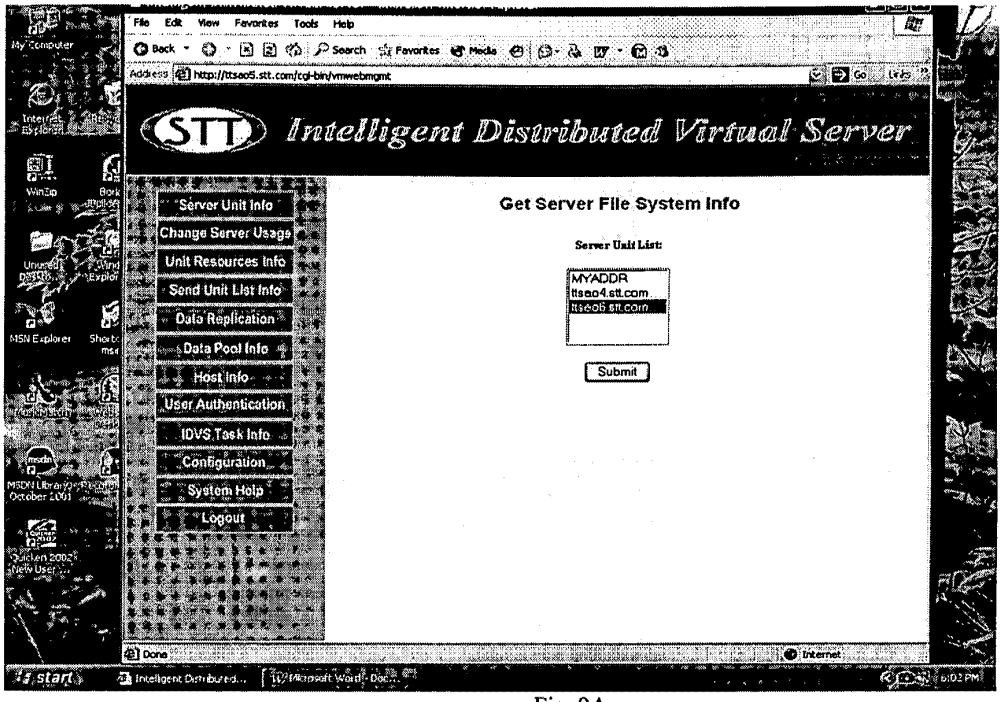


Fig. 9A

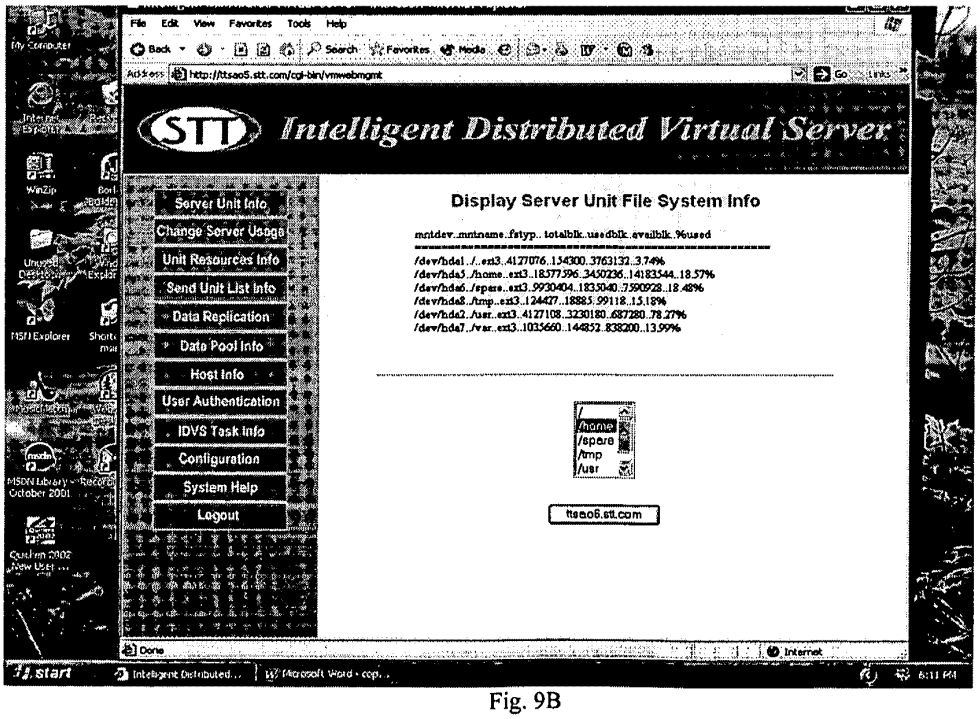


Fig. 9B

Fig. 9C& Fig. 9DD (New Sheet)

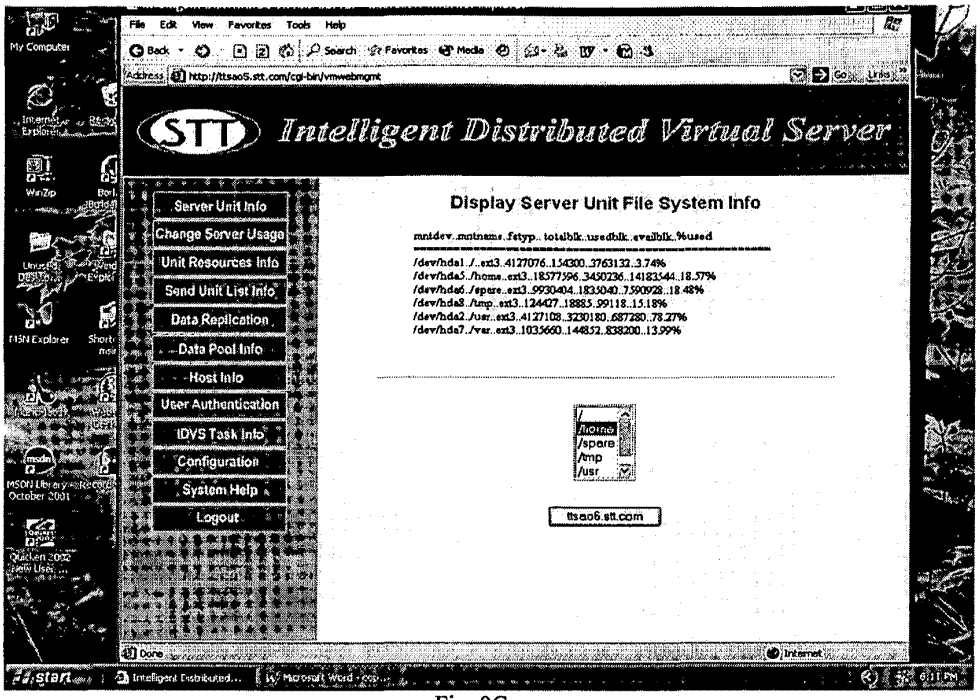


Fig. 9C

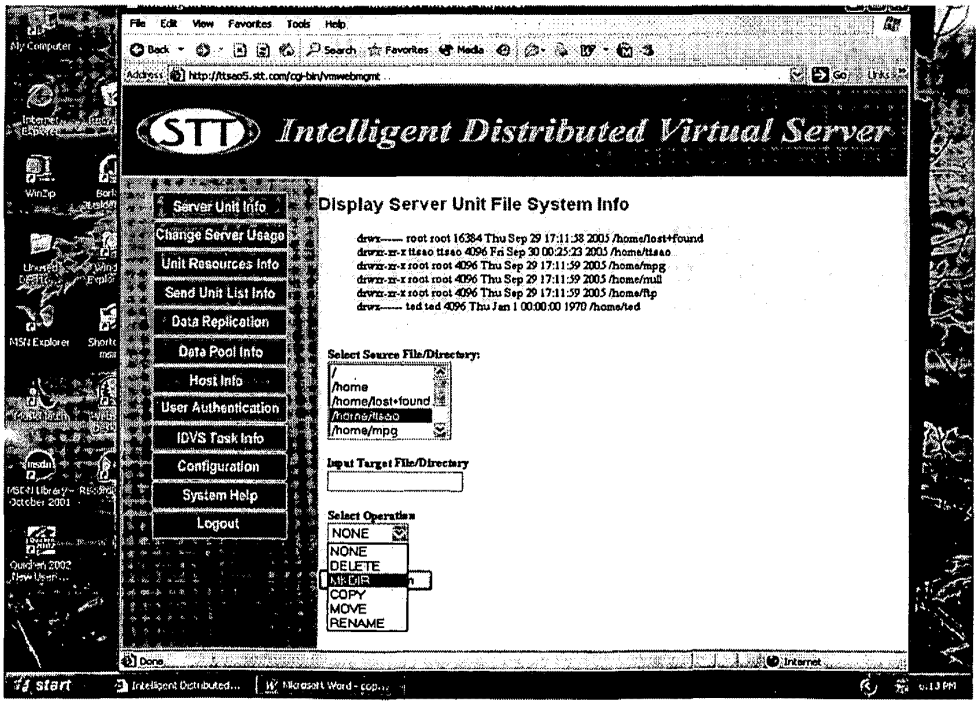


Fig. 9D

Fig. 10A & Fig. 10B

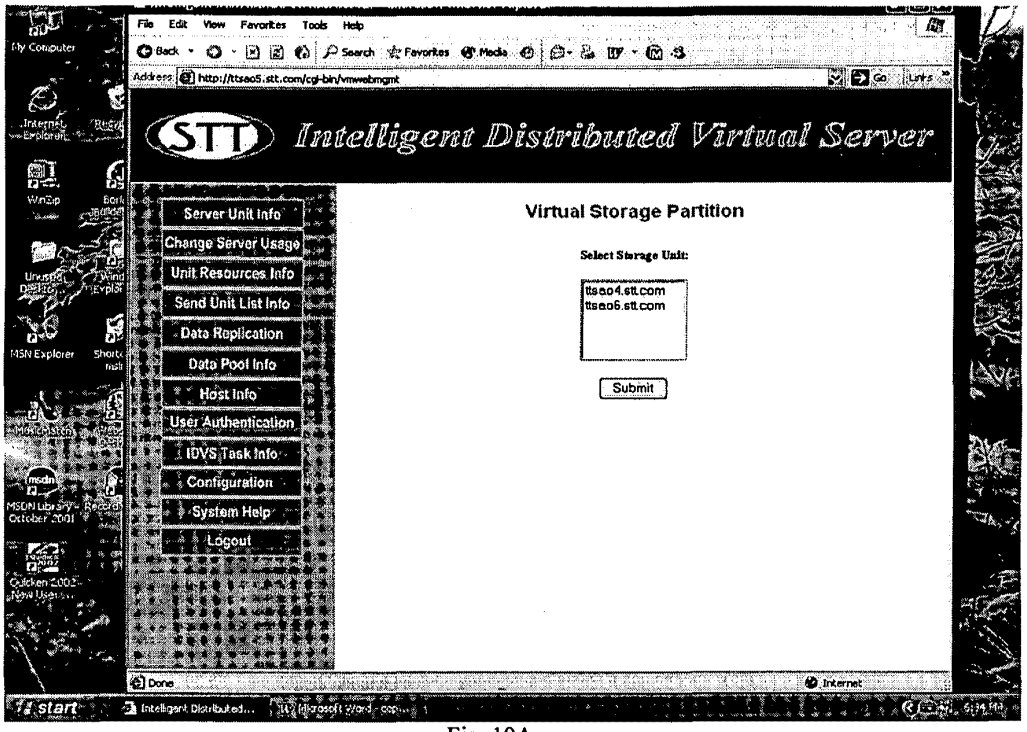


Fig. 10A

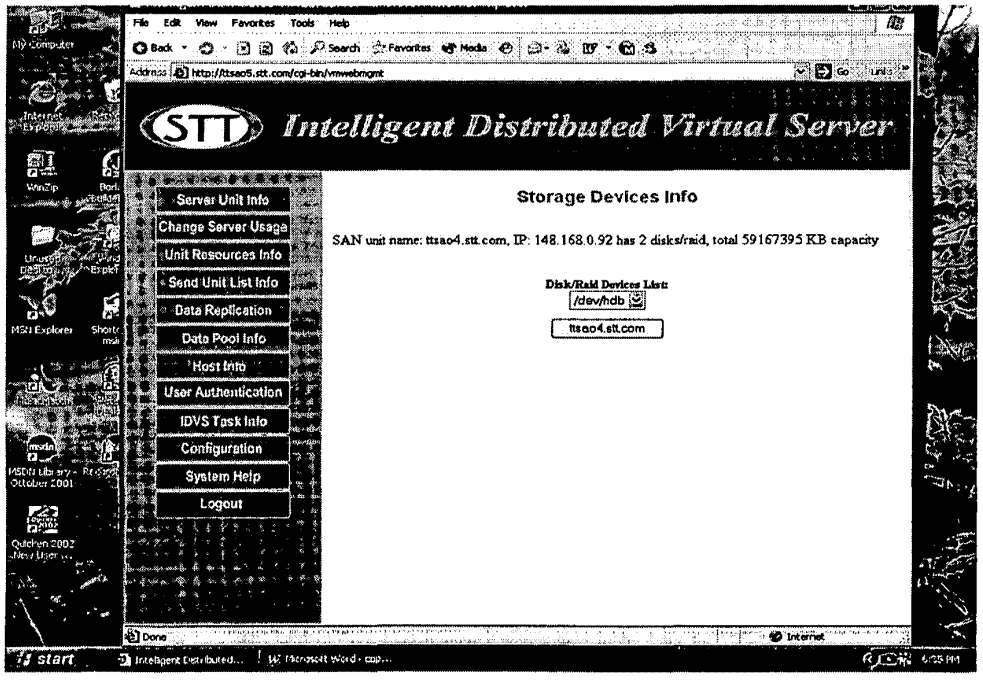


Fig. 10B

Fig. 10C & Fig. 10D (New Sheet)

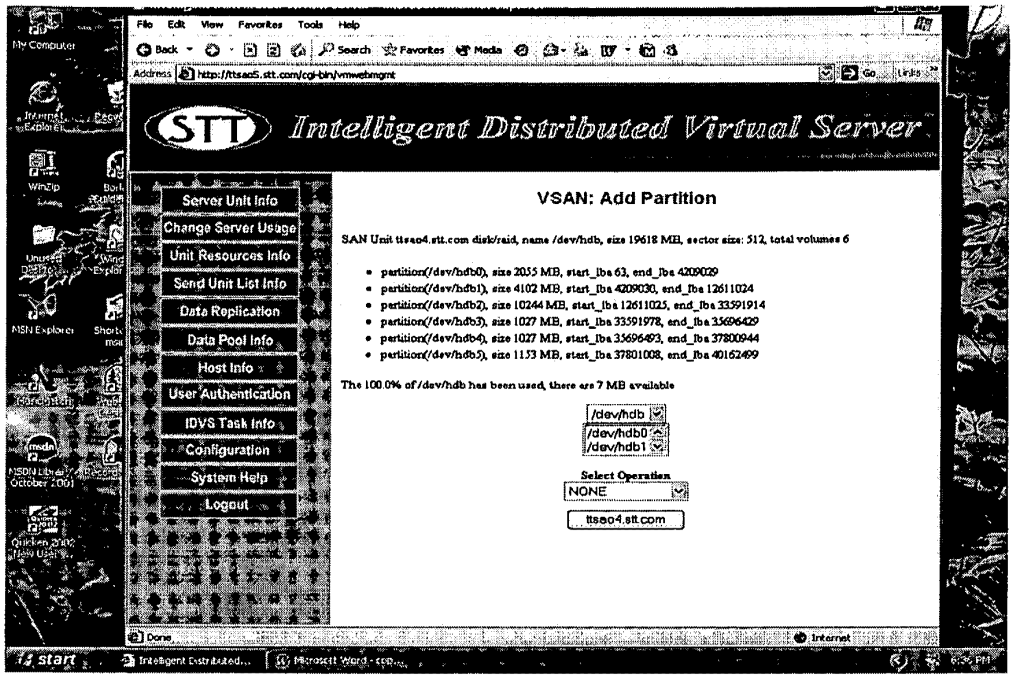


Fig. 10C

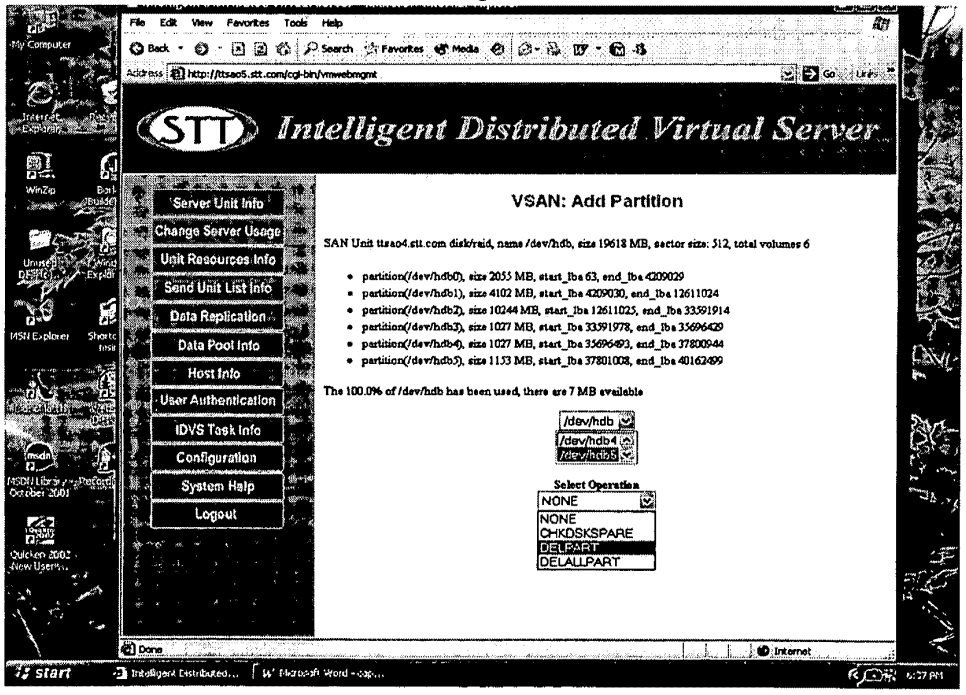


Fig. 10D

Fig. 10E & Fig. 10F (New Sheet)

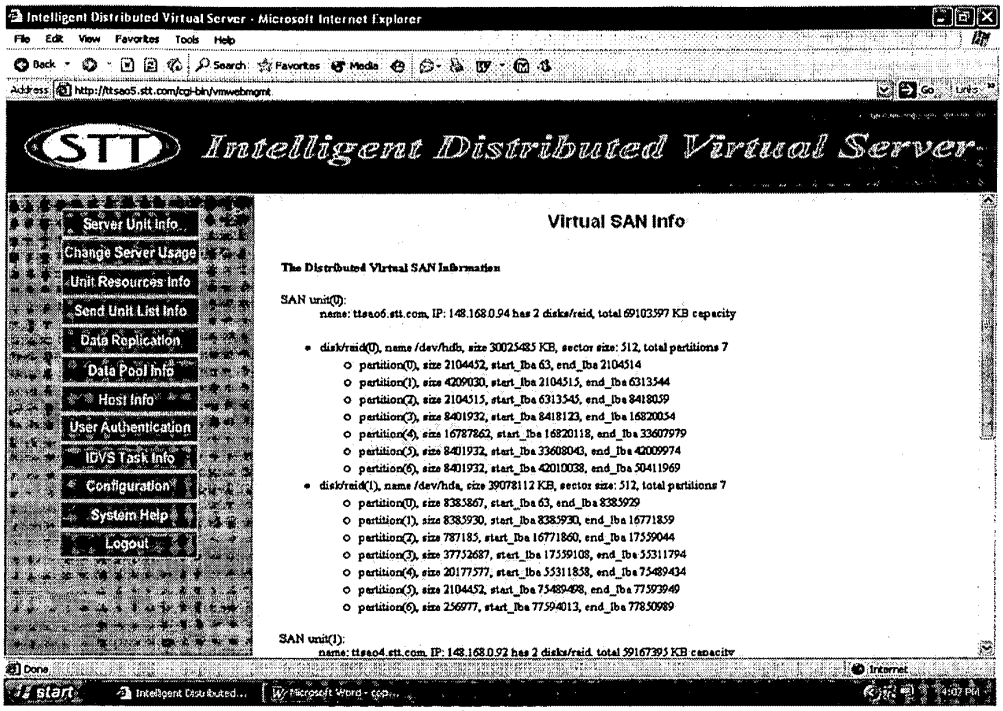


Fig. 10E

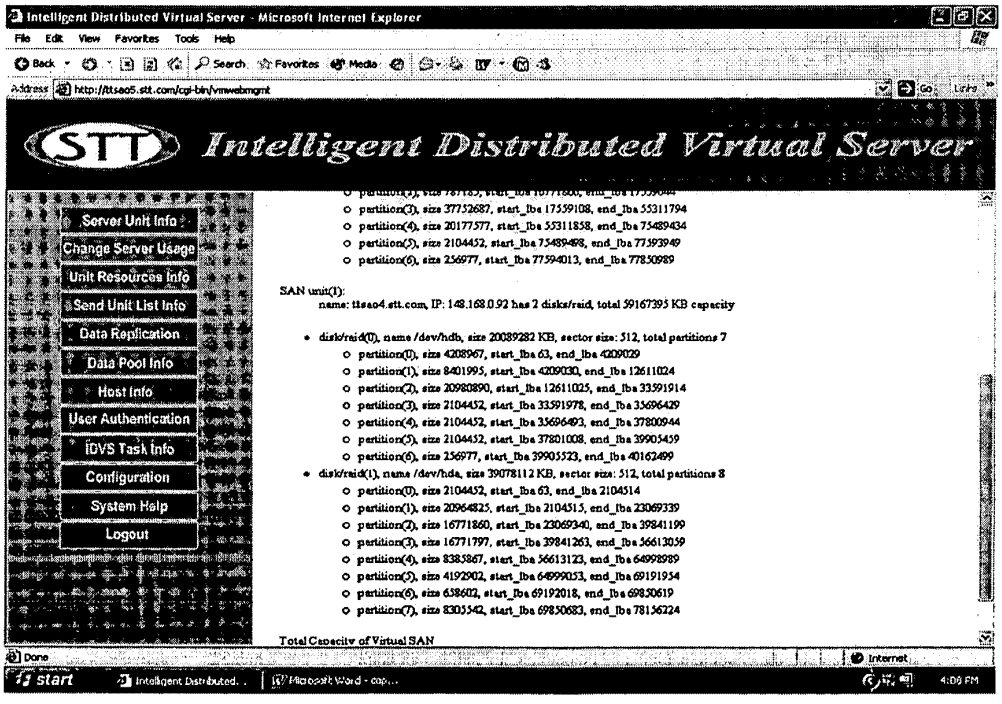


Fig. 10F

Fig. 11A & Fig. 11B (New Sheet)

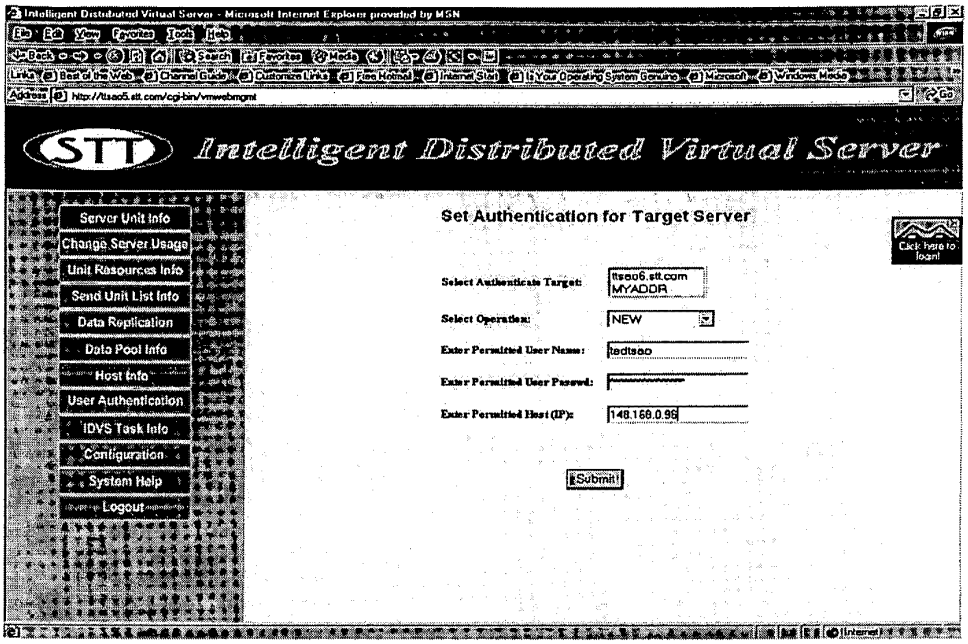


Fig. 11A

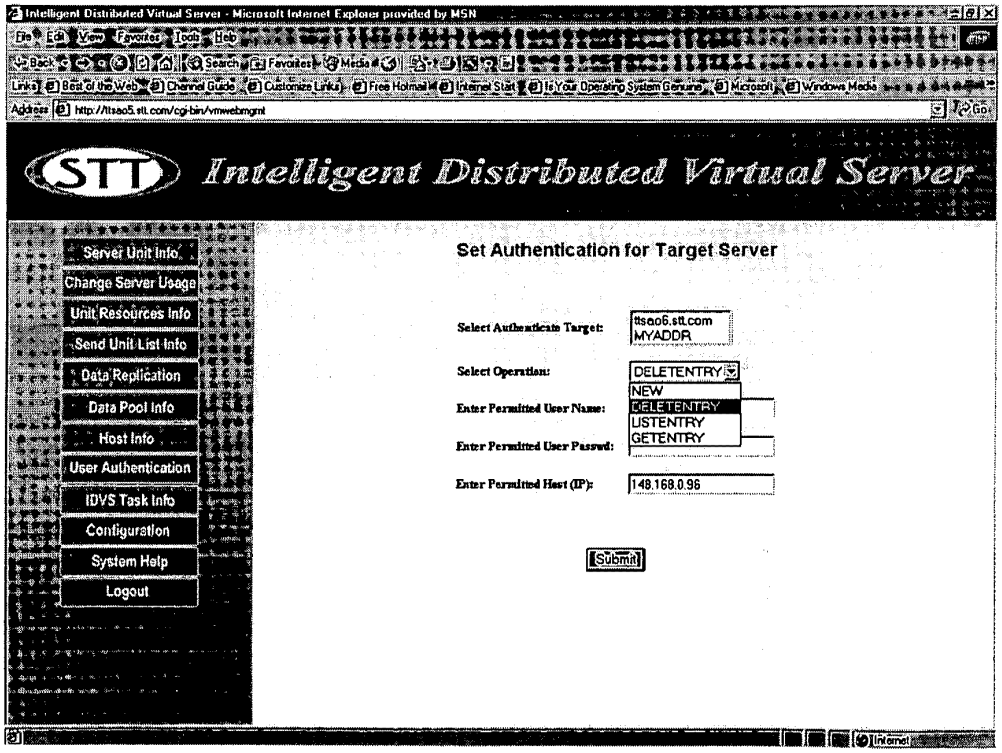


Fig. 11B

Fig. 111C (New Sheet)

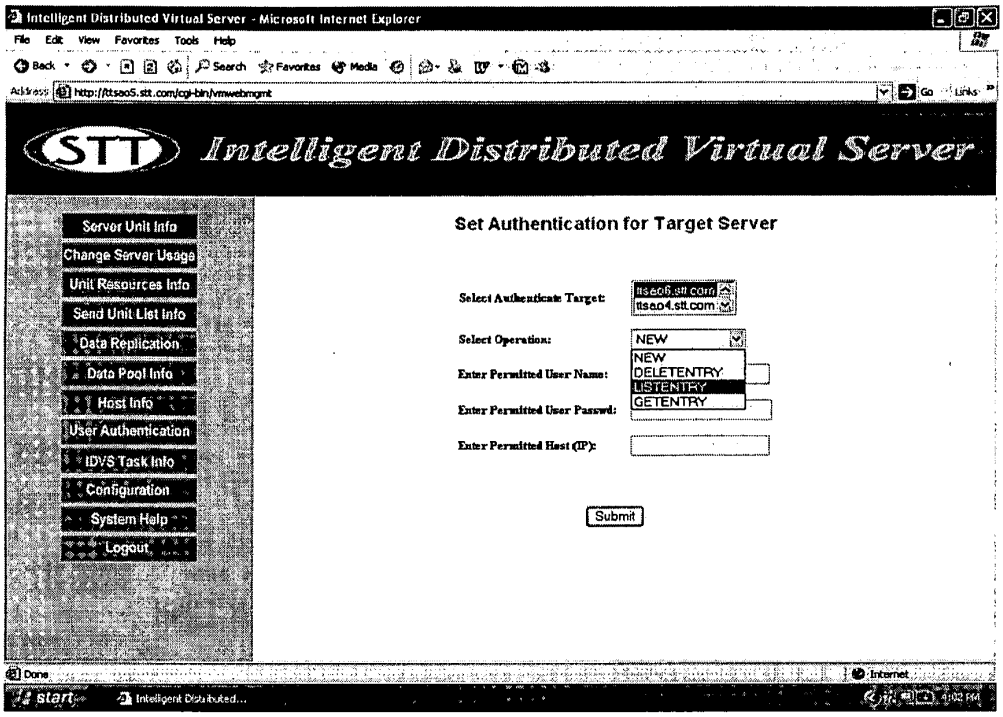


Fig. 11C

DocCode - SCORE

SCORE Placeholder Sheet for IFW Content

Application Number: **10726897** Document Date: **11/04/2008**

The presence of this form in the IFW record indicates that the following document type was received in paper and is scanned and stored in the SCORE database.

- Drawings

Images of the original documents are scanned in gray scale or color and stored in SCORE. Bi-tonal images are also stored in IFW. Defects visible in both IFW and SCORE are indicative of defects in the original paper documents.

To access the documents in the SCORE database, refer to instructions developed by SIRA.

At the time of document entry (noted above):

- Examiners may access SCORE content via the eDAN interface.
- Other USPTO employees can bookmark the current SCORE URL (http://es/ScoreAccessWeb/).
- External customers may access SCORE content via the Public and Private PAIR interfaces.

Form Revision Date: December 8, 2006

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
SAN JOSE, CA 95132

COPY MAILED

OCT 14 2008

OFFICE OF PETITIONS

In re Application of :
Sheng (Ted) Tai Tsao :
Application No. 10/726,897 : DECISION ON PETITION
Filed: December 4, 2003 :
Attorney Docket No. :

This is a decision on the petition under the unintentional provisions of 37 CFR 1.137(b), filed February 27, 2008, to revive the above-identified application.

The application became abandoned for failure to reply in a timely manner to the Notice to File Missing Parts of Nonprovisional Application (Notice), mailed March 5, 2004 and re-mailed December 13, 2004. The Notice set a period for reply of two (2) months from the mail date of the Notice. No extensions of time under the provisions of 37 CFR 1.136(a) were obtained. Accordingly, the application became abandoned on February 14, 2005.

This application has been abandoned for an extended period of time. The U.S. Patent and Trademark Office is relying on petitioner's duty of candor and good faith and accepting the statement that "the entire delay in filing the required reply from the due date for the reply until the filing of a grantable petition pursuant to 37 CFR 1.137(b) was unintentional." See Changes to Patent Practice and Procedure, 62 Fed. Reg., at 53160 and 53178; 1203 Off. Gaz. Pat. Office, at 88 and 103 (responses to comments 64 and 109) (applicant obligated under 37 CFR 10.18 to inquire into the underlying facts and circumstances when providing the statement required by 37 CFR 1.137(b) to the U.S. Patent and Trademark Office).

The petition satisfies the requirements of 37 CFR 1.137(b) in that petitioner has supplied (1) the reply in the form of a reply, (2) the petition fee of $770, and (3) a proper statement of unintentional delay.

The petition is **GRANTED**.

Telephone inquiries concerning this decision should be directed to undersigned at (571) 272-1642.

This application is being referred to the Office of Patent Application Papers for processing of the reply previously filed January 18, 2005.

/April M. Wise/
April M. Wise
Petitions Examiner
Office of Petitions

Petition for Review by the Office of Petition

Dear Sir/Madam,

On 2/27/2008, I have filed a "Petition for Recovering of Abandoned Application 10/726,897". Since then, I have not received any response for this petition from Office of Petition of USPTO.

Therefore, I would like to know if Office of Petition can speed up the review for the abandoned case of 10/726,897 and how long it will take for you to review. Also, it is desirable to know the current status of application 10/726,897.

Very appreciate your help and concerns, and like to hear from you soon.

Thanks

Applicant: Sheng Tai (Ted) Tsao
2979 Heidi Drive
San Jose, CA 95132
408-813-0536
5/6/2007

Electronic Acknowledgement Receipt

EFS ID:	3264083
Application Number:	10726897
International Application Number:	
Confirmation Number:	4178
Title of Invention:	Use of wireless devices' external storage
First Named Inventor/Applicant Name:	Sheng (Ted) Tai Tsao
Correspondence Address:	SHENG (TED) TAI TSAO - 2979 HEIDI DRIVE - SAN JOSE CA 95132 US 4082510864 -
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	06-MAY-2008
Filing Date:	04-DEC-2003
Time Stamp:	19:27:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition for review by the Office of Petitions.	Petition-for-Review.pdf	301519 807feb73f6c3f19140629421b1bef6ab48a28947	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	301519		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

<< See back of page >>

IFW DAC

PTO/SB/64 (01-08)
Approved for use through 02/29/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(b)	Docket Number (Optional)

First named inventor:

Application No.: 10/726,897 Art Unit: 2186

Filed: 12/04/2003 Examiner:

Title: Use of wireless devices' external storage

Attention: Office of Petitions
Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
FAX (571) 273-8300

NOTE: If information or assistance is needed in completing this form, please contact Petitions Information at (571) 272-3282.

The above-identified application became abandoned for failure to file a timely and proper reply to a notice or action by the United States Patent and Trademark Office. The date of abandonment is the day after the expiration date of the period set for reply in the office notice or action plus an extensions of time actually obtained.

APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION

NOTE: A grantable petition requires the following items:
(1) Petition fee;
(2) Reply and/or issue fee;
(3) Terminal disclaimer with disclaimer fee - required for all utility and plant applications filed before June 8, 1995; and for all design applications; and
(4) Statement that the entire delay was unintentional.

1.Petition fee

☒ Small entity-fee $ 770 (37 CFR 1.17(m)). Applicant claims small entity status. See 37 CFR 1.27.

☐ Other than small entity – fee $ _____ (37 CFR 1.17(m))

2. Reply and/or fee

A. The reply and/or fee to the above-noted Office action in the form of _____(identify type of reply):

☒ has been filed previously on 12/21/2004.
☐ is enclosed herewith.

B. The issue fee and publication fee (if applicable) of $ _____.

☒ has been paid previously on 12/4/2003.
☐ is enclosed herewith.

02/27/2008 CCHAU1 00000073 10726897

01 FC:2453 770.00 OP

Please see back side for page 2

3. Terminal disclaimer with disclaimer fee

☑ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.

☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of $ _____ for a small entity or $ _____ for other than a small entity) disclaiming the required period of time is enclosed herewith (see PTO/SB/63).

4. STATEMENT: The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOTE: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D)).]

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

Shengtai Tsao — Signature

2/19/2008 — Date

(SHENG TAI TSAO) SHENG TAI (TED) TSAO — Typed or printed name

Registration Number, if applicable

2979 HEIDI DRIVE, SAN JOSE, CA 95132 — Address

408-813-0536 — Telephone Number

Address

Enclosures:
- ☒ Fee Payment
- ☐ Reply
- ☐ Terminal Disclaimer Form
- ☒ Additional sheets containing statements establishing unintentional delay
- ☐ Other: _____

CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]

I hereby certify that this correspondence is being:

☑ Deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

☐ Transmitted by facsimile on the date shown below to the United States Patent and Trademark Office at (571) 273-8300.

Date

Shengtai Tsao — Signature

SHENG TAI TSAO — Typed or printed name of person signing certificate

Petition For Recovering of Abandoned Application 10/726, 897

Dear Ladies and Gentlemen:

I didn't aware that the 10/726,897 application entitled "Use of Wireless Devices' External Storage" with filing date of 12/4/2003 by me "Sheng (Ted) Tai Tsao", was abandoned until yesterday (2/14/2008). I think this is an unintentional abandonment based on following facts:

1) 12/4/2003 ---- is the filing date of 10/726,897, which USPTO sent me with confirmation No. 4178, mailed to me on 3/5/2004.

2) 3/5/2004 ----- USPTO also sent me a Notice to file missing part with requirement of substituting a single lined specification with double lined specification and plus $75 dollar for processing fee.

3) between ----- I never receive any notice of abandonment for this application from USPTO. Also, I had drafted a double lined specification to compliance with standard, which may be sent to USPTO during this period of time or at least sent on 12/21/2004.

4) 12/21/2004 --- I have a record from bank statement for a check of $75 dollar which paid on 12/21/2004 to USPTO in response to Notice to file mission part for 10/726,897. (see attached bank statement).

5) 1/30/2008 ---- I have filed a preliminary amendment for 10/726,897 because I have found that the original specification does not compliance with standard format of USPTO as well as some grammatical error.

6) 2/14/2008 ----- I curiously called USPTO to check status of this application and the staff of USPTO told me that the 10/726,897 was abandoned.

All of above have indicated that the abandonment of this application is unintentional and I hope that USPTO can help me to recover from this abandoned application 10/726,897.

Thanks for your help, sincerely.

Sheng Tai (Ted) Tsao (the inventor of 10/726,897)
2979 Heidi Drive,
San Jose, CA 95132.
408-813-0536
ted.tsao@sttwebos.com
02/15/2008

Silicon Valley Bank

Statement of Account

THIS STATEMENT DATE 1-31-05
LAST STATEMENT DATE 12-31-04
ACCOUNT NUMBER 3300393761

ENCLOSURE DEBITS 1

SHENG TAI TSAO
DBA STT SYSTEMS
1650 ZANKER ROAD STE 240
SAN JOSE CA 95112

3300393761 PERSONAL CHECKING

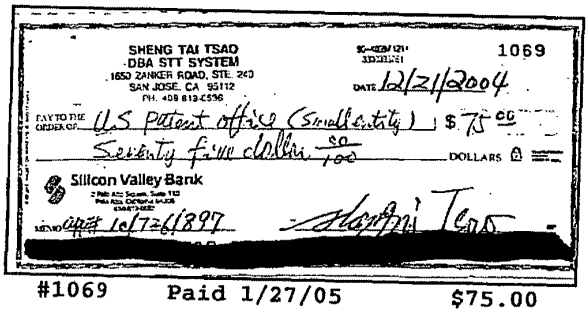
PREVIOUS BALANCE	12-31-04		1,426.99
+DEPOSITS/CREDITS			.00
-CHECKS/DEBITS		1	75.00
-SERVICE CHARGE			.00
CURRENT BALANCE			1,351.99

-CHECKS PAID-

SERIAL #	DATE	AMOUNT	SERIAL #	DATE	AMOUNT
1069	1-27	75.00			

-DAILY BALANCE SUMMARY-

DATE	BALANCE	DATE	BALANCE	DATE	BALANCE
12-31	1426.99	1-27	1351.99		



#1069 Paid 1/27/05 $75.00

7007 1490 0000 7559 2613

Mail Stop: Preliminary Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPLICANT:	Sheng (Ted) Tai Tsao	
APPLICATION NO.:	10/726,897	Confirmation No.: 4178
FILING DATE:	12/04/2003	
TITLE:	The Use of Wireless devices' external storage	
INITIAL EXAMINER:	ART UNIT: 2186	

Preliminary Amendment

Dear Sir:

I realize that the original specification and claims of this application contains numerous grammatical errors and it does not conform to the format of USPTO required for filing. Therefore, this filing is a preliminary amendment for application 10/726,897 without adding any new matters, please amend the above identified application as follow:

1: **Amendment on Specification:** starting on page 1 and there is no new matter being added.
2: **Amendment to the Claims**: staring on page 12.
3: **Amendment to the Abstraction**: starting on page 21. (Total: 22 pages)

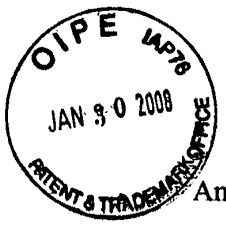
I will very appreciate your help and hope this application will be granted ASAP. If there is any additional fee required, please notifying me accordingly. Thanks for your help

Sincerely

Sheng Tai (Ted) Tsao
1/25/2008

2979 Heidi Drive
San Jose, CA 95132
408-813-0536

Sheng (Ted) Tai Tsao



Amendment on Specification

Amendment of specification. Please replace the amended contents bellow.

~~**The Use of Wireless Devices' External Storage**~~

~~**By: Sheng (Ted) Tai Tsao**~~
~~**11/19/2003**~~

~~**Field of the Invention**~~

~~This invention is the continuation of the previous invention, application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System", where the claim 20 item a), b), d), claim 30 item b), and together with claim 36 represent an invention of using storage of a server system as the external storage for wireless devices. This invention focuses on how can a wireless device user actually use external storage. Specially it focus on how can a wireless device to download data to its external storage, which its principle has preliminary described in claim 19) of previous invention, application number 60/402,626 of "IP Based Distributed Virtual SAN", to transmit data in wireless environment.~~

A Method and Apparatus of Providing External Storage of Wireless Devices

Cross-References To Related Application(s)

This application is the continuation-in-part of United States Patent Application Se. No.10/713,904, filed on August 5, 2002 in the name of the same inventor and entitled "Concurrent Web Based Multi-Task Support for Control Management System" and is also a continuation-in-part of United States Patent Application Se. No.10/713,905, filed on August 12, 2002 in the name of the same inventor and entitled "Method and Apparatus for web-based Storage On Demand".

Field of Invention

Sheng (Ted) Tai Tsao

This invention relates to provide wireless user having a web-based working environment to use larger number of external storage.

~~Background Information~~

~~a) Terminology:~~

~~The Internal Storage of a System:~~

~~The storage media such as hard disk drives, memory sticks, memory etc is connected to a system directly through bus or a few inches of cable. Therefore, the storage media actually is a component of a system in a same enclosure.~~

~~The External Storage of a System:~~

~~The storage media is not a component of a system in a same enclosure. Therefore, they has to be connected through longer cable such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless media etc. The storage media of external storage could be magnetic hard disk drives, solid sate disk, optical storage drives, memory card, etc. and could be in any form such as Raid, which usually consists a group of hard disk drives.~~

~~The Storage Partition, its Volumes, and the Corresponding File System:~~

~~To effectively use the storage system, the storage usually needs to be partitioned into small volumes. After partition, each volumes can be used to establish file systems on it. To simplify the discussion, the term of the storage volume, its corresponding file system, and the term of the partition of a storage are used without differentiation in this invention.~~

~~CCDSVM:~~

~~It is an abbreviation for central controlled distributed scalable virtual machine system. The CCDSVM allows a control management station to control group of systems and provide distributed services to client system in Internet, Intranet, and LAN environment.~~

~~ISP & ASP:~~

~~Internet service provider and application service provider.~~

~~b) Figures:~~

~~Fig. 1: This is the same figure as Fig. 1 of "Concurrent Web Based Multi-task Support for Control Management System" with exception of renaming console host as wireless device.~~

~~Fig. 2: This is the same figure as Fig. 1 except that it shows the more details of storage system controlled by the server. In addition, multiple wireless devices are presented.~~

~~Fig. 3: This figure shows the scheme of wireless device download contents from ISP/ASP or other web sites to the external storage of this wireless device.~~

~~Fig. 4: This is the same figure as Fig. 1 of "IP Based Distributed Virtual SAN" with exception that each IP storage server provide file system as external storage for wireless devices instead of provide IP based virtual SAN service. Also, each host actually is a wireless device.~~

~~c) Assumptions:~~

~~Unless specified, the programming language, the protocols used by each software modules, and the system used described in this invention are assumed to be the same as described in previous patents submission.~~

~~In the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.~~

Brief Description of the Invention

Today [[the]] wireless users commonly face the problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which usually limited to 256MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple GB of storage for their wireless devices as well as allow users to use [[GB]] gig-bytes storage for ~~their~~ multimedia application, the storage on a server can be used as the external storage for wireless devices. ~~This technology has been claimed in previous two patents submission by the same author. Now we can examine how does the external storage actually be used by the wireless device. We can~~ In one example that let each server unit (3 of Fig. 2) partitions its storage system in such way that each volumes will have multi-gig-bytes[[GB]] in size. Therefore, each user from web-browser of any of wireless devices can exclusively be assigned ~~and exclusively access~~ for accessing a specific storage volume on a server unit. In one embodiment, [[For]] for example, if ~~we need~~ to provide each user 4GB of storage space, then a 160GB disk drive can support 40 users. A 4096GB storage system on a server unit can support 1024 user.

Further, any data on the wireless device can be transmitted to assigned storage volumes on a server unit. In addition, in one embodiment, the user on the wireless device ~~also~~ can download the multimedia data from any ISP or ASP to the assigned storage volumes of a designated server unit through an out-band approach (Fig. 3). Finally, the user can use their web-browser~~, which has functionality of invoking~~ to invoke embedded video or music, to enjoy their stored multimedia contents.

These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures where:

~~**Description of the Drawings**~~

Brief Description of The Drawing

Fig. 1 has illustrated a wireless device (1) configured with a web-browser (8) and can access a server (3).

Fig. 2 has illustrated one or multiple wireless devices, each configured with web-browser, can access the assigned storage volumes of storage system on a server.

Fig. 3 has illustrated a scheme of present invention that how does a wireless device can download content file/data from ISP/ASP or other web sites to the assigned external storage of a wireless device.

Fig. 4 has illustrated a scheme of present invention that how to support unlimited wireless devices to have larger size of external storage.

In the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

Detailed Description Of The Invention

The following terms are used through out this patent application to describe the present invention. The internal storage media such as hard disk drives, memory sticks, memory etc is connected to a system directly through bus or a few inches of cable. Therefore, the internal storage media actually is a component of a system in a same enclosure. The external storage media is not a component of a system in a same enclosure. Therefore, they has to be connected through longer cable such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless media etc. The storage media of external storage could be magnetic hard disk drives, solid sate disk, optical storage drives, memory card, etc. and could be in any form such as Raid, which usually consisting a group of hard disk drives.

To effectively use the storage system, the storage usually needs to be partitioned into small volumes. After partition, each volumes can be used to establish a file systems on top of it. To simplify the discussion, the term of the storage volume, its corresponding

file system, and the term of the partition of a storage may be used without differentiation in this invention.

Central controlled distributed scalable virtual machine system ("CCDSVM") allows a control management station to control group of systems and provide distributed services to client system in Internet, Intranet, and LAN environment.

The ISP stands for Internet service provider and the ASP stands for application service provider.

Fig. 1 has demonstrates the network connection between a wireless device and a server, where

~~a)~~ Net (2) [[represent]] represents a communication link, which may combined with wireless and non-wireless connection media and guarantee the communication packet can be sent/received between wireless device (1) and the server (3). It is also assume that the net (2) infrastructure is built up in such way that the user from web-browser of a wireless device can access and browse any web-site on the Internet, Intranet.

~~b) As described in previous patents submission, the~~ [[console]] Console support software (5) on server (3) ~~can support web-based multi-task for~~ provides users on web-browser (8) of wireless device (1) with capability of running concurrent multi-tasks within a same single web-browser (8). Further, console support software (5) on server (3) provides [[the]] user on the web-browser (8) of wireless device (1) ~~is able~~ to perform creating ~~structured~~ layered files/directory or folders structure, and to perform data management operations such as delete, move, copy, rename for data files or folders/directories [[etc]] and so forth on the assigned storage volume of server (3).

~~c) As described in previous patents submission, the~~ The other software modules (9) of wireless device (1) is also capable to send data to or receive data from other service modules (7) of server (3) via communication link (2) through suitable IP or non-IP based protocol. The data file being sent cold be a digital photo picture, a message [[etc..]] and so forth without limits.

~~As described in previous patents submission, the~~The console supporting software (5) of server (3) and the other software modules (9) of wireless device (1) can be

implemented with any suitable languages such as C, C++, Java, [[etc]] and so forth without limits.

~~As described in previous patents submission,~~ The web-browser (8) of wireless device (1) can be any suitable software, which is capable to communication with web server software (4) on server (3) ~~or with any other web server~~ through HTTP protocol or other web based protocols.

Fig. 2~~: This figure~~ has demonstrated how does the storage of a server can be assigned to multiple wireless devices to use as their external storage.

~~a) As described in previous patents submitting,~~ [[the]] The storage system (10) of server (3) can be partitioned into multiple volumes (11) by administration staff through web-console (13) of web console host (12).

~~b)~~ The storage system (10) of server (3) can be partitioned in such way that each wireless devices can be assigned with a volume of desired size, which can be best supported by the server for maximum number of wireless devices.

~~c) As described in previous patents submitting,~~ Also, the storage connection media could be any kinds such as SCSI cable, IP cable, Fiber cable etc. The storage system itself could be various types~~. It assumes that~~ and the storage system can be accessed through IP or non-IP based network and protocols.

Fig. 3~~: This figure~~ has demonstrated how a user from a web-browser (8) on wireless devices(1) can download data from a known web-site (12) to his/her assigned external storage (10) of server (3). The dash-lined path (a) represents a communication channel between wireless device (1) and any remote ~~download~~ web-site (12), ~~which provides~~ from where the contents can be downloaded ~~for web download~~. The dash-lined path (b) [[represent]] represents a communication channel between wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between wireless devices (1) and the remote web-server (12), from where contents can be downloaded ~~which provide download contents~~.

~~The Detailed Description of the Invention~~

~~**1: The Use of the External Storage of the Wireless Device:**~~

~~The Fig. 2 shows a simplified diagram of the The wireless devices (1 of Fig. 2)~~ [[using]] Using external storage system (10 of Fig. 2) of a server (3 of Fig. 2) by wireless devices (1 of Fig. 2) [[,]] ~~which will~~ effectively [[resolve]] resolves the storage limitation problem of wireless devices (1 of Fig. 2).

~~**- Partition storage volumes (Fig. 2)**~~

~~With this invention,~~ In one embodiment, the entire storage (10 of Fig. 2) on a server (3 of Fig. 2) ~~need to be~~ can be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB each~~, which will~~ to allow the server to serve maximum number of wireless devices (1 of Fig. 2). With the web console support software (5 of Fig. 2) of the server (3 of Fig. 2), [[The]] the task of partitioning storage can be done through web-console (13 of Fig. 2) on console host (12 of Fig. 2) by administrative staff.

In order to support ~~such~~ storage partition, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of console host (12 of Fig. 2)~~. This including~~, which includes the storage device name, storage total size etc. Second, the administration staff on console host (12 of Fig. 2) can use web-console (13 of Fig. 2) to fill and [[to]] send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2)~~. The,~~ where the storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from web-console (13 of Fig. 2) of console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition, which divides entire storage into multiple small volumes. Finally, for each small storage volume[[,]] builds a corresponding file system ~~could be built up~~.

~~**- Assign storage volumes (Fig. 2):**~~

Each storage volumes with its corresponding file system (11 of Fig. 2) of the storage (10 of Fig. 2) on server (3 of Fig. 2) needs to be exclusively assigned ~~and~~

~~exported~~ to a given specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) on server (3 of Fig. 2).

~~- Data and storage volume management (Fig. 2)~~

~~1)~~ It is necessary to provide wireless user to manage data and storage volume on assigned external storage volumes. With the support of console support software modules (5 of Fig 2) of the server system (3 of Fig. 2), the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can setup the folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can perform all data management operations such as delete, copy, move, rename etc. on that file system.

~~In order to~~ To support ~~such~~ data management on external storage (10 of Fig. 2) from web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2), first the console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2) must ~~communicate with~~ send data information of said a server system to web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2). Therefore, the user from web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2)[[.]] ~~These~~ where, the operations include establishing folder/directory, copying, moving, or reaming data file [[etc]] and so forth. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server system (3 of Fig. 2) actually performs these operations on the assigned file system of assigned external storage volume (11 of Fig. 2) on the server system (3 of Fig. 2).

~~- Store data from wireless device into external storage (Fig. 2)~~

To store the received data such as digital photo pictures, or messages and so forth into the assigned file system on external storage (10 of Fig. 2) of a server (3 of Fig. 2), the [[other]] software modules (9 of Fig. 2) of wireless device (1 of Fig. 2) ~~need to~~ send ~~these~~ received data to [[other]] service software modules (7 of Fig. 2) of server (3 of Fig.

2) via communication link ~~between them~~. Upon receiving data, the ~~other~~ service software modules (7 of Fig. 2) of server (3 of Fig. 2) ~~of server (3 of fig. 2)~~ write [[these]] received data to assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2). The protocol used between these two communication entities could be either IP or non-IP based protocol.

~~Download data from remote web server site into external storage (Fig. 3)~~

If the wireless device (1 of Fig. 3) user want to download data from remote web server (12 of Fig. 3) directly into assigned file system (11 of Fig. 3) of the external storage (10 of Fig. 3) on server (3 of Fig. 3), the following steps are required:

1) ~~The user~~ User from web-browser (8 of Fig. 3) of a specific wireless device (1 of Fig. 3) accesses a remote download web server site (12 of Fig. 3) and [[obtain]] obtains the information for download via path (a) of Fig. 3. For example, to get information on a web-page of web server (12 of Fig. 3), which contains the data name for download.
2) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) obtains download information, which becomes available in the cached web-pages on wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the download site (12 of Fig. 3).
3) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) send the obtained download information to [[other]] service software modules (7 of Fig. 3) of storage server (3 of Fig. 3) via path (b) of Fig. 3.
4) Upon receiving the download information from a specific wireless device (1), the [[other]] service software module (7 of Fig. 3) of the storage server (3 of Fig. 3) [[send]] sends a web download request to download web-site (12 of Fig. 3) via path (c) of Fig. 3 based on download information obtained[[. It then]] and further receives the download ~~information~~ data from web server of download web-site (12 of Fig. 3).
5) Upon receiving downloaded data, the [[other]] service software modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write [[these]] received data for the specific wireless device (1 of Fig. 3) into the assigned external file system (11 of Fig. 3) on the server (3 of Fig. 3).

~~Retrieve data from external storage of wireless device~~

There several ways to retrieve data from external storage of wireless device to wireless device itself. In one embodiment, [[If]] a web-browser has embedded video or music functionality, the web-browser (8 of Fig.) of a wireless device (1 of Fig. 2) can be used to retrieve and play [[those]] multimedia data file such as video or music stored in wireless device's external storage volume (10 of Fig.2), which actually located on a server (3 of Fig. 2). In another embodiment, ~~If there is needs,~~ the [[other]] software module (9 of Fig. 2) of wireless device (1 of Fig. 2) [[also]] can retrieve data file from assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2) via communication link.

~~Support external storage for large number of wireless devices~~

It is possible to provide mass number of wireless device users with external storage. For example, ~~If we need~~ to provide each user 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on a server unit can support 2024 user. ~~Each server only can efficiently support a limited size of the storage system.~~ In order to support a large number of wireless devices with external storage, for example supporting ~~such as~~ 500,000 ~~of them~~ wireless devices, a larger number of servers are required, in this case 250 servers is required. In order to let a larger number of the server to effectively support larger number of the wireless devices, an infrastructure like CCDSVM is desirable~~, which has been described in previous patents submission~~. With CCDSVM the control management station can control larger number of storage servers to provide external storage for [[huge]] unlimited number of the wireless devices.

Amendments To The Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Claims 1 – 10 canceled

11. (New) A method and apparatus of out-band downloading a file from a web-site to a storage of a targeted system comprising:

provide a user using web-browser of a system to accesses a web-page of a remote web site, wherein said a web-page contains file download information, wherein file downloading information includes the file name, the IP address of said remote web site, and related information for downloading;

software modules of said a system obtain said file download information from cached web pages of said a system;

said software modules of said a system sends the obtained file download information to service software modules of a targeted system via communication network through communication protocols;

said service modules of said a targeted system receives said file download information and send a download request to said remote web site via communication network through communication protocols; and

said service modules of said a targeted system receiving the download data file stream from said a remote web-site directly without goes through said a system and write received data file stream into assigned storage volume (file system).

12. (New) The claim 11, wherein

said communication network is Internet, Intranet, or LAN connected by communication media and said communication protocols can be IP based or non IP based protocols .

13. (New) The claim 11, wherein

said a system, said a targeted system are desktop, or laptop, or a wireless handheld device, or a server system; wherein said a remote web-site is a web server system;

14. (New) A method and apparatus of providing wireless device users to create and utilize web-based external storage system on a server comprises:

console support software of a server system provides each privileged user a web-browser based work environment and though web-browser of each privileged user's local system to perform tasks of partitioning the storage of said a server system into multiple volumes, perform tasks of creating each corresponding file system on top of each said volumes, and perform tasks of assigning said each file system to each wireless device; wherein, said tasks can be run concurrently in said each web-browser; wherein, said each user's local systems are connected to said a server system via a communication network through communication protocols;

said console support software provides each wireless device user a web-browser based work environment and through web-browser of wireless device to perform task of storing data of wireless device to said assigned file system of said a server system, perform task of out-band downloading desired file directly from any remote web-site into said assigned file system of said a server system, and perform tasks of retrieving data stored on said assigned file system of said a server system to said wireless device, and perform tasks of creating, copying, deleting, renaming, moving, and various file & file folder management operations over said assigned file system; wherein, said tasks can be run concurrently within said a web-browser; wherein, said wireless device are connected to said a server system and to said remote web-site via communication network through communication protocols.

15: (New) The claim 14 further includes a method of supporting of performing tasks of partitioning the storage of said a server system into multiple volumes that includes:

said console support software of said a server system sends storage device name, total size and related storage device information of said a server system to the web-browser of said privilege user's local system;

said console support software of said a server system provides privileged user through said web-browser to specify and input desired number of storage volumes/partitions and the size of each volumes/partitions for a said storage device; and further said inputted desired storage volume partition information are sent from web-browser to console support software of said a server system; and

said console support software of said a server system performs task of storage partition to divide said storage device into multiple small volumes according to said inputted desired storage volume partition information, and further perform task of creating file system on top of each said small storage volume.

16. (New) The claim 14, wherein to perform task of storing data of wireless device to said assigned file system of a said server further includes:

software module of a wireless device send data of said a wireless device to service software module of said a server system via communication network, and service software module of said a server system write received data to the assigned file system of external storage volume on said server; wherein,

said data could is a data file or message data; wherein

communication protocols used over communication network are IP or non-IP based protocols.

17. (New) The claim 14, wherein to perform tasks of retrieving data stored on said assigned file system of said a server system to said wireless device further includes:

service software of wireless device provides retrieving data file from assigned file system of said a server system via communication network; and

web-browser of wireless device provides retrieving data file from assigned file system of said a server system via communication network; wherein

said web browser can invoke the embedded video or audio multimedia data file, which stored on wireless' external storage volume (file system) located on said a server system.

18: (New) The claim 14, wherein to perform task of out-band downloading desired file directly from any remote web-site into said assigned file system of said a server further includes:

provide a user using web-browser of a wireless device to accesses a web-page of a remote web site, wherein said a web-page contains file download information, wherein file downloading information includes the file name, the IP address of said remote web site, and related information for downloading; wherein said a remote web-site is a web server system;

software modules of said a wireless device obtain said file download information from cached web pages of said a wireless device;

said software modules of said a wireless device sends the obtained file download information to service software modules of said a server system via communication network and through communication protocols;

said service modules of said a server system receives said file download information, and sends a download request to said remote web site via said communication network through communication protocols;

said service modules of said a server system receiving the download data file stream from said a remote web-site directly without goes through said a wireless device, and write receiving data file stream into said assigned file system (storage volume) on said a server system for said a wireless device.

19: (New) The claim 14, wherein to perform tasks of creating, copying, deleting, renaming, moving, and various file & file folder management operations over said assigned file system further include:

console support software of said a server system provides each wireless device user a web-browser based operating environment and through web-browser of wireless device to obtain file folder and file information on assigned file system of said a server system;

said console support software modules of said a server system provides each wireless device user a web-browser based operating environment and through web-browser of wireless device to select desired data management operations and send

information of desired operation to console support software modules of said a server system; and

said console support software modules of said a server system receives said information of desired data operation and performs desired operations on said assigned file system/storage volume of said a server system; and

wherein, said operations include creating, deleting, renaming, copying , moving and so forth over file and file folders/directories structure.

20: (New) The claim 14, wherein communication network further includes said communication network is Internet or Intranet or LAN; and said communication protocols are IP based or non-IP based protocols.

21: (New) The claim 14, wherein

where in said a server system configured with respect storage capacity to provide external storage for one or multiple wireless devices users; wherein said remote web-site is a web server system; wherein

said privileged user's local system is said a server system or any remote system; wherein said remote system can be a desktop, or a laptop, or a server system, or can be a handheld wireless device;

22: (New) A method and apparatus of provide web-based external storage for larger number of wireless devices by deploying the central controlled distributed scalable virtual system (CCDSVM) comprising:

A control system, one or multiple non-control systems, one or multiple wireless devices, and one or multiple console hosts are connected together via a communication network through communication protocols; wherein, said non-control system configured with storage to provide external storage for said wireless devices;

console support software coupled with web-server software of said control system provides each privileged user a web-browser based work environment and though web-browser of each privileged user's local console host to perform tasks of partitioning the storage of said each non-control system into multiple volumes, to perform tasks of

creating each corresponding file system on top of each said volumes, and to perform tasks of assigning said each file system to each wireless device; wherein, said tasks can run concurrently in said each web-browser;

said console support software coupled with web-server software of said control system provides each wireless device user a web-browser based work environment and through web-browser of wireless device to perform task of storing data of wireless device to said assigned file system of said a server system, to perform task of out-band downloading desired file directly from any remote web-site into said assigned file system of said non-control system, and to perform tasks of retrieving data stored on said assigned file system of said non-control system to said wireless device, and to perform tasks of creating, copying, deleting, renaming, moving, and various file & file folder management operations over said assigned file system of said non-control system; wherein, said tasks can be run concurrently within said a web-browser;

23. (New) The claim 22 wherein

Said communication network is Internet, Intranet, and LAN; and said communication protocols are IP-based or non-IP based protocols;

24. (New) The claim 22, wherein said control system and said a remote web-site is a server, or a desktop, or laptop system, or any device which is capable provide web-service; wherein said console host configured with web-browser, which could it be a server, a desktop or laptop system, or a wireless handheld device.

25. (New) The claim 22, wherein said console support software of control system provides each privileged user a web-browser based work environment and through web-browser of console host to perform tasks of partitioning the storage further includes steps of:

said console support software of said control system communicate with service software of non-control system to obtain storage device name, total size and related storage device information of said non-control system; and send obtained storage information to the web-browser of said privilege user's console host;

said console support software of said a server system provides privileged user through said web-browser to specify and input desired number of storage volumes/partitions and the size of each volumes/partitions for a said storage device of non-control system; and further said inputted desired storage volume partition information are sent from web-browser to console support software of said control system; and

said console support software of said control system transmit said desired storage volume partition information to service software of said non-control system; and said non-control system performs task of storage partition to divide said storage device into multiple small volumes according to said inputted desired storage volume partition information, and further perform task of creating file system on top of each said small storage volume.

26. (New) The claim 22, wherein to perform task of storing data of wireless device to said assigned file system of a said non-control server further includes:

software module of a wireless device send data of said a wireless device to service software module of said non-control system via communication network, and service software module of said non-control system write received data to the assigned file system of external storage volume on said non-control server; wherein,

said data could is a data file or message data; wherein

communication protocols used over communication network are IP or non-IP based protocols.

27. (New) The claim 14, wherein to perform tasks of retrieving data stored on said assigned file system of said con-control system to said wireless device further includes:

service software of wireless device provides retrieving data file from assigned file system of said non-control system via communication network; and

web-browser of wireless device provides retrieving data file from assigned file system of said non-control system via communication network; wherein

said web browser can invoke the embedded video or audio multimedia data file, which stored on wireless' external storage volume (file system) located on said non-control system.

28. (New) The claim 22, wherein to perform task of out-band downloading desired file directly from any remote web-site into said assigned file system of said non-control system further includes:

provide a user using web-browser of a wireless device to accesses a web-page of a remote web site, wherein said a web-page contains file download information, wherein file downloading information includes the file name, the IP address of said remote web site, and related information for downloading; wherein said a remote web-site is a web server system;

software modules of said a wireless device obtain said file download information from cached web pages of said a wireless device;

said software modules of said a wireless device sends the obtained file download information to service software modules of said a assigned non-control system via communication network and through communication protocols;

said service modules of said a non-control system receives said file download information, and sends a download request to said remote web site via said communication network through communication protocols;

said service modules of said a non-control system receiving the download data file stream from said a remote web-site directly without goes through said a wireless device, and write receiving data file stream into said assigned file system (storage volume) on said a non-control system for said a wireless device.

29: (New) The claim 22, wherein to perform tasks of creating, copying, deleting, renaming, moving, and various file & file folder management operations over said assigned file system further include:

console support software coupled with web-server software of said control system provides each wireless device user a web-browser based operating environment and

through web-browser of wireless device to obtain file folder and file information on assigned file system of a non-control system;

said console support software modules of said control system provides each wireless device user a web-browser based operating environment and through web-browser of wireless device to select desired data management operations and send information of desired operation to console support software modules of said control system; and

said console support software modules of said control system receives and transmit said information of desired data operation to service software of said non-control system; and

said service software of non-control system performs desired operations on said assigned file system/storage volume of said non-control system; and
wherein, said operations include creating, deleting, renaming, copying , moving and so forth over file and file folders/directories structure.

Please replace the following abstraction with amended abstraction

Abstraction

~~In order to solve the wireless device's limited storage problem, the wireless device can use the storage of a server as their external storage. To effectively let the storage server providing external storage (file system) for wireless device, the storage of a server need to be partitioned into multiple small storage volumes, which also need to be exported to each specific wireless device. With the supporting of console support software module of the server, the user from web-browser of a wireless device can manage the assigned external storage volume on a server such as create delete directory/folder, move, copy, delete, rename files etc.. The data on the wireless device can be stored into this external storage. The user from the web-browser also can perform download data from a remote web-site to his/her assigned private external storage on a server. In addition, if a web-browser of wireless device support the embedded video or music, the user from the web-browser of a wireless device can access and play the multimedia data, which stored on external storage of the wireless device. Finally, to support huge number of wireless devices with external storage, the CCDSVM infrastructure can be deployed. The larger number of server units controlled by a central control station can provide huge amount of storage volumes for huge amount of wireless devices.~~

Adapting web-based external storage, wireless device can posses huge amount of storage that current any wireless device's internal storage can not provide. To effectively let the storage server providing external storage (file system) for wireless device, the storage of a server need to be partitioned into multiple small storage volume and need to be linked to each specific wireless device. The console support software coupled with web-server software of a server provides both users of wireless device and console host a web-browser based work environment and allow both user through web-browser to perform tasks of creating and utilizing external storage (file system). To support larger number of wireless

devices with external storage, the CCDSVM infrastructure can be deployed. The larger number of storage server controlled by a central control system can satisfy unlimited wireless devices external storage needs.

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
10/726,897	12/04/2003	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☒		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	01/30/2008	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0	X $25 =	0	OR	X $ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $105 =	0	OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/LORENDA M. HOOD/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/726,897	12/04/2003	Sheng (Ted) Tai Tsao	

CONFIRMATION NO. 4178

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
SAN JOSE, CA 95132

FORMALITIES LETTER

OC000000012036294

Date Mailed: 12/13/2004

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is insufficient.
  Applicant must submit $ **10** *to complete the basic filing fee for a small entity.*
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125, is required. The specification, claims, or abstract page(s) submitted is not acceptable and cannot be scanned or properly stored because:
  - The line spacing on the specification, claims, or abstract is not 1½ or double spaced (see 37 CFR 1.52(b)).

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is $**75** for a Small Entity

- **$10** Statutory basic filing fee.
- **$65** Late oath or declaration Surcharge.

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Adjustment date: 01/24/2005  WASFAW1
12/05/2003 WABRHAM1 00000075 10726897
01 FC:2001                    -375.00 OP
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01/24/2005 WASFAW1  00000009 10726897

01 FC:2051                      65.00 OP
02 FC:1999                     385.00 OP
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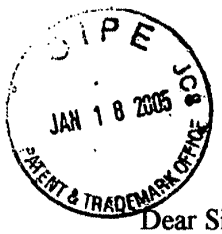

Dear Sir/Madam,

I am, Sheng (Ted) Tai Tsao, providing materials to respond to your "Notice to File Mission Parts of Nonprovisional Application" of 12/13/2004. Enclosed please find following materials:

1: The original copy of your "Notice of to File Mission Parts of Nonprovisional Application" of 12/13/2004" for application number 10/726,897.
2: The re-printed with 1½ spaced version of our application 10/726,897 (The Use of Wireless Devices' External Storage), which includes description (page 1 – page 9), claims (page 10 – page 13), Abstraction (page 14), and figures (page 15 – page 18).
3: A check of $75 dollar.

Thanks for your help

Sincerely,

Sheng (Ted) Tai Tsao

1/10/2004

The Use of Wireless Devices' External Storage

By: Sheng (Ted) Tai Tsao

11/19/2003

Field of the Invention

This invention is the continuation of the previous invention, application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System", where the claim 20 item a), b), d), claim 30 item b), and together with claim 36 represent an invention of using storage of a server system as the external storage for wireless devices. This invention focuses on how can a wireless device user actually use external storage. Specially it focus on how can a wireless device to download data to its external storage, which its principle has preliminary described in claim 19) of previous invention, application number 60/402,626 of "IP Based Distributed Virtual SAN", to transmit data in wireless environment.

Background Information

a) Terminology:

The Internal Storage of a System:

The storage media such as hard disk drives, memory sticks, memory etc is connected to a system directly through bus or a few inches of cable. Therefore, the storage media actually is a component of a system in a same enclosure.

The External Storage of a System:

The storage media is not a component of a system in a same enclosure. Therefore, they has to be connected through longer cable such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless media etc. The storage media of external storage could be magnetic hard disk drives, solid sate disk, optical storage drives, memory card, etc. and could be in any form such as Raid, which usually consists a group of hard disk drives.

The Storage Partition, its Volumes, and the Corresponding File System:
To effectively use the storage system, the storage usually needs to be partitioned into small volumes. After partition, each volumes can be used to establish file systems on it. To simplify the discussion, the term of the storage volume, its corresponding file system, and the term of the partition of a storage are used without differentiation in this invention.

CCDSVM:
It is an abbreviation for central controlled distributed scalable virtual machine system. The CCDSVM allows a control management station to control group of systems and provide distributed services to client system in Internet, Intranet, and LAN environment.

ISP & ASP:
Internet service provider and application service provider.

b) Figures:

Fig. 1: This is the same figure as Fig. 1 of "Concurrent Web Based Multi-task Support for Control Management System" with exception of renaming console host as wireless device.

Fig. 2: This is the same figure as Fig. 1 except that it shows the more details of storage system controlled by the server. In addition, multiple wireless devices are presented.

Fig. 3: This figure shows the scheme of wireless device download contents from ISP/ASP or other web sites to the external storage of this wireless device.

Fig. 4: This is the same figure as Fig. 1 of "IP Based Distributed Virtual SAN" with exception that each IP storage server provide file system as external

storage for wireless devices instead of provide IP based virtual SAN service. Also, each host actually is a wireless device.

c) Assumptions:

Unless specified, the programming language, the protocols used by each software modules, and the system used described in this invention are assumed to be the same as described in previous patents submission.

In the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

Brief Description of the Invention

Today the wireless users commonly face the problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which usually limited to 256MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple GB of storage for their wireless devices as well as allow users to use GB storage for their multimedia application, the storage on a server can be used as external storage for wireless devices. This technology has been claimed in previous two patents submission by the same author. Now we can examine how does the external storage actually be used by the wireless device. We can let each server unit (3 of Fig. 2) partitions its storage system in such way that each volumes will have multi-GB in size. Therefore, each user from web-browser of any of wireless devices can exclusively be assigned and exclusively access a specific storage volume on a server unit. For example, if we need to provide each user 4GB of storage space, then a 160GB disk drive can support 40 users. A 4096GB storage system on a server unit can support 1024 user. Further, any data on the wireless device can be transmitted to assigned storage volumes on a server unit. In addition, the user on the wireless device also can download the

multimedia data from any ISP or ASP to the assigned storage volumes of a designated server unit through out-band approach (Fig. 3). Finally, the user can use their web-browser, which has functionality of invoking embedded video or music, to enjoy their stored multimedia contents.

These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures where:

Description of the Drawings

Fig. 1: This figure demonstrates the network connection between a wireless device and a server, where

a) Net (2) represent a communication link, which may combined with wireless and non-wireless connection media and guarantee the communication packet can be sent/received between wireless device and the server. It is also assume that the net (2) infrastructure is built up in such way that the user from web-browser of a wireless device can access and browse any web-site on the Internet, Intranet.
b) As described in previous patents submission, the console support software (5) on server (3) can support web-based multi-task for users on web-browser (8) of wireless device (1). Further, the user on the web-browser (8) is able to perform creating structured layered files/directory or folders, and perform data management operations such as delete, move, copy, rename for data files or folders/directories etc on the assigned storage volume of server (3).
c) As described in previous patents submission, the other software modules (9) of wireless device (1) is also capable to send data to or receive data from other service modules (7) of server (3) via communication link (2) through suitable IP or non-IP based protocol. The data file being sent cold be a digital photo picture, a message etc..

d) As described in previous patents submission, the console supporting software (5) of server (3) and the other software modules (9) of wireless device (1) can be implemented with any suitable languages such as C, C++, Java, etc.

e) As described in previous patents submission, the web-browser (8) of wireless device (1) can be any suitable software, which is capable to communication with web server software (4) on server (3) or with any other web server through HTTP protocol.

Fig. 2: This figure demonstrated how does the storage of a server can be assigned to multiple wireless devices as their external storage.

a) As described in previous patents submitting, the storage system (10) of server (3) can be partitioned into multiple volumes (11) by administration staff through web-console (13) of web console host (12).

b) The storage system (10) of server (3) can be partitioned in such way that each wireless devices can be assigned with a volume of desired size, which can be best supported by the server for maximum number of wireless devices.

c) As described in previous patents submitting, the storage connection media could be any kinds such as SCSI cable, IP cable, Fiber cable etc. The storage system itself could be various types.

d) It assumes that the storage system can be accessed through IP or non-IP based network and protocols.

Fig. 3: This figure demonstrated how a user from a web-browser (8) on wireless devices(1) can download data from a known web-site (12) to his/her assigned external storage (10) of server (3). The dash-lined path (a) represents a communication channel between wireless device (1) and any remote download web-site (12), which provides the contents for web download. The dash-lined path (b) represent a communication channel between wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between wireless devices (1) and the remote web-server (12), which provide download contents.

The Detailed Description of the Invention

1: The Use of the External Storage of the Wireless Device:

The Fig. 2 shows a simplified diagram of the wireless devices (1 of Fig. 2) using external storage system (10 of Fig. 2) of a server (3 of Fig. 2), which will effectively resolve the storage limitation problem of wireless devices (1 of Fig. 2).

- Partition storage volumes (Fig. 2)

With this invention, the entire storage (10 of Fig. 2) on a server (3 of Fig. 2) need to be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB each, which will allow the server to serve maximum number of wireless devices (1 of Fig. 2). With the web console support software (5 of Fig. 2) of the server (3 of Fig. 2), The task of partitioning storage can be done through web-console (13 of Fig. 2) on console host (12 of Fig. 2) by administrative staff.

In order to support such storage partition, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of console host (12 of Fig. 2). This including the storage device name, storage total size etc. Second, the administration staff on console host (12 of Fig. 2) can use web-console (13 of Fig. 2) to fill and to send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from web-console (13 of Fig. 2) of console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition, which divides entire storage into multiple small volumes. Finally, for each small storage volume, a corresponding file system could be built up.

- Assign storage volumes (Fig. 2):

Each storage volumes with its corresponding file system (11 of Fig. 2) of the storage (10 of Fig. 2) on server (3 of Fig. 2) needs to be exclusively assigned and exported to a given specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) on server (3 of Fig. 2).

- Data and storage volume management (Fig. 2)

1) With the support of console support software modules (5 of Fig 2) of the server system (3 of Fig. 2), the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can setup the folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can perform all data management operations such as delete, copy, move, rename etc. on that file system.

   In order to support such data management on external storage (10 of Fig. 2) from web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2), first the console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2) must communicate with web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2). Therefore, the user from web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2). These operations include establishing folder/directory, copying, moving, or reaming data file etc. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server system (3 of Fig. 2) actually performs these operations on the assigned file system of assigned external storage volume (11 of Fig. 2) on the server system (3 of Fig. 2).

- Store data from wireless device into external storage (Fig. 2)

To store the data such as digital photo pictures, or messages into the assigned file system on external storage (10 of Fig. 2) of a server (3 of Fig. 2), the other software modules (9 of Fig. 2) of wireless device (1 of Fig. 2) need to send these data to other service modules (7 of Fig. 2) of server (3 of Fig. 2) via communication link between them. Upon receiving data, the other service modules (7 of Fig. 2) of server (3 of Fig. 2) write these data to assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2). The protocol used between these two communication entities could be either IP or non-IP based protocol.

- **Download data from remote web server site into external storage (Fig. 3)**

If the wireless device (1 of Fig. 3) user want to download data from remote web server (12 of Fig. 3) into assigned file system (11 of Fig. 3) of the external storage (10 of Fig. 3) on server (3 of Fig. 3), the following steps are required:

1) The user from web-browser (8 of Fig. 3) of a specific wireless device (1 of Fig. 3) accesses a remote download web server site (12 of Fig. 3) and obtain the information for download via path (a) of Fig. 3. For example, to get a web-page, which contains the data name for download.
2) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) obtains download information, which becomes available in the cached web-pages on wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the download site (12 of Fig. 3).
3) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) send the obtained download information to other service modules (7 of Fig. 3) of storage server (3 of Fig. 3) via path (b) of Fig. 3.
4) Upon receiving the download information from a specific wireless device (1), the other service module (7 of Fig. 3) of the storage server (3 of Fig. 3) send a web download request to download web-site (12 of Fig. 3) via path (c) of Fig. 3 based on download information obtained. It then receives the download information data from web server of download web-site (12 of Fig. 3).
5) Upon receiving downloaded data, the other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write these data for the specific wireless device

(1 of Fig. 3) into the assigned file system (11 of Fig. 3) on the server (3 of Fig. 3).

- **Retrieve data from external storage of wireless device**
  1) If a web-browser has embedded video or music functionality, the web-browser (8 of Fig.) of a wireless device (1 of Fig. 2) can be used to retrieve and play those multimedia data file such as video or music stored in wireless device's external storage volume (10 of Fig.2), which actually located on a server (3 of Fig. 2).
  2) If there is needs, the other software module (9 of Fig. 2) of wireless device (1 of Fig. 2) also can retrieve data file from assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2).

- **Support external storage for large number of wireless devices**

If we need to provide each user 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on a server unit can support 2024 user. Each server only can efficiently support a limited size of the storage system. In order to support a large number of wireless devices with external storage such as 500,000 of them, a larger number of servers are required, in this case 250 servers is required. In order to let a larger number of the server to effectively support larger number of the wireless devices, an infrastructure like CCDSVM is desirable, which has been described in previous patents submission. With CCDSVM the control management station can control larger number of storage servers to provide external storage for huge number of the wireless devices.

2: What are Claimed:

Support a small number of wireless devices by a storage server

1: The method of using storage of a server system as external storage of the wireless devices including following steps:

a) Partition the storage of a server system into multiple volumes, let each of them with suitable size, and establish a corresponding file system on top of it.

b) Export each storage volumes (file system) of a server system to a specific wireless device.

c) The user of wireless device could manage assigned external storage volume (file system) on a server and its data stored there.

d) The user could store the data of wireless device into the assigned external storage volume (file system) on server system.

e) The user of wireless device could download data directly from remote web-site into its assigned external storage (file system) on a server without goes through the wireless device itself.

f) The user of wireless device could retrieve and play multimedia data stored on external storage volume (file system) through web-browser of the wireless device.

2: The claim 1, wherein, step a) further includes

a) With supporting of console support software of the server, the server admin staff can perform partitioning the storage of the server from web-console on console host.

b) The server admin staff may also partition the storage of the server from the native user console on the server.

3: The claim 2, wherein, step a) further includes

a) The console support software of the server must send storage information of the server to the web-console of console host. This including the storage device name, storage total size etc.

b) The administration staff on console host can use web-console to fill and to send the storage partition information to the console support software of the server. The

storage partition information includes the number of the partitions (volumes) and the size of each partition (volume).

c) Upon receiving storage partition information from web-console of console host, the console support software of the server performs the actual storage partition, which divides entire storage into multiple small volumes.

d) For each small storage volumes, a corresponding file system could be built on top of it.

4: The claim 1, wherein, step b) further includes

a) The console support software of the server must make association between each storage volumes (file system) of the server and each specific wireless devices in such way that permitting each storage volume be exclusively accessible to a web-browser of a specific wireless device.

5: The claim 1, wherein, step c) further includes

a) With the support of console support software modules of the server system, the user from web-browser of wireless device can setup the folder/directory structure on his/her assigned external storage volume (file system), which located on the server.

b) With the support of console support software modules of the server system, the user from web-browser of wireless device can perform all data management operations such as delete, copy, move, rename etc. on his/her assigned external storage volume (file system), which located on the server.

6: The claim 5, wherein, step a) and b) further include

a) The console support software modules of the server system must communicate with web-browser of wireless device in such way that the user from web-browser of wireless device can choose desired data management operations and send information of desired operation to console support software modules of the server system. These operation include creating, deleting folders/directories, copying, moving, or reaming data file etc.

b) Upon receiving the data management operation, the console support software modules of the server system actually performs these operations on a specific storage volume (file system) of the server system.

7: The claim 1, wherein, step d) further includes

a) To store the data such as digital photo pictures, or messages from wireless device into the assigned external storage (file system) on a server, the other software modules of wireless device need to send these data to other service modules of the server via communication link between them.
b) Upon receiving data, the other service modules of the server write these data to the assigned storage volume (file system) of the server.

8: The claim 1, wherein, step e) further includes

If the wireless device user want to download data from remote web server into its assigned external storage on server, the following steps are required:

a) The user from web-browser of a specific wireless device accesses a remote download web site and obtains the information for download via path between them. The information of downloading includes the data file name to be downloaded, the IP address of that download web site etc.
b) The other software modules of a specific wireless device obtain download information, which becomes available in the cached web pages on wireless device after the web-browser accessing the download site.
c) The other software modules of a specific wireless device send the obtained download information to other service modules of external storage server via path between them.
d) Upon receiving the download information from a given specific wireless device, the other service modules of the external storage server send a web download request to download web-site via path between them based on download information obtained and then receives the download data from download web-site. The HTTP protocol can be used for sending and receiving such information

between other service modules of the external storage server and the web server of the remote download web-site.

e) Upon receiving downloaded data, the other service modules of the external storage server write these data into assigned storage volume (file system) for that given specific wireless device.

9: The claim 1, wherein, step f) further includes

a) The user from web-browser of wireless device can browse the files/folders stored in its assigned external storage volume (file system) on a server system.

b) If a web-browser capable to invoke the embedded video or audio functionality, the user from web-browser of wireless device can play the video or audio multimedia data, which stored on wireless' external storage volume (file system) located on a server.

Support external storage for larger number of wireless devices

10: To support huge number of wireless devices, the CCDSVM infrastructure can be deployed, with which a larger number of storage servers can be organized to provide external storage for wireless devices while each storage server can support a fix number of wireless device to its capacity limits.

Abstraction

In order to solve the wireless device's limited storage problem, the wireless device can use the storage of a server as their external storage. To effectively let the storage server providing external storage (file system) for wireless device, the storage of a server need to be partitioned into multiple small storage volumes, which also need to be exported to each specific wireless device. With the supporting of console support software module of the server, the user from web-browser of a wireless device can manage the assigned external storage volume on a server such as create delete directory/folder, move, copy, delete, rename files etc.. The data on the wireless device can be stored into this external storage. The user from the web-browser also can perform download data from a remote web-site to his/her assigned private external storage on a server. In addition, if a web-browser of wireless device support the embedded video or music, the user from the web-browser of a wireless device can access and play the multimedia data, which stored on external storage of the wireless device. Finally, to support huge number of wireless devices with external storage, the CCDSVM infrastructure can be deployed. The larger number of server units controlled by a central control station can provide huge amount of storage volumes for huge amount of wireless devices.

Wireless devices supports in a simple environment

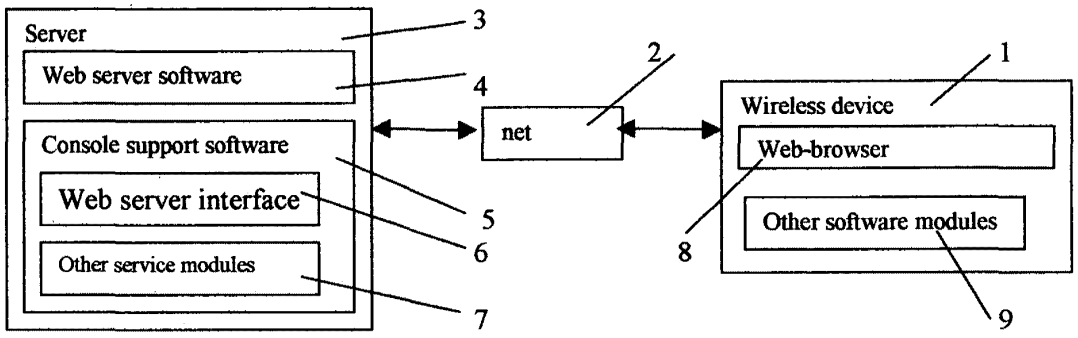

Fig. 1

Wireless devices access external storage through web browser

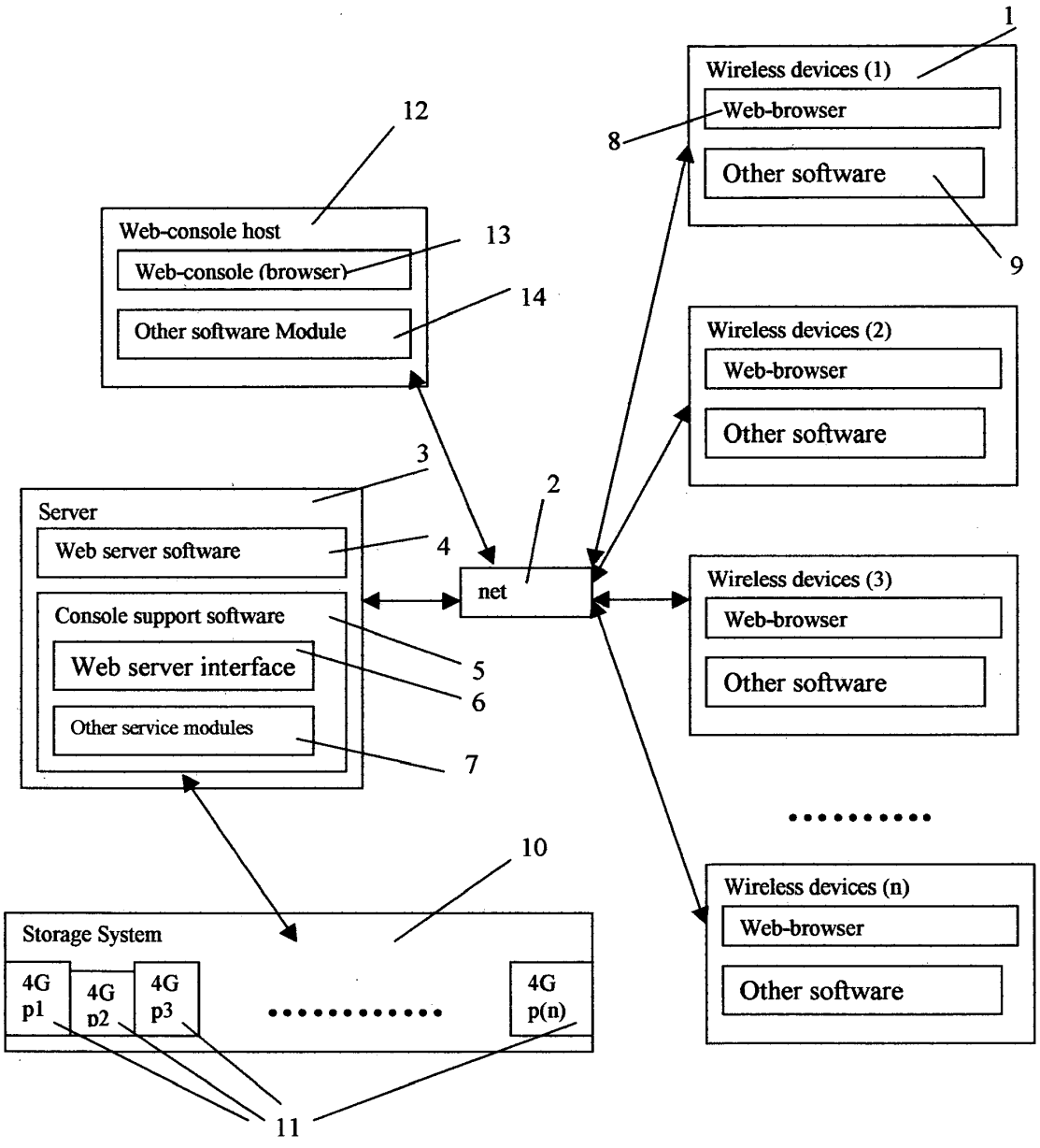

Fig. 2

Wireless out-band download

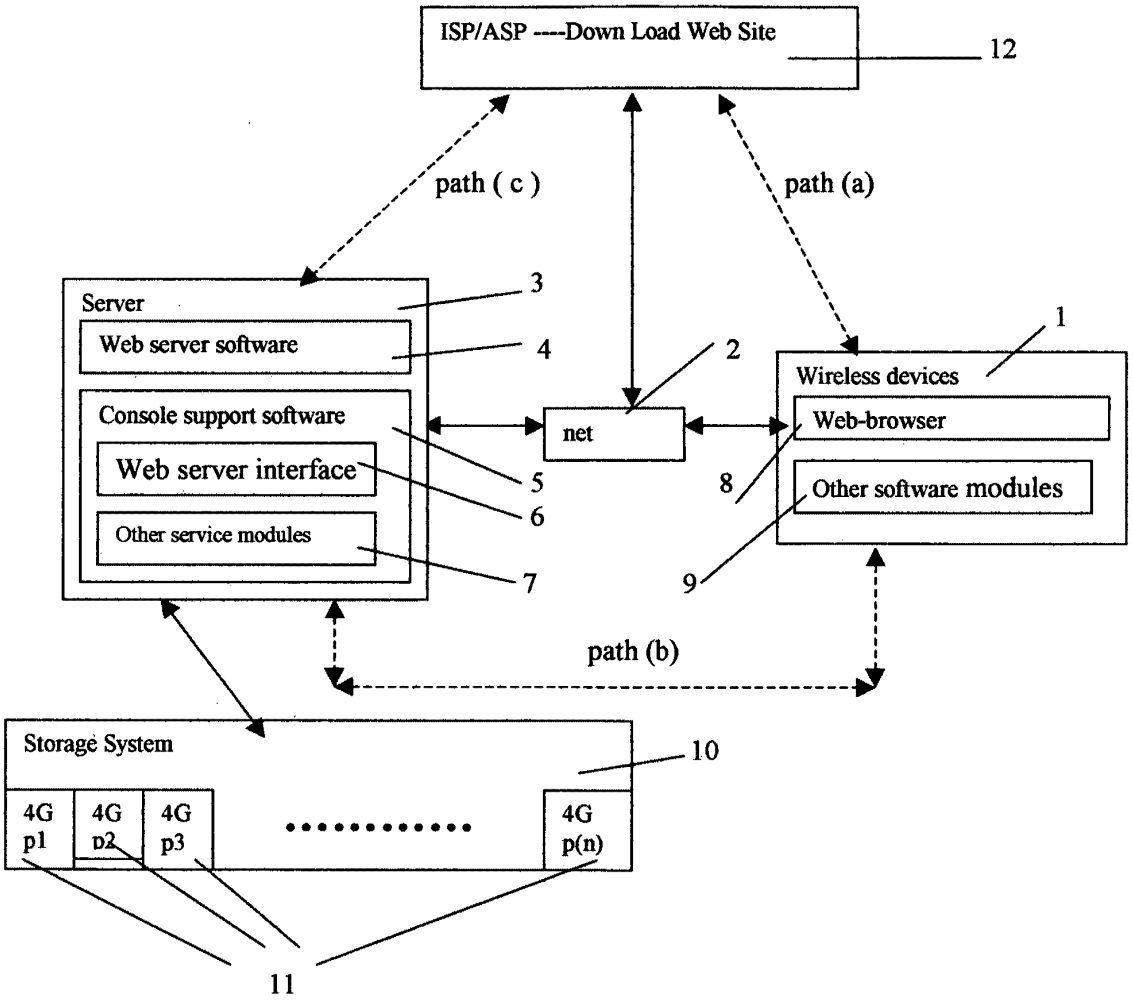

Fig. 3

The CCDSVM Support External Device for Huge Number of Wireless Device

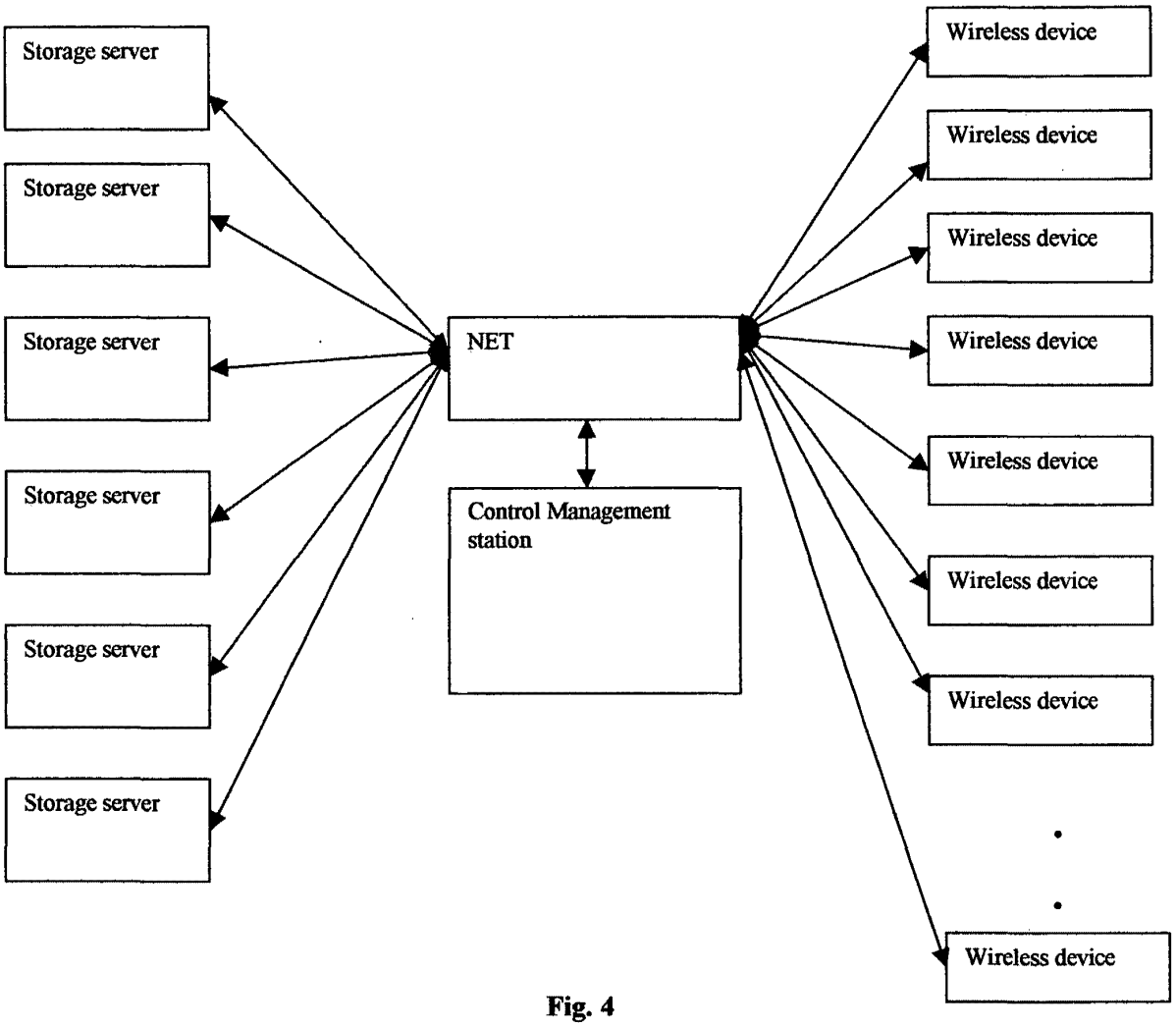

Fig. 4

NOTICE OF FEE DUE

DATE 01-21-05

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APPLICATION NUMBER 10 726 897

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/726,897	12/04/2003	Sheng (Ted) Tai Tsao	

CONFIRMATION NO. 4178

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
SAN JOSE, CA 95132

FORMALITIES LETTER

OC000000012036294

Date Mailed: 12/13/2004

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is insufficient.
  Applicant must submit $ **10** *to complete the basic filing fee for a small entity.*
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125, is required. The specification, claims, or abstract page(s) submitted is not acceptable and cannot be scanned or properly stored because:
  - The line spacing on the specification, claims, or abstract is not 1½ or double spaced (see 37 CFR 1.52(b)).

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **$75** for a Small Entity

- **$10** Statutory basic filing fee.
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/726,897	12/04/2003	Sheng (Ted) Tai Tsao	

CONFIRMATION NO. 4178

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
SAN JOSE, CA 95132

ABANDONMENT/TERMINATION LETTER

OC000000014679229

Date Mailed: 12/07/2004

NOTICE OF ABANDONMENT UNDER 37 CFR 1.53 (f) OR (g)

The above-identified application is abandoned for failure to timely or properly reply to the Notice to File Missing Parts (Notice) mailed on 03/05/2004.

- No reply was received.

A petition to the Commissioner under 37 CFR 1.137 may be filed requesting that the application be revived.

Under 37 CFR 1.137(a), a petition requesting the application be revived on the grounds of **UNAVOIDABLE DELAY** must be filed promptly after the applicant becomes aware of the abandonment and such petition must be accompanied by: (1) an adequate showing of the cause of unavoidable delay; (2) the required reply to the above-identified Notice; (3) the petition fee set forth in 37 CFR 1.17(l); and (4) a terminal disclaimer if required by 37 CFR 1.137(d).

Under 37 CFR 1.137(b), a petition requesting the application be revived on the grounds of **UNINTENTIONAL DELAY** must be filed promptly after applicant becomes aware of the abandonment and such petition must be accompanied by: (1) a statement that the entire delay was unintentional; (2) the required reply to the above-identified Notice; (3) the petition fee set forth in 37 CFR 1.17(m); and (4) a terminal disclaimer if required by 37 CFR 1.137(d).

Any questions concerning petitions to revive should be directed to the "Office of Petitions" at (703) 305-9282.Petitions should be mailed to: Mail Stop Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/726,897	12/04/2003	Sheng (Ted) Tai Tsao	

CONFIRMATION NO. 4178

SHENG (TED) TAI TSAO
2979 HEIDI DRIVE
SAN JOSE, CA 95132

FORMALITIES LETTER

OC000000012036294

Date Mailed: 03/05/2004

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is insufficient.
  Applicant must submit $ **10** *to complete the basic filing fee for a small entity.*
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification in compliance with 37 CFR 1.52, 1.121(b)(3), and 1.125, is required. The specification, claims, or abstract page(s) submitted is not acceptable and cannot be scanned or properly stored because:
  - The line spacing on the specification, claims, or abstract is not 1½ or double spaced (see 37 CFR 1.52(b)).

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **$75** for a Small Entity

- **$10** Statutory basic filing fee.
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PART 3 - OFFICE COPY

Dear Sir/Madam,

I am, Sheng (Ted) Tai Tsao, applying for non-provisional patent of "**The Use of Wireless Devices' External Storage**" on behaving of myself. Attached please find

1: A check of $375 for patent filing fee.
2: The form of TPO/SB01 – The "Declaration for Utility or Design Patent Application"
3: The 9 pages of the specification for "The Use of Wireless Devices' External Storage" (1-9), 1 page of Abstraction (10), and 4 pages of drawing for the specification (11-14).

Sincere,

Sheng (Ted) Tai Tsao

12/01/2003

The Use of Wireless Devices' External Storage

By: Sheng (Ted) Tai Tsao
11/19/2003

Field of the Invention

This invention is the continuation of the previous invention, application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System", where the claim 20 item a), b), d), claim 30 item b), and together with claim 36 represent an invention of using storage of a server system as the external storage for wireless devices. This invention focuses on how can a wireless device user actually use external storage. Specially it focus on how can a wireless device to download data to its external storage, which its principle has preliminary described in claim 19) of previous invention, application number 60/402,626 of "IP Based Distributed Virtual SAN", to transmit data in wireless environment.

Background Information

a) Terminology:

The Internal Storage of a System:
The storage media such as hard disk drives, memory sticks, memory etc is connected to a system directly through bus or a few inches of cable. Therefore, the storage media actually is a component of a system in a same enclosure.

The External Storage of a System:
The storage media is not a component of a system in a same enclosure. Therefore, they has to be connected through longer cable such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless media etc. The storage media of external storage could be magnetic hard disk drives, solid sate disk, optical storage drives, memory card, etc. and could be in any form such as Raid, which usually consists a group of hard disk drives.

The Storage Partition, its Volumes, and the Corresponding File System:
To effectively use the storage system, the storage usually needs to be partitioned into small volumes. After partition, each volumes can be used to establish file systems on it. To simplify the discussion, the term of the storage volume, its corresponding file system, and the term of the partition of a storage are used without differentiation in this invention.

CCDSVM:
It is an abbreviation for central controlled distributed scalable virtual machine system. The CCDSVM allows a control management station to control group of systems and provide distributed services to client system in Internet, Intranet, and LAN environment.

ISP & ASP:
Internet service provider and application service provider.

b) Figures:

Fig. 1: This is the same figure as Fig. 1 of "Concurrent Web Based Multi-task Support for Control Management System" with exception of renaming console host as wireless device.

Fig. 2: This is the same figure as Fig. 1 except that it shows the more details of storage system controlled by the server. In addition, multiple wireless devices are presented.

Fig. 3: This figure shows the scheme of wireless device download contents from ISP/ASP or other web sites to the external storage of this wireless device.

Fig. 4: This is the same figure as Fig. 1 of "IP Based Distributed Virtual SAN" with exception that each IP storage server provide file system as external storage for wireless devices instead of provide IP based virtual SAN service. Also, each host actually is a wireless device.

c) Assumptions:
Unless specified, the programming language, the protocols used by each software modules, and the system used described in this invention are assumed to be the same as described in previous patents submission.

In the drawing, like elements are designated by like reference numbers. Further, when a list of identical elements is present, only one element will be given the reference number.

Brief Description of the Invention

Today the wireless users commonly face the problem of lack of storage capacity on their wireless devices such as cell phone or PDA, which usually limited to 256MB for PDA and much less for cell phone. To effectively solve this problem and let users own multiple GB of storage for their wireless devices as well as allow users to use GB storage for their multimedia application, the storage on a server can be used as external storage for wireless devices. This technology has been claimed in previous two patents submission by the same author. Now we can examine how does the external storage actually be used by the wireless device. We can let each server unit (3 of Fig. 2) partitions its storage system in such way that each volumes will have multi-GB in size. Therefore, each user from web-browser of any of wireless devices can exclusively be assigned and exclusively access a specific storage volume on a server unit. For example, if we need to provide each user 4GB of storage space, then a 160GB disk drive can

support 40 users. A 4096GB storage system on a server unit can support 1024 user. Further, any data on the wireless device can be transmitted to assigned storage volumes on a server unit. In addition, the user on the wireless device also can download the multimedia data from any ISP or ASP to the assigned storage volumes of a designated server unit through out-band approach (Fig. 3). Finally, the user can use their web-browser, which has functionality of invoking embedded video or music, to enjoy their stored multimedia contents.

These and other futures, aspects and advantages of the present invention will become understood with reference to the following description, appended claims, and accompanying figures where:

Description of the Drawings

Fig. 1: This figure demonstrates the network connection between a wireless device and a server, where

a) Net (2) represent a communication link, which may combined with wireless and non-wireless connection media and guarantee the communication packet can be sent/received between wireless device and the server. It is also assume that the net (2) infrastructure is built up in such way that the user from web-browser of a wireless device can access and browse any web-site on the Internet, Intranet.
b) As described in previous patents submission, the console support software (5) on server (3) can support web-based multi-task for users on web-browser (8) of wireless device (1). Further, the user on the web-browser (8) is able to perform creating structured layered files/directory or folders, and perform data management operations such as delete, move, copy, rename for data files or folders/directories etc on the assigned storage volume of server (3).
c) As described in previous patents submission, the other software modules (9) of wireless device (1) is also capable to send data to or receive data from other service modules (7) of server (3) via communication link (2) through suitable IP or non-IP based protocol. The data file being sent cold be a digital photo picture, a message etc..
d) As described in previous patents submission, the console supporting software (5) of server (3) and the other software modules (9) of wireless device (1) can be implemented with any suitable languages such as C, C++, Java, etc.
e) As described in previous patents submission, the web-browser (8) of wireless device (1) can be any suitable software, which is capable to communication with web server software (4) on server (3) or with any other web server through HTTP protocol.

Fig. 2: This figure demonstrated how does the storage of a server can be assigned to multiple wireless devices as their external storage.

a) As described in previous patents submitting, the storage system (10) of server (3) can be partitioned into multiple volumes (11) by administration staff through web-console (13) of web console host (12).

b) The storage system (10) of server (3) can be partitioned in such way that each wireless devices can be assigned with a volume of desired size, which can be best supported by the server for maximum number of wireless devices.
c) As described in previous patents submitting, the storage connection media could be any kinds such as SCSI cable, IP cable, Fiber cable etc. The storage system itself could be various types.
d) It assumes that the storage system can be accessed through IP or non-IP based network and protocols.

Fig. 3: This figure demonstrated how a user from a web-browser (8) on wireless devices(1) can download data from a known web-site (12) to his/her assigned external storage (10) of server (3). The dash-lined path (a) represents a communication channel between wireless device (1) and any remote download web-site (12), which provides the contents for web download. The dash-lined path (b) represent a communication channel between wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication channel between wireless devices (1) and the remote web-server (12), which provide download contents.

The Detailed Description of the Invention

1: The Use of the External Storage of the Wireless Device:

The Fig. 2 shows a simplified diagram of the wireless devices (1 of Fig. 2) using external storage system (10 of Fig. 2) of a server (3 of Fig. 2), which will effectively resolve the storage limitation problem of wireless devices (1 of Fig. 2).

- Partition storage volumes (Fig. 2)

With this invention, the entire storage (10 of Fig. 2) on a server (3 of Fig. 2) need to be partitioned into suitable size of volumes (11 of Fig. 2) such as 4GB each, which will allow the server to serve maximum number of wireless devices (1 of Fig. 2). With the web console support software (5 of Fig. 2) of the server (3 of Fig. 2), The task of partitioning storage can be done through web-console (13 of Fig. 2) on console host (12 of Fig. 2) by administrative staff.

In order to support such storage partition, first the console support software (5 of Fig. 2) of the server (3 of Fig. 2) must send storage information of the server (3 of Fig. 2) to the web-console (13 of Fig. 2) of console host (12 of Fig. 2). This including the storage device name, storage total size etc. Second, the administration staff on console host (12 of Fig. 2) can use web-console (13 of Fig. 2) to fill and to send the storage partition information to the console support software (5 of Fig. 2) of the server (3 of Fig. 2). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving storage partition information from web-console (13 of Fig. 2) of console host (12 of Fig. 2), the console support software (5 of Fig. 2) of the server (3 of Fig. 2) performs the actual storage partition, which divides entire storage into multiple small volumes.

Finally, for each small storage volume, a corresponding file system could be built up.

- **Assign storage volumes (Fig. 2):**
Each storage volumes with its corresponding file system (11 of Fig. 2) of the storage (10 of Fig. 2) on server (3 of Fig. 2) needs to be exclusively assigned and exported to a given specific wireless device (1 of Fig. 2) by the console support software (5 of Fig. 2) on server (3 of Fig. 2).

- **Data and storage volume management (Fig. 2)**

1) With the support of console support software modules (5 of Fig 2) of the server system (3 of Fig. 2), the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can setup the folder/directory structure on the file system of his/her assigned external storage volume (11 of Fig. 2). In addition, the user on web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can perform all data management operations such as delete, copy, move, rename etc. on that file system.

   In order to support such data management on external storage (10 of Fig. 2) from web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2), first the console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2) must communicate with web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2). Therefore, the user from web-browser (8 of Fig. 2) of wireless device (1 of Fig. 2) can choose desired data management operations and send operation information to console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2). These operations include establishing folder/directory, copying, moving, or reaming data file etc. Second, upon receiving the data management operation, the console support software modules (5 of Fig.2) of the server system (3 of Fig. 2) actually performs these operations on the assigned file system of assigned external storage volume (11 of Fig. 2) on the server system (3 of Fig. 2).

- **Store data from wireless device into external storage (Fig. 2)**
To store the data such as digital photo pictures, or messages into the assigned file system on external storage (10 of Fig. 2) of a server (3 of Fig. 2), the other software modules (9 of Fig. 2) of wireless device (1 of Fig. 2) need to send these data to other service modules (7 of Fig. 2) of server (3 of Fig. 2) via communication link between them. Upon receiving data, the other service modules (7 of Fig. 2) of server (3 of Fig. 2) write these data to assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2). The protocol used between these two communication entities could be either IP or non-IP based protocol.

- **Download data from remote web server site into external storage (Fig. 3)**
If the wireless device (1 of Fig. 3) user want to download data from remote web server (12 of Fig. 3) into assigned file system (11 of Fig. 3) of the external storage (10 of Fig. 3) on server (3 of Fig. 3), the following steps are required:

1) The user from web-browser (8 of Fig. 3) of a specific wireless device (1 of Fig. 3) accesses a remote download web server site (12 of Fig. 3) and obtain the information for download via path (a) of Fig. 3. For example, to get a web-page, which contains the data name for download.
2) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) obtains download information, which becomes available in the cached web-pages on wireless device (1 of Fig. 3) after the web-browser (8 of Fig. 3) accessing the download site (12 of Fig. 3).
3) The other software modules (9 of Fig. 3) of a specific wireless device (1 of Fig. 3) send the obtained download information to other service modules (7 of Fig. 3) of storage server (3 of Fig. 3) via path (b) of Fig. 3.
4) Upon receiving the download information from a specific wireless device (1), the other service module (7 of Fig. 3) of the storage server (3 of Fig. 3) send a web download request to download web-site (12 of Fig. 3) via path (c) of Fig. 3 based on download information obtained. It then receives the download information data from web server of download web-site (12 of Fig. 3).
5) Upon receiving downloaded data, the other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write these data for the specific wireless device (1 of Fig. 3) into the assigned file system (11 of Fig. 3) on the server (3 of Fig. 3).

- **Retrieve data from external storage of wireless device**

1) If a web-browser has embedded video or music functionality, the web-browser (8 of Fig.) of a wireless device (1 of Fig. 2) can be used to retrieve and play those multimedia data file such as video or music stored in wireless device's external storage volume (10 of Fig.2), which actually located on a server (3 of Fig. 2).
2) If there is needs, the other software module (9 of Fig. 2) of wireless device (1 of Fig. 2) also can retrieve data file from assigned file system of the assigned storage volume (11 of Fig. 2) on server (3 of Fig. 2).

- **Support external storage for large number of wireless devices**

If we need to provide each user 2GB of storage space, then a 160GB disk drive can support 80 users. A 4096GB (4 Tera Bytes) storage system on a server unit can support 2024 user. Each server only can efficiently support a limited size of the storage system. In order to support a large number of wireless devices with external storage such as 500,000 of them, a larger number of servers are required, in this case 250 servers is required. In order to let a larger number of the server to effectively support larger number of the wireless devices, an infrastructure like CCDSVM is desirable, which has been described in previous patents submission. With CCDSVM the control management station can control larger number of storage servers to provide external storage for huge number of the wireless devices.

2: What are Claimed:

Support a small number of wireless devices by a storage server

1: The method of using storage of a server system as external storage of the wireless devices including following steps:

a) Partition the storage of a server system into multiple volumes, let each of them with suitable size, and establish a corresponding file system on top of it.
b) Export each storage volumes (file system) of a server system to a specific wireless device.
c) The user of wireless device could manage assigned external storage volume (file system) on a server and its data stored there.
d) The user could store the data of wireless device into the assigned external storage volume (file system) on server system.
e) The user of wireless device could download data directly from remote web-site into its assigned external storage (file system) on a server without goes through the wireless device itself.
f) The user of wireless device could retrieve and play multimedia data stored on external storage volume (file system) through web-browser of the wireless device.

2: The claim 1, wherein, step a) further includes

a) With supporting of console support software of the server, the server admin staff can perform partitioning the storage of the server from web-console on console host.
b) The server admin staff may also partition the storage of the server from the native user console on the server.

3: The claim 2, wherein, step a) further includes

a) The console support software of the server must send storage information of the server to the web-console of console host. This including the storage device name, storage total size etc.
b) The administration staff on console host can use web-console to fill and to send the storage partition information to the console support software of the server. The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume).
c) Upon receiving storage partition information from web-console of console host, the console support software of the server performs the actual storage partition, which divides entire storage into multiple small volumes.
d) For each small storage volumes, a corresponding file system could be built on top of it.

4: The claim 1, wherein, step b) further includes

a) The console support software of the server must make association between each storage volumes (file system) of the server and each specific wireless devices in such way that permitting each storage volume be exclusively accessible to a web-browser of a specific wireless device.

5: The claim 1, wherein, step c) further includes
   a) With the support of console support software modules of the server system, the user from web-browser of wireless device can setup the folder/directory structure on his/her assigned external storage volume (file system), which located on the server.
   b) With the support of console support software modules of the server system, the user from web-browser of wireless device can perform all data management operations such as delete, copy, move, rename etc. on his/her assigned external storage volume (file system), which located on the server.

6: The claim 5, wherein, step a) and b) further include
   a) The console support software modules of the server system must communicate with web-browser of wireless device in such way that the user from web-browser of wireless device can choose desired data management operations and send information of desired operation to console support software modules of the server system. These operation include creating, deleting folders/directories, copying, moving, or reaming data file etc.
   b) Upon receiving the data management operation, the console support software modules of the server system actually performs these operations on a specific storage volume (file system) of the server system.

7: The claim 1, wherein, step d) further includes
   a) To store the data such as digital photo pictures, or messages from wireless device into the assigned external storage (file system) on a server, the other software modules of wireless device need to send these data to other service modules of the server via communication link between them.
   b) Upon receiving data, the other service modules of the server write these data to the assigned storage volume (file system) of the server.

8: The claim 1, wherein, step e) further includes
   If the wireless device user want to download data from remote web server into its assigned external storage on server, the following steps are required:
   a) The user from web-browser of a specific wireless device accesses a remote download web site and obtains the information for download via path between them. The information of downloading includes the data file name to be downloaded, the IP address of that download web site etc.
   b) The other software modules of a specific wireless device obtain download information, which becomes available in the cached web pages on wireless device after the web-browser accessing the download site.
   c) The other software modules of a specific wireless device send the obtained download information to other service modules of external storage server via path between them.
   d) Upon receiving the download information from a given specific wireless device, the other service modules of the external storage server send a web download request to download web-site via path between them based on download information obtained and then receives the download data from download web-

site. The HTTP protocol can be used for sending and receiving such information between other service modules of the external storage server and the web server of the remote download web-site.

e) Upon receiving downloaded data, the other service modules of the external storage server write these data into assigned storage volume (file system) for that given specific wireless device.

9: The claim 1, wherein, step f) further includes

a) The user from web-browser of wireless device can browse the files/folders stored in its assigned external storage volume (file system) on a server system.
b) If a web-browser capable to invoke the embedded video or audio functionality, the user from web-browser of wireless device can play the video or audio multimedia data, which stored on wireless' external storage volume (file system) located on a server.

Support external storage for larger number of wireless devices

10: To support huge number of wireless devices, the CCDSVM infrastructure can be deployed, with which a larger number of storage servers can be organized to provide external storage for wireless devices while each storage server can support a fix number of wireless device to its capacity limits.

Abstraction

In order to solve the wireless device's limited storage problem, the wireless device can use the storage of a server as their external storage. To effectively let the storage server providing external storage (file system) for wireless device, the storage of a server need to be partitioned into multiple small storage volumes, which also need to be exported to each specific wireless device. With the supporting of console support software module of the server, the user from web-browser of a wireless device can manage the assigned external storage volume on a server such as create delete directory/folder, move, copy, delete, rename files etc.. The data on the wireless device can be stored into this external storage. The user from the web-browser also can perform download data from a remote web-site to his/her assigned private external storage on a server. In addition, if a web-browser of wireless device support the embedded video or music, the user from the web-browser of a wireless device can access and play the multimedia data, which stored on external storage of the wireless device. Finally, to support huge number of wireless devices with external storage, the CCDSVM infrastructure can be deployed. The larger number of server units controlled by a central control station can provide huge amount of storage volumes for huge amount of wireless devices.

Wireless devices supports in a simple environment

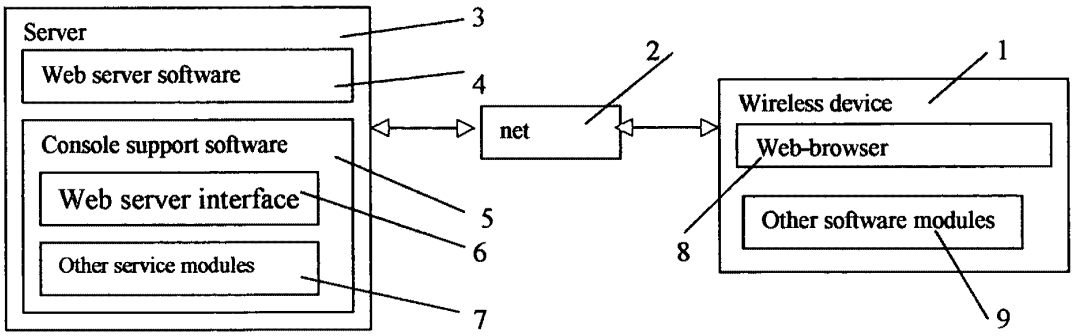

Fig. 1

Wireless devices access external storage through web browser

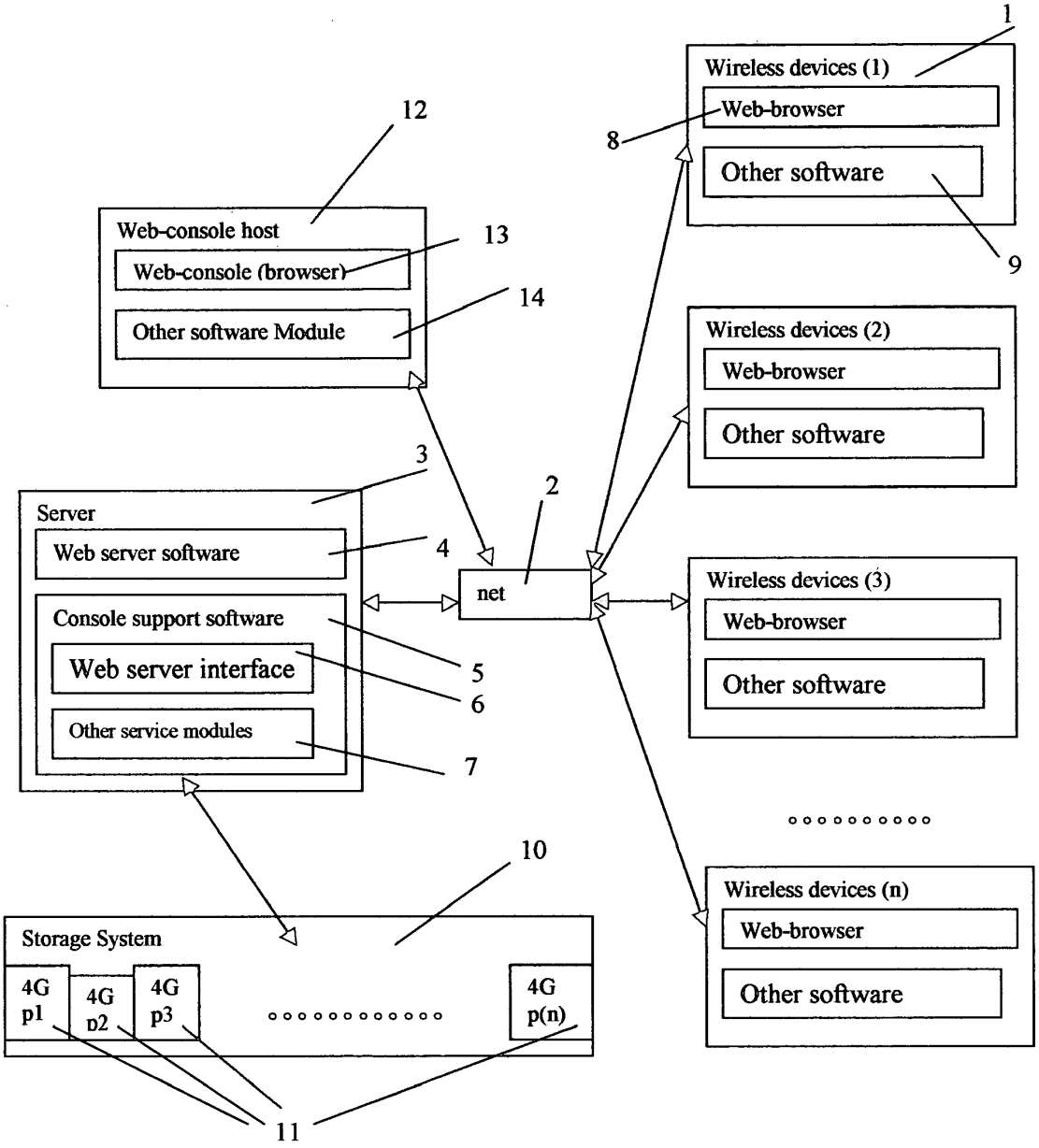

Fig. 2

Wireless out-band download

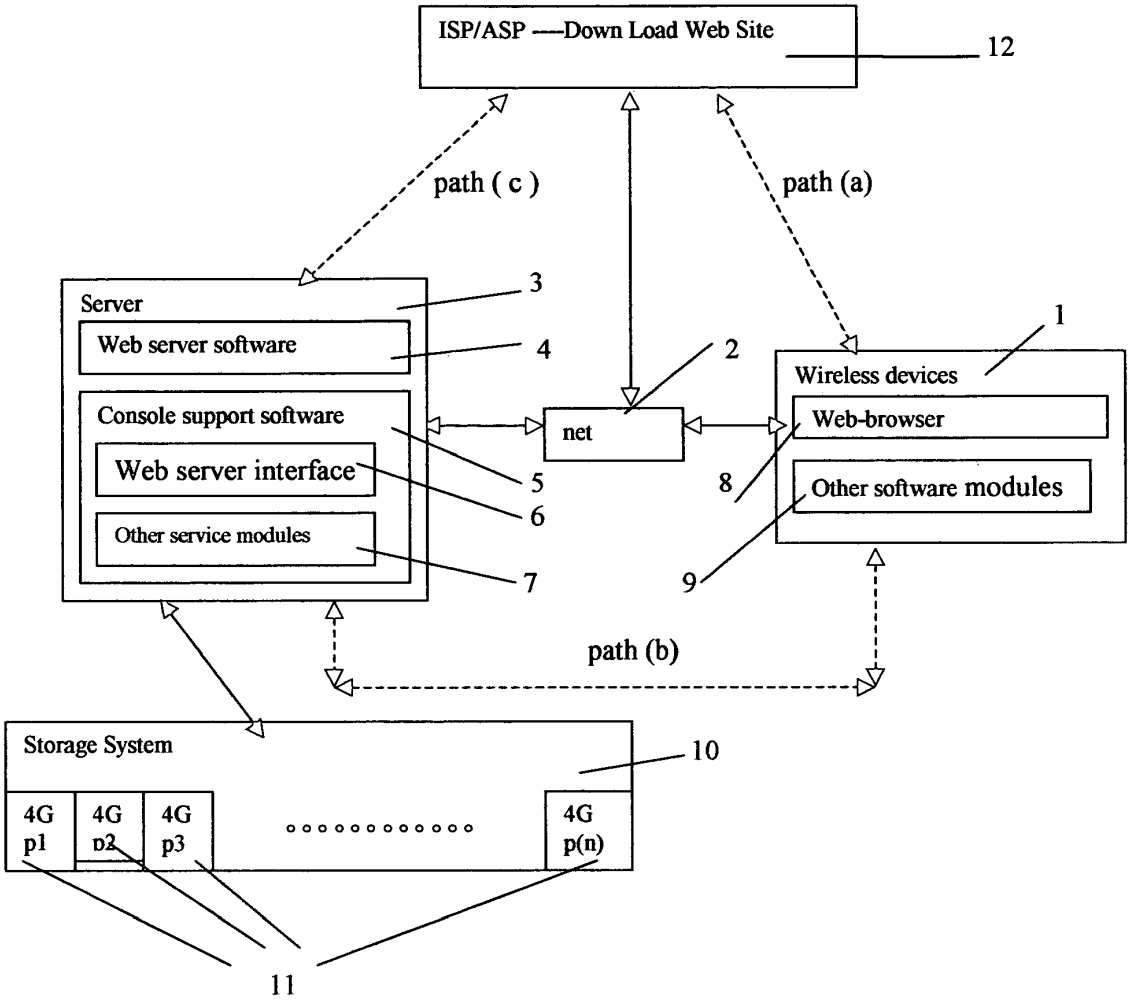

Fig. 3

The CCDSVM Support External Device for Huge Number of Wireless Device

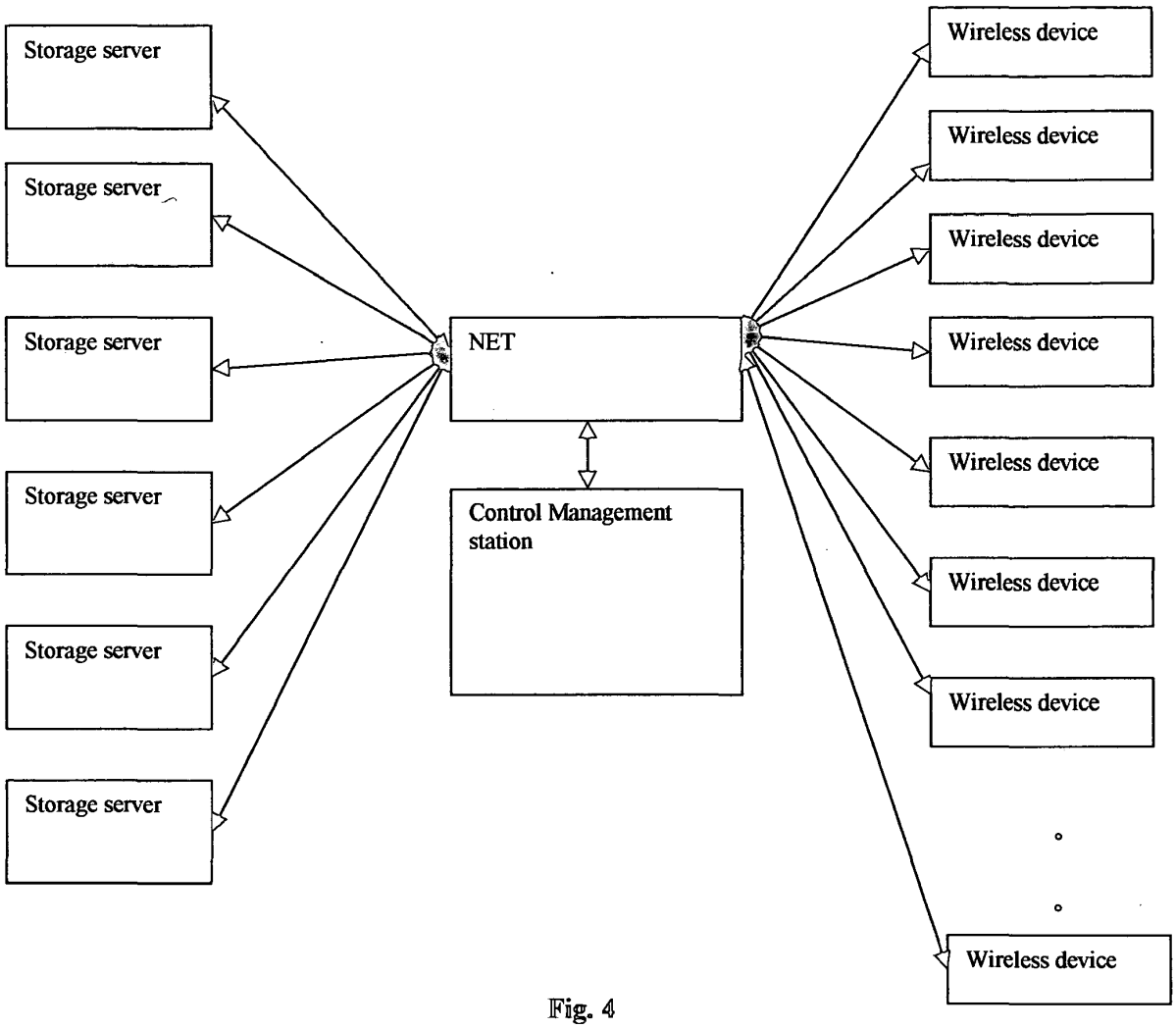

Fig. 4

DECLARATION — Utility or Design Patent Application

Direct all correspondence to: ☒ Customer Number or Bar Code Label [ ] OR ☒ Correspondence address below

Name SHENG (TED) TAI TSAO

Address 2979 HEIDI DRIVE

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Country USA | Telephone 408-251-0864 | Fax

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any]) SHENG (TED) TAI | Family Name or Surname TSAO

Inventor's Signature Sheng-Ti Tsao | Date 12/1/2003

Residence: City SAN JOSE | State CA | Country USA | Citizenship USA

Mailing Address 2979 HEIDI DRIVE

City SAN JOSE | State CA | ZIP 95132 | Country USA

NAME OF SECOND INVENTOR: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any]) | Family Name or Surname

Inventor's Signature | Date

Residence: City | State | Country | Citizenship

Mailing Address

City | State | ZIP | Country

☐ Additional inventors are being named on the ____supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

PTO/SB/01 (10-01)
Approved for use through 10/31/2002. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted with Initial Filing **OR** ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorn y Docket Number	
First Named Inventor	TSAO, SHENG (TED) TA
COMPLETE IF KNOWN	
Application Number	
Filing Date	
Art Unit	
Examiner Name	

As the below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

"The Use of Wireless Devices' External Storage"

(Title of the Invention)

the specification of which

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) ☐ as United States Application Number or PCT International

Application Number ☐ and was amended on (MM/DD/YYYY) ☐ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2003

Application or Docket Number: 10726897

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	10	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	10 minus 20=	* 0
INDEPENDENT CLAIMS	2 minus 3 =	* 0
MULTIPLE DEPENDENT CLAIM PRESENT		☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	385.00	OR	BASIC FEE	770.00
XS 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL	385	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X43=		OR	X86=	
+145=		OR	+290=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
***If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

12/05/2003 WABRHAM1 00000075 10726897
01 FC:2001 375.00 OP

PTO-1556
(5/87)

*U.S. Government Printing Office: 2002 — 489-267/69033