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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.

First Inventor

Title

Express Mail Label No.

Sheng Tai (Ted) Tsao

Method and System for Support Concu

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. **Fee Transmittal Form** (e.g., PTO/SB/17)
2. **Applicant claims small entity status.**
See 37 CFR 1.27.
3. **Specification** [Total Pages 17]
Both the claims and abstract must start on a new page
(For information on the preferred arrangement, see MPEP 608.01(a))
4. **Drawing(s)** (35 U.S.C. 113) [Total Sheets 4]
5. **Oath or Declaration** [Total Sheets 2]
a. Newly executed (original or copy)
b. A copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
i. **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s)
name in the prior application, see 37 CFR
1.63(d)(2) and 1.33(b).
6. **Application Data Sheet.** See 37 CFR 1.76
7. **CD-ROM or CD-R** in duplicate, large table or
Computer Program (Appendix)
 Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
(if applicable, items a. – c. are required)
a. Computer Readable Form (CRF)
b. Specification Sequence Listing on:
i. CD-ROM or CD-R (2 copies); or
ii. Paper
c. Statements verifying identity of above copies

ADDRESS TO:

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P.O. Box 1450
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ACCOMPANYING APPLICATION PARTS

9. **Assignment Papers** (cover sheet & document(s))
Name of Assignee _____
10. **37 CFR 3.73(b) Statement** **Power of Attorney**
(when there is an assignee)
11. **English Translation Document** (if applicable)
12. **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
 Copies of citations attached
13. **Preliminary Amendment**
14. **Return Receipt Postcard** (MPEP 503)
(Should be specifically itemized)
15. **Certified Copy of Priority Document(s)**
(if foreign priority is claimed)
16. **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i).
Applicant must attach form PTO/SB/35 or equivalent.
17. Other: _____

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

 Continuation Divisional Continuation-in-part (CIP) of prior application No.: 12/726,897.....
Prior application information: Examiner Sall, El Hadji Malick Art Unit: 2457

19. CORRESPONDENCE ADDRESS

 The address associated with Customer Number: 77501 OR Correspondence address below

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Signature	/shengtai tsao/	Date	09/25/2013
Name (Print/Type)	Sheng Tai (Ted) Tsao	Registration No. (Attorney/Agent)	

This collection of information is required by 37 CFR 1.53(b). 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: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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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.

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)****Title of
Invention**

Method and System For Expand Storage Space For Wireless Devices

As the below named inventor, I hereby declare that:

This declaration is directed to: The attached application, or
 United States application or PCT international application number _____
filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

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.

LEGAL NAME OF INVENTORInventor: Sheng Tai (Ted) Tsao Date (Optional): 09/25/2013Signature: /shengtai tsao/

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 1 minute 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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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.

Sheng Tai (Ted) Tsao

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.
TYPE: Small Entity & Continuation Application for 10/726,897
FILING DATE: 09/25/2013
TITLE: The Method and System For Expand Storage Space For
Wireless Devices
EXAMINER: Sall, El Hadji Malick
ART UNIT: 2457

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

Continuation Application for the application 10/726,897

Dear Madam:

This is filing continuation application for the application 10/726,897. Enclosed please find:

- 1) A copy of Oath declaration.
- 2) A copy of the originally specification and drawings filed on 12/04/2003.
- 3) The referenced prior applications and application data sheet starts on the page 2.
- 4) A substitute Abstract starts on the page 3.
- 4) The claims start on the page 4.

Thanks helps from the USPTO to enter the continuation application.

Respectively Submitted.

09/25/2013

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

1) Amendment to the Priority:

Please replace the first paragraph with following:

“ Field of The Invention Reference To The Prior Arts
This invention is a ~~the~~ continuation application of 10/726,897 which is filed on 12/04/2003 which has referenced the ~~provisional previous invention,~~ application No. number 60/401, 238 filed on 08/06/2002 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,~~ and referenced provisional application No. number 60/402,626 filed in 08/12/2002. All mentioned applications are herein incorporated by reference in their entirety for all purpose of “~~IP Based Distributed Virtual SAN~~”, to transmit data in wireless environment.”

2) Application Data Sheet:

Application	Continuation Type	Parent Application	Parent Filing Date
This application	Continuation of	10/726,897	12/04/2003

Sheng Tai (Ted) Tsao

AMENDMENT TO THE ABSTRACT:

Please withdraw the original abstract in the application filed on 12/04/2003 and replace it with the following abstract:

“

Abstraction

To meet the needs for storing larger volume personal information for user of wireless device, it is desire to provide extra storage space to the wireless device such as for cell phone etc due to the limited storage space that the wireless device has. Instant application disclosed a system and method for the wireless device to efficiently and effectively use remotely located storage space provided by a server.

“

AMENDMENT IN THE CLAIMS:

1 – 10 (*Canceled*)

11. (*New*) 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 folder structure in the storage space allocated for the wireless device;

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

updating the folder structure whenever a user of the wireless device via a web browser executed thereof performs an operation to the folder structure created in the storage space.

12. (*New*) The method as recited in claim 11, wherein the operation to the folder structure comprises creating from the wireless device the folder in the folder structure.

13. (*New*) The method as recited in claim 12, wherein the operation to the folder structure comprises access from the wireless device to the folder in the folder structure residing in the storage space for storing data therein or retrieving data therefrom, wherein the data is a file or a message.

14. (*New*) The method as recited in claim 13, wherein the operation to the folder structure comprises deleting, moving, copying or renaming a file or a folder being stored in the folder of the folder structure residing in the storage space.

15. (*New*) The method as recited in claim 13, further comprising facilitating to store a file being downloaded from a web server directly into the storage space instead of downloading the file into the wireless device itself.

16. (*New*) The method as recited in claim 15, 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.

17. (*New*) The method as recited in claim 11, wherein the folder structure is created with multiple folders on a file system configured on the storage space allocated to the each of the wireless devices.

18. (*New*) A system for facilitating expanding storage capacity for 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 folder structure 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 folder structure in the storage space; and
- update the folder structure whenever a user of the each of the wireless devices via a web browser executed thereof to performs an operation to the folder structure in 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 operable access to the folder structure in the storage space allocated to the each of the wireless devices.

19. (*New*) The system as recited in claim 18, wherein the operation to the folder structure comprises creating from the each of the wireless devices the folder in the folder structure of the storage space.

20. *(New)* The system as recited in claim 19, wherein the operation to the folder structure comprises access from the wireless device to the folder in the folder structure residing in the storage space for storing data therein or retrieving data therefrom, wherein the data is a file or message.

21. *(New)* The system as recited in claim 20, wherein the operation to the folder structure comprise deleting or moving or copying or renaming from the each of the wireless devices a file or a folder being stored in the folder structure of the storage space.

22. *(New)* The system as recited in claim 18, wherein the wireless device has a function of making or receiving a phone call.

23. *(New)* The system as recited in claim 18, wherein the folder structure is created with multiple folders on a file system configured in the storage space allocated to the each of the wireless devices.

24. *(New)* The system as recited in claim 20, wherein each of the wireless devices further is operable to store a file being downloaded from a remote web server directly into the storage space instead of downloading the file into the each of the wireless devices itself.

25. *(New)* A non-transitory computer-readable storage medium comprising:
program code that, when executed by a server, configures the server to:
allocate a storage space of a predefined capacity for each of the wireless devices, create a folder structure 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 folder structure of the storage space; and
update the folder structure whenever a user of the each of the wireless devices via a web browser executed thereof performs an operation to the folder

structure of the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices.

26. *(New)* The program product of claim 26, wherein the operation to the folder structure comprises creating, from the each of the wireless devices, a folder for the folder structure in the storage space allocated to the each of the wireless devices.

27. *(New)* The program product of claim 27, wherein the operation to the folder structure comprises access, from the each of the wireless devices, to the folder in the folder structure for storing data therein or retrieving data therefrom, wherein the data is a file or message.

28. *(New)* The program product of claim 27, wherein the operation to the folder structure comprises deleting or moving or copying or renaming from the each of the wireless devices a file or a folder being stored in the folder structure.

29. *(New)* The program product of claim 27, wherein each of the wireless devices further is operable to store 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.

30. *(New)* The program product of claim 29, wherein the folder structure is created with multiple folders on a file system configured on the storage space allocated to the each of the wireless devices.

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

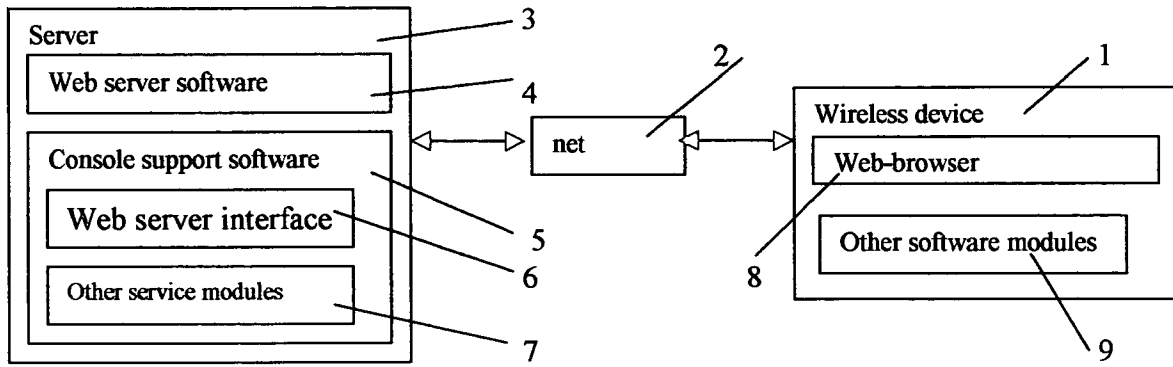


Fig. 1

Wireless devices access external storage through web browser

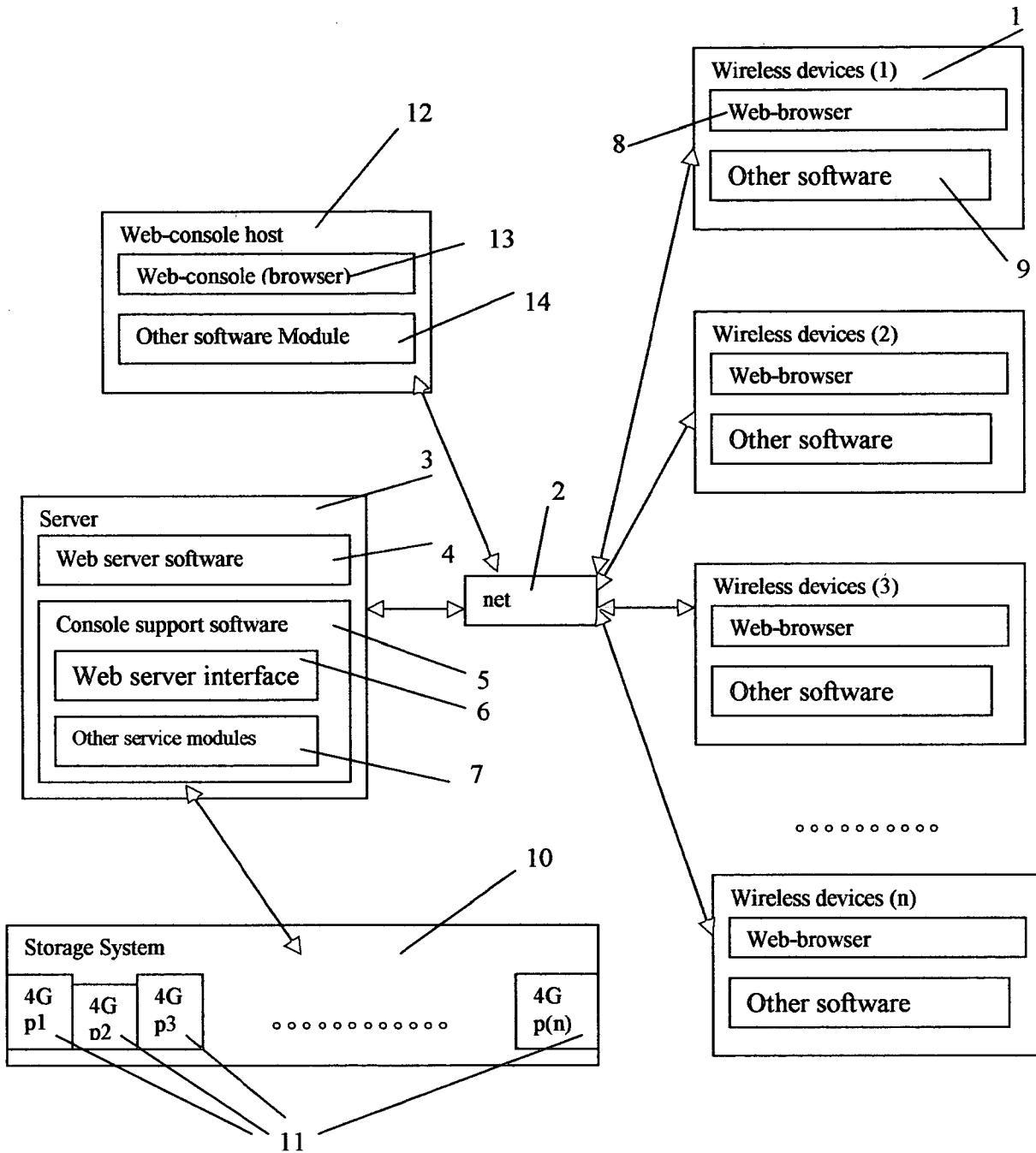


Fig. 2

Wireless out-band download

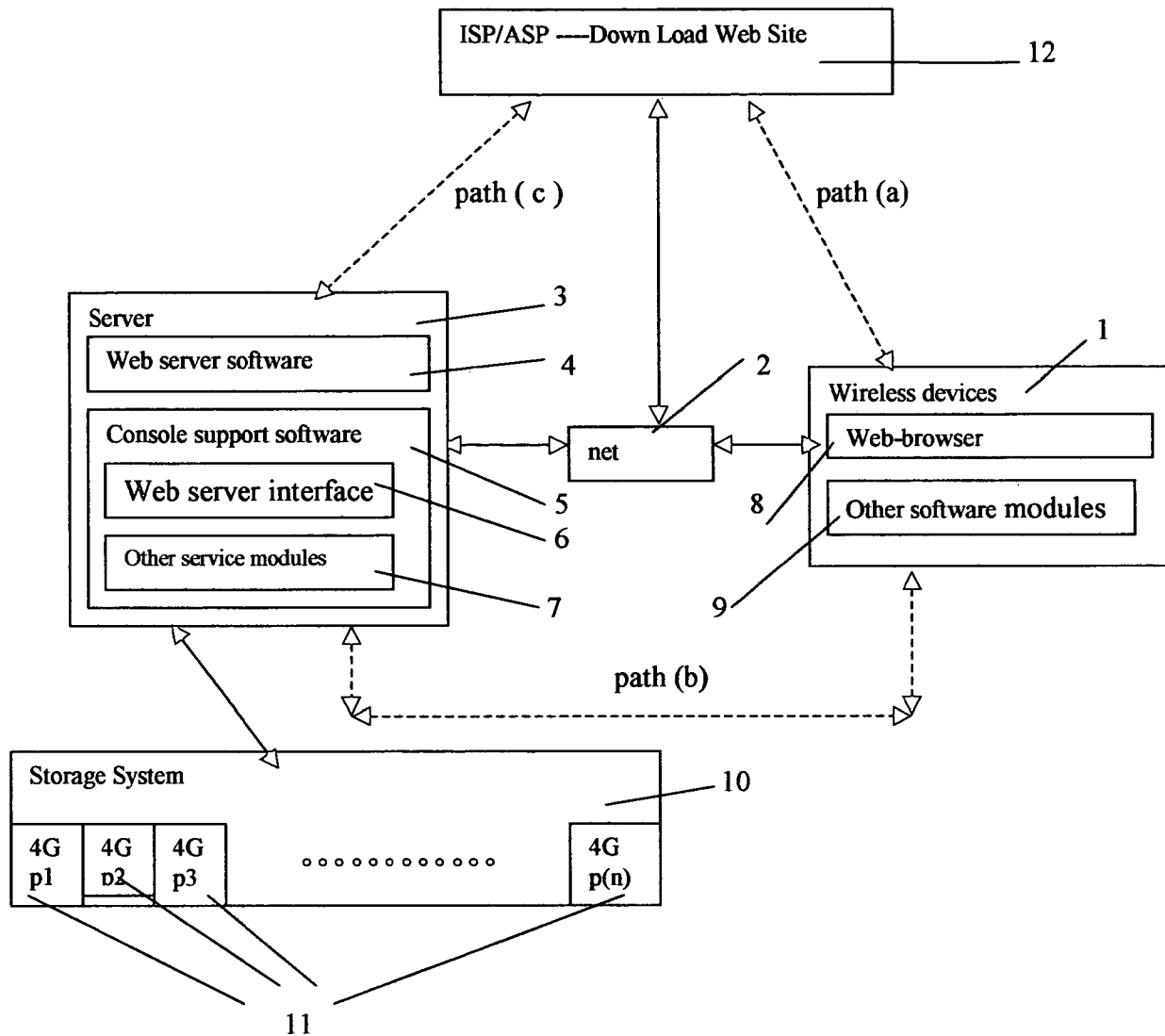


Fig. 3

The CCDSVM Support External Device for Huge Number of Wireless Device

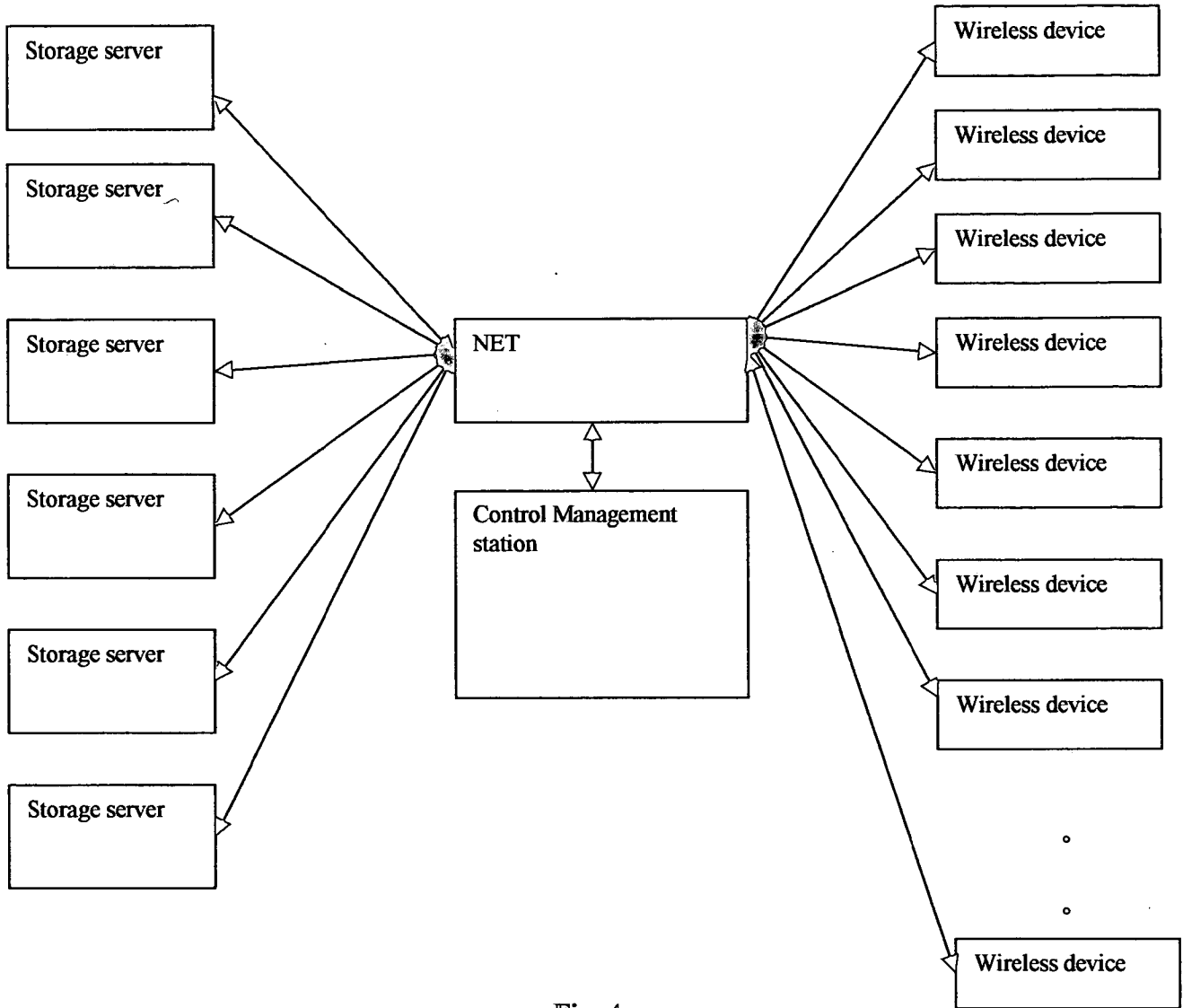


Fig. 4

Electronic Patent Application Fee Transmittal

Application Number:				
Filing Date:				
Title of Invention:	Method and System For Expand Storage Space For Wireless Devices			
First Named Inventor/Applicant Name:	Sheng Tai (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:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				730

Electronic Acknowledgement Receipt

EFS ID:	16955057
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Method and System For Expand Storage Space For Wireless Devices
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	25-SEP-2013
Filing Date:	
Time Stamp:	16:04:56
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$730
RAM confirmation Number	3454
Deposit Account	
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ -Message Digest	Multi	Pages (if appl.)
		Adobe	Exhibit 1402, page 28		

1	Transmittal of New Application	CON897-transmittle.pdf	276618	no	2
			9c1ba95025745c9eb355222b18ea973bdb1550518		
Warnings:					
Information:					
2	Oath or Declaration filed	CON897-decl.pdf	173218	no	2
			3647ad96dbfc07b07c23b09f5a8593a3339d80ee		
Warnings:					
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3	Claims	CON897claims-folder.pdf	103893	no	7
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Warnings:					
Information:					
4	Specification	CON897-spec-drawings.pdf	639210	no	14
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5	Fee Worksheet (SB06)	fee-info.pdf	31953	no	2
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Table with 6 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY.DOCKET.NO, TOT CLAIMS, IND CLAIMS. Row 1: 14/036,744, 09/25/2013, 3715, 730, , 20, 3

CONFIRMATION NO. 5504

FILING RECEIPT



77501
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

Date Mailed: 10/17/2013

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

Inventor(s) Sheng Tai (Ted) Tsao, Residence Not Provided;

Applicant(s) Sheng Tai (Ted) Tsao, Residence Not Provided;

Power of Attorney: None

Domestic Applications for which benefit is claimed - None.

A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 10/10/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 14/036,744

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

** SMALL ENTITY **

Title

Use of wireless devices external storage

Preliminary Class

434

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Table with 4 columns: APPLICATION NUMBER (14/036,744), FILING OR 371(C) DATE (09/25/2013), FIRST NAMED APPLICANT (Sheng Tai (Ted) Tsao), ATTY. DOCKET NO./TITLE

77501
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

CONFIRMATION NO. 5504
FORMALITIES LETTER



Date Mailed: 10/17/2013

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 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).

- A mailing address for each inventor has not been submitted. A new application data sheet (ADS) in compliance with 37 CFR 1.76 or inventor's oath or declaration in compliance with 37 CFR 1.63 identifying the mailing address and residence (if the inventor lives at a location which is different from where the inventor customarily receives mail) is required.

Sheng Tai (Ted) Tsao

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 substitute specification must be submitted with markings and be accompanied by a clean version (without markings) as set forth in 37 CFR 1.125(c) and a statement that the substitute specification contains no new matter (see 37 CFR 1.125(b)). The specification, claims, and/or abstract page(s) submitted is not acceptable and cannot be scanned or properly stored because:
- The line spacing on the specification, claims, and/or abstract is not 1 1/2 or double spaced (see 37 CFR 1.52(b)).

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
14/036,744

APPLICATION AS FILED - PART I

(Column 1) (Column 2)

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(j))	20 minus 20 =	*
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*
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.

SMALL ENTITY

RATE(\$)	FEE(\$)
N/A	70
N/A	300
N/A	360
x 40 =	0.00
x 210 =	0.00
	0.00
	0.00
TOTAL	730

OR OTHER THAN SMALL ENTITY

RATE(\$)	FEE(\$)
N/A	
N/A	
N/A	
TOTAL	

APPLICATION AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(j))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

OR OTHER THAN SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(j))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

OR OTHER THAN SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
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 found in the appropriate box in column 1.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.
SERIAL NO.: 14/036,744 Confirmation No. 5504
FILING DATE: 09/25/2013
TITLE: The Use of Wireless Devices' External Storage
EXAMINER: Sall, El Hadji Malick
ART UNIT: 3715

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

Response To Notice to File Missing Parts

Dear Commissioner:

This communication is in response to a Notice to File Missing Parts mailed on October 17, 2013 for 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. 17, 2013.

In this response, please find followings:

- 1) A new application data sheet (ADS) to correct a problem of the mailing address.
- 2) Substitute drawings include a copy of annotated drawings and a copy of replacement drawings to correct a mislabeling problem recently 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.
- 3) A substitute specification includes a markup copy of the amended specification starting on page 3 of this paper and a clean copy of the amended specification to correct the informality issue in response to the Notice and correct the labeling issue discussed above.

There is no new matter being introduced in the substitute specification and in the substitute drawings. 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 10/17/2013. If there is still any issue, Applicant can be reached at the address and phone listed bellow.

Respectively Submitted

10/29/2013

/shengtai tsao/

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

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.

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 ~~state~~ 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.

↳ [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 volumes ~~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).~~

~~e) 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] ~~e) 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 (1512) 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 (1512), 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 (1512), which provides download contents.

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

[032] ~~+~~ **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)

4) 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 (1512 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 (1512 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 (1512 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 (1512 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 (1512 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 ~~the~~ 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~~ use ~~the browser~~ 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.

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 features, 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 could 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 renaming 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

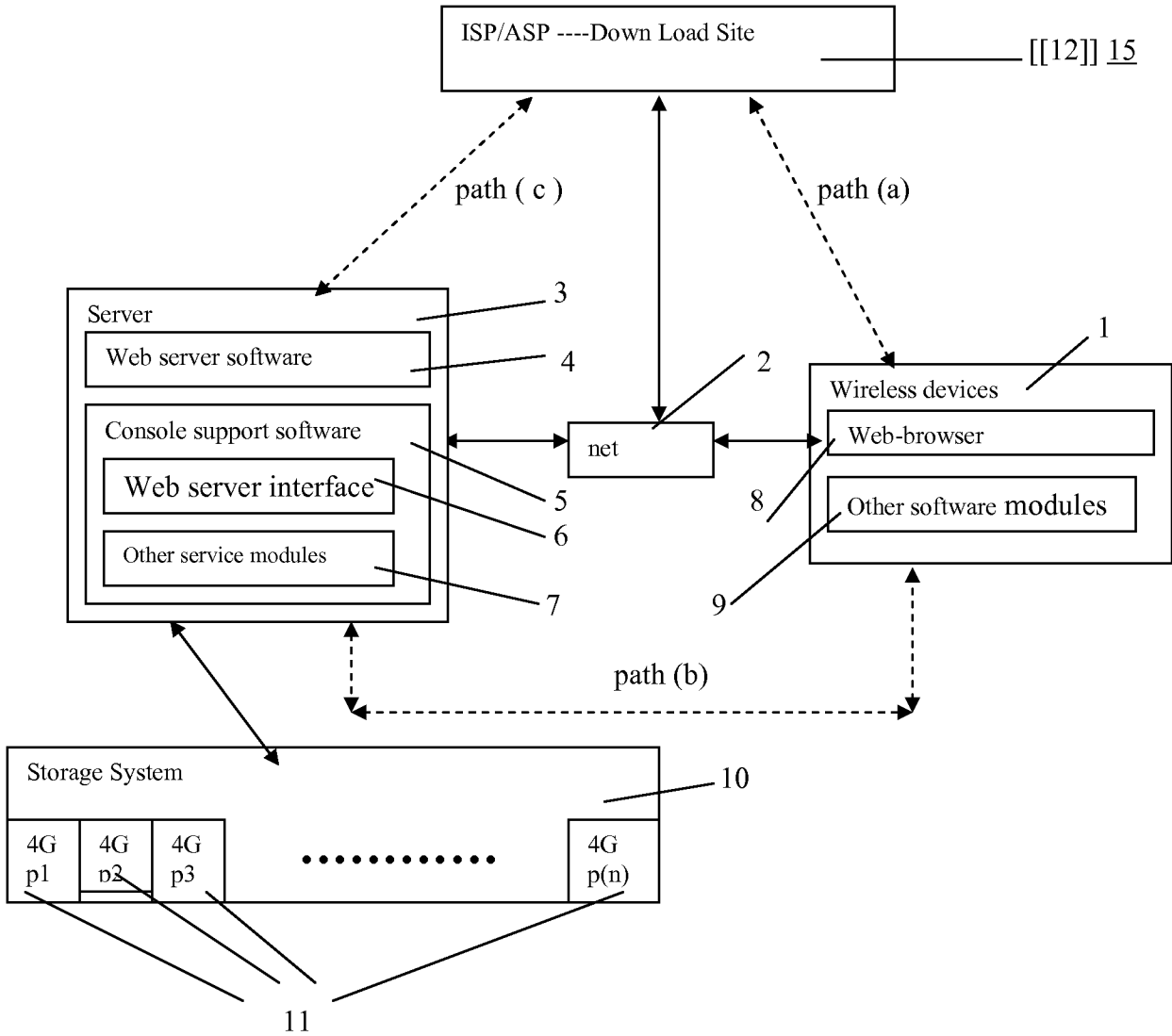
retrieve and play multimedia data file such as video or music stored in the allocated storage volume (10 of Fig.2) located on the server (3 of Fig. 2).

[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.

Wireless out-band download



(Replacement Sheet)

Wireless devices supports in a simple environment

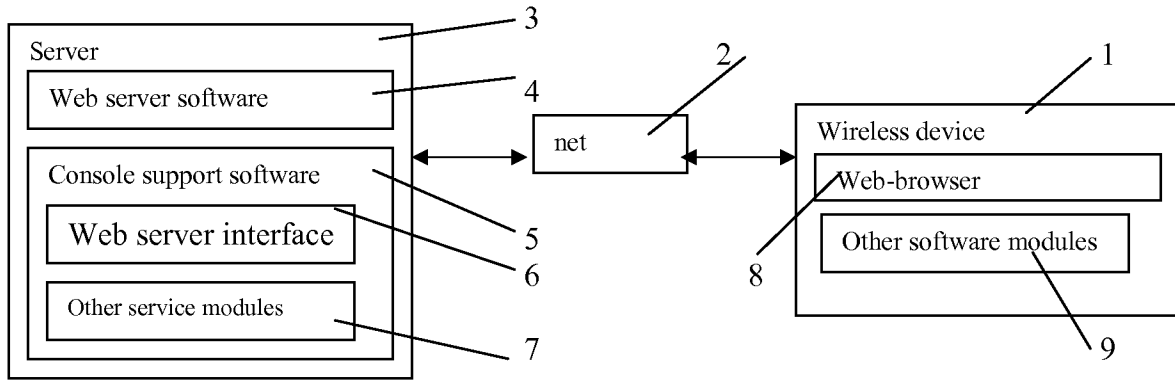


Fig. 1

(Replacement Sheet)

Wireless devices access external storage through web browser

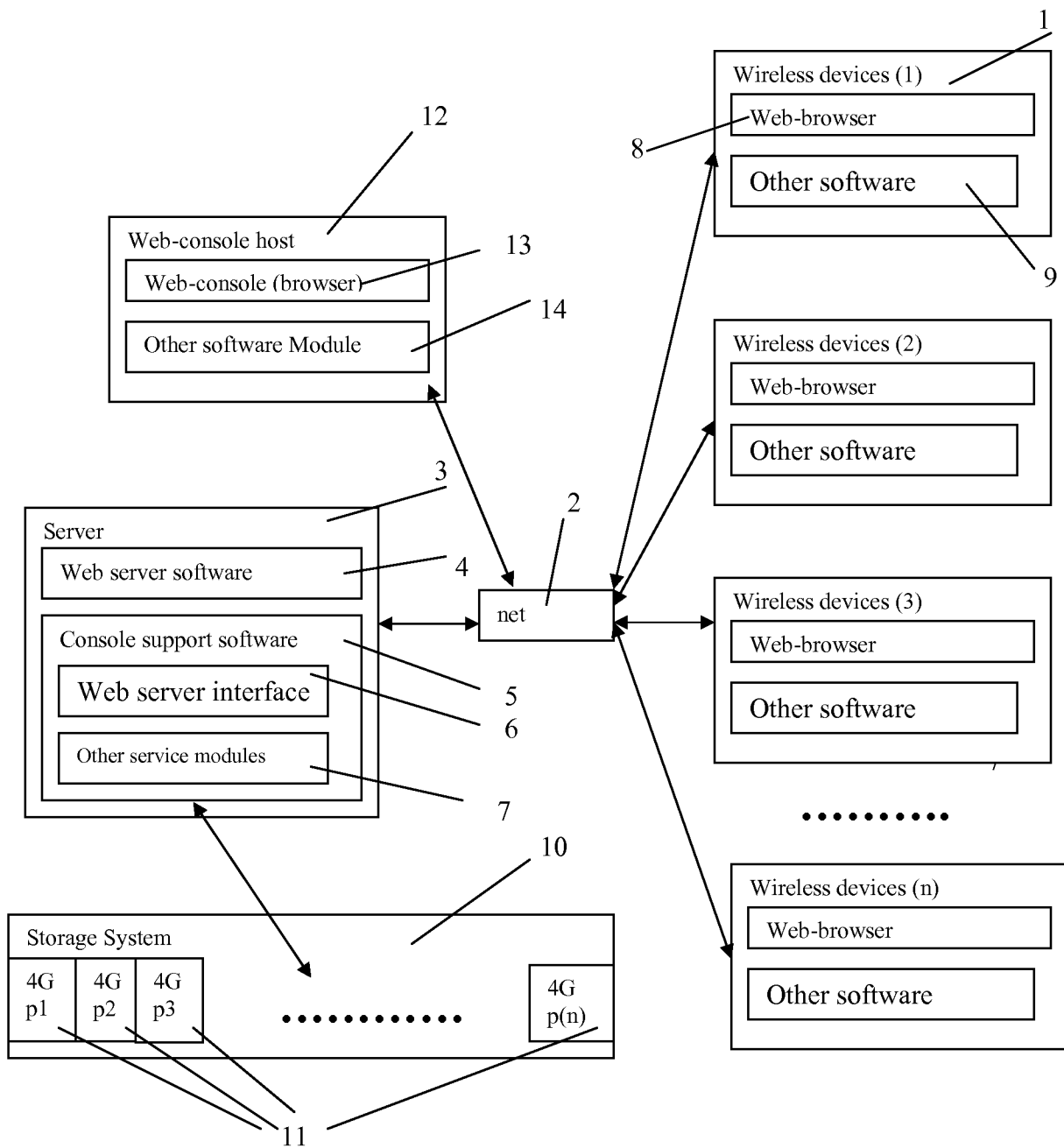


Fig. 2

Wireless out-band download

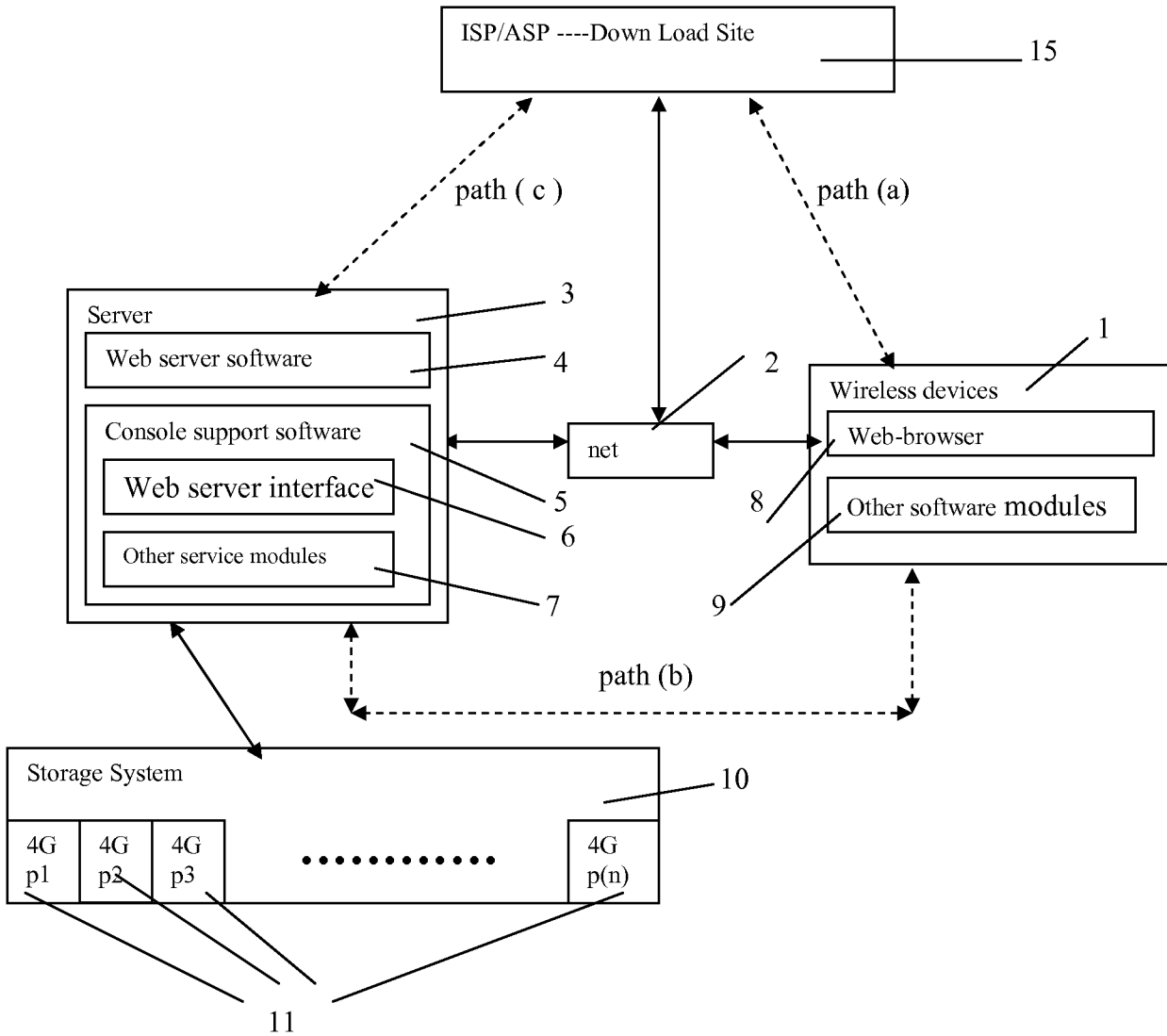


Fig. 3

(Replacement Sheet)

The CCDSVM Support External Device for Huge Number of Wireless Device

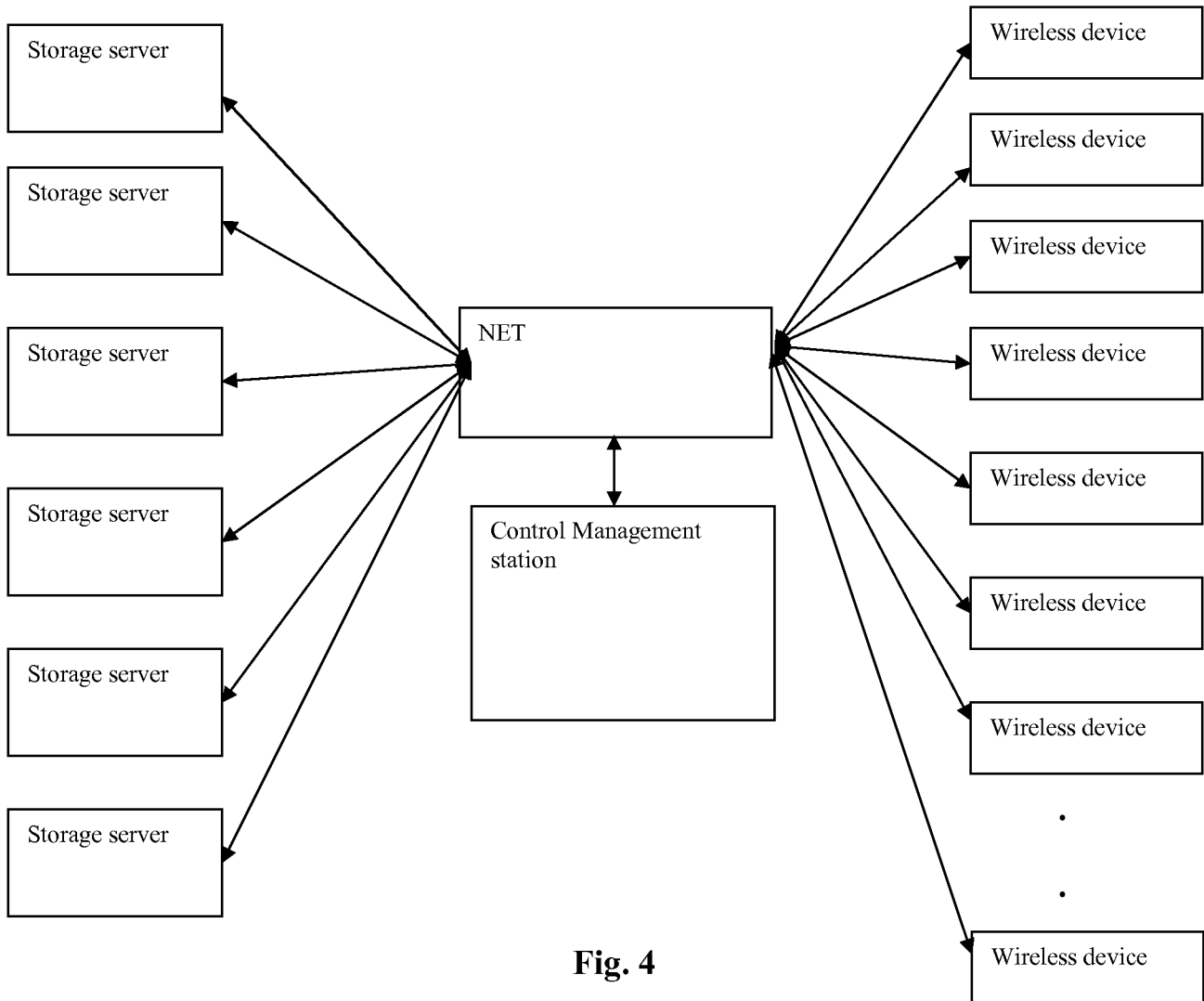


Fig. 4

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

Secrecy Order 37 CFR 5.2

<input type="checkbox"/>	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
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Inventor Information:

Inventor 1					<input type="button" value="Remove"/>
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Sheng	Tai	Tsao		
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
City	Fremont	State/Province	CA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1	3906 Borgo Common				
Address 2					
City	Fremont	State/Province	CA		
Postal Code	94538	Country i	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					<input type="button" value="Add"/>

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<input type="checkbox"/> An Address is being provided for the correspondence information of this application.			
Customer Number	77501		
Email Address	ted.tsao@sttwebos.com	<input type="button" value="Add Email"/>	<input type="button" value="Remove Email"/>

Application Information:

Title of the Invention	Method and System For concurrent Web Based Multitasking Support		
Attorney Docket Number		Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support	

Publication Information:
 Request Early Publication (Fee required at time of Request 37 CFR 1.219)

 Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.
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Customer Number	77501		

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Prior Application Status	Pending	<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
14036744	Continuation of	10726897	2003-12-04
Prior Application Status		<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
10726897	non provisional of		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

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This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support		
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	<input type="button" value="Remove"/>
			Access Code ⁱ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

- This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support	

Applicant 1	<input type="button" value="Remove"/>
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<input checked="" type="radio"/> Assignee	<input type="radio"/> Legal Representative under 35 U.S.C. 117
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Title of Invention	Method and System For concurrent Web Based Multitasking Support		

If the Assignee is an Organization check here. <input type="checkbox"/>				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Sheng	Tai (Ted)	Tsao	
Mailing Address Information:				
Address 1	3906 Borgo Common			
Address 2				
City	Fremont	State/Province	CA	
Country i	US	Postal Code	94538	
Phone Number	4088130536	5105808592	Fax Number	
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Signature:

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Signature	/shengtai tsao/		Date (YYYY-MM-DD)	2013-10-29
First Name	Sheng	Last Name	Tsao	Registration Number
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EFS ID:	17256221
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Use of wireless devices external storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	29-OCT-2013
Filing Date:	25-SEP-2013
Time Stamp:	15:18:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Specification	744spec-markup.pdf	123958 <small>b01287197a2ffb1f4a49d6e78e701505d159f8b5</small>	no	12

Warnings:

Information:

2	Specification	744spec-clean.pdf	96505	no	9
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Warnings:					
Information:					
3	Drawings-only black and white line drawings	744draw_markup.pdf	49588	no	1
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Warnings:					
Information:					
4	Drawings-only black and white line drawings	744draw_replacement.pdf	68406	no	4
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Warnings:					
Information:					
5	Application Data Sheet	744-ADS.pdf	1509604	no	6
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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.

APPLICANT: Sheng Tai (Ted) Tsao, et al.
SERIAL NO.: 14/036,744 Confirmation No. 5504
FILING DATE: 09/25/2013
TITLE: The Use of Wireless Devices' External Storage
EXAMINER: Sall, El Hadji Malick
ART UNIT:

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

Dear Commissioner:

This is communication directs to request for correcting filing errors found in materials submitted on 09/25/2013 and submitted on 10/29/2013. Enclosed please find:

- 1) A replacement copy of new application transmittal to correct the prior application number and name of the examiner and art unit submitted on 09/25/2013. The prior application number is 10/726,897 not the 12/726,897. The examiner name shall be Sall, El Hadji Malick, not Mohamed Ibrahim.
- 2) Please replace the original title of "Use of wireless devices external storage" with new title of "Method and system for wireless device access to external storage".
- 3) A replacement copy of ADS to comprise the new title of "Method and system for wireless device access to external storage".

Very appreciate helps from the USPTO to enter the corrected prior application number and title of the application.

Respectively submitted

11/14/2013

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

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.

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.

First Inventor

Title

Express Mail Label No.

Sheng Tai (Ted) Tsao

Method and System for Expand Storag

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. **Fee Transmittal Form** (e.g., PTO/SB/17)
2. **Applicant claims small entity status.**
See 37 CFR 1.27.
3. **Specification** [Total Pages 17]
Both the claims and abstract must start on a new page
(For information on the preferred arrangement, see MPEP 608.01(a))
4. **Drawing(s)** (35 U.S.C. 113) [Total Sheets 4]
5. **Oath or Declaration** [Total Sheets 2]
a. Newly executed (original or copy)
b. A copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
i. **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s)
name in the prior application, see 37 CFR
1.63(d)(2) and 1.33(b).
6. **Application Data Sheet.** See 37 CFR 1.76
7. **CD-ROM or CD-R** in duplicate, large table or
Computer Program (Appendix)
 Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
(if applicable, items a. – c. are required)
a. Computer Readable Form (CRF)
b. Specification Sequence Listing on:
i. CD-ROM or CD-R (2 copies); or
ii. Paper
c. Statements verifying identity of above copies

ADDRESS TO:

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

ACCOMPANYING APPLICATION PARTS

9. **Assignment Papers** (cover sheet & document(s))
Name of Assignee _____
10. **37 CFR 3.73(b) Statement** **Power of Attorney**
(when there is an assignee)
11. **English Translation Document** (if applicable)
12. **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
 Copies of citations attached
13. **Preliminary Amendment**
14. **Return Receipt Postcard** (MPEP 503)
(Should be specifically itemized)
15. **Certified Copy of Priority Document(s)**
(if foreign priority is claimed)
16. **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i).
Applicant must attach form PTO/SB/35 or equivalent.
17. Other: _____

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

 Continuation Divisional Continuation-in-part (CIP) of prior application No.: 12/726,897.....

Prior application information:

Examiner Mohamde IbrahimArt Unit: 2444

19. CORRESPONDENCE ADDRESS

 The address associated with Customer Number: 77501 OR Correspondence address below

Name	Sheng Tai (Ted) Tsao				
Address	3906 Borgo Common				
City	Fremont	State	CA	Zip Code	94538
Country	USA	Telephone	408-813-0536	Email	ted.tsao@sttwebos.com

Signature	/shengtai tsao/	Date	09/25/2013
Name (Print/Type)	Sheng Tai (Ted) Tsao	Registration No. (Attorney/Agent)	

This collection of information is required by 37 CFR 1.53(b). 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: 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.

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.

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Method and System For Wireless Device Access to External Storage Space		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

Secrecy Order 37 CFR 5.2

<input type="checkbox"/>	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor 1					Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Sheng	Tai	Tsao			
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service						
City	Fremont	State/Province	CA	Country of Residence i	US	
Mailing Address of Inventor:						
Address 1	3906 Borgo Common					
Address 2						
City	Fremont	State/Province	CA			
Postal Code	94538	Country i	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
<input type="checkbox"/> An Address is being provided for the correspondence information of this application.			
Customer Number	77501		
Email Address	ted.tsao@sttwebos.com	Add Email	Remove Email

Application Information:

Title of the Invention	Method and System For Wireless Device Access to External Storage Space		
Attorney Docket Number		Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Method and System For Wireless Device Access to External Storage Space	

Publication Information:

<input type="checkbox"/> Request Early Publication (Fee required at time of Request 37 CFR 1.219)
<input type="checkbox"/> Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	77501		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	10726897	2003-12-04
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove			
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Method and System For Wireless Device Access to External Storage Space	

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

<p>This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.</p> <p><input checked="" type="checkbox"/> NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.</p>

Authorization to Permit Access:

<p><input checked="" type="checkbox"/> Authorization to Permit Access to the Instant Application by the Participating Offices</p> <p>If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.</p> <p>In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.</p> <p>In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.</p>
--

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Method and System For Wireless Device Access to External Storage Space	

Applicant 1	<input type="button" value="Remove"/>
<p>If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.</p>	
<input type="button" value="Clear"/>	
<input checked="" type="radio"/> Assignee	<input type="radio"/> Legal Representative under 35 U.S.C. 117
<input type="radio"/> Person to whom the inventor is obligated to assign.	<input type="radio"/> Person who shows sufficient proprietary interest
<p>If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:</p>	
<p>Name of the Deceased or Legally Incapacitated Inventor : <input type="text"/></p>	
<p>If the Applicant is an Organization check here. <input type="checkbox"/></p>	

Prefix	Given Name	Middle Name	Family Name	Suffix
	Sheng	Tai (Ted)	Tsao	

Mailing Address Information:			
Address 1	3906 Borgo Common		
Address 2			
City	Fremont	State/Province	CA
Country	US	Postal Code	94538
Phone Number	4088130536 5105808592	Fax Number	
Email Address	ted.tsao@sttwebos.com		

Additional Applicant Data may be generated within this form by selecting the Add button.	<input type="button" value="Add"/>
--	------------------------------------

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1
<p>Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.</p>
<input type="button" value="Remove"/>

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Method and System For Wireless Device Access to External Storage Space		

If the Assignee is an Organization check here. <input type="checkbox"/>				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Sheng	Tai (Ted)	Tsao	
Mailing Address Information:				
Address 1	3906 Borgo Common			
Address 2				
City	Fremont	State/Province	CA	
Country i	US	Postal Code	94538	
Phone Number	4088130536	5105808592	Fax Number	
Email Address	ted.tsao@sttwebos.com			
Additional Assignee Data may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications				
Signature	/shengtai tsao/		Date (YYYY-MM-DD)	2013-11-14
First Name	Sheng	Last Name	Tsao	Registration Number
Additional Signature may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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.**

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 the Freedom of Information Act requires disclosure of these records.
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 inspections 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:	17401594
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Use of wireless devices external storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	14-NOV-2013
Filing Date:	25-SEP-2013
Time Stamp:	13:47:19
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	Applicant Arguments/Remarks Made in an Amendment	Request-4-correction.pdf	40532 <small>85bba4fa27c6904b134f5555c61a4bbdaf5be68e</small>	no	1

Warnings:

Information:

2	Applicant Arguments/Remarks Made in an Amendment	CON897-transmittle.pdf	276562	no	2
			4615106857ceeacef5c977b986c562e02f5e faa9		
Warnings:					
Information:					
3	Application Data Sheet	CON897-ADS.pdf	1509426	no	6
			e1637cbf8a8826a6f583ddc53595bd6f58b6 30ab		
Warnings:					
Information:					
Total Files Size (in bytes):				1826520	

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.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
14/036,744

APPLICATION AS FILED - PART I

(Column 1) (Column 2)

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(j))	20 minus 20 = *	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 = *	
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.

SMALL ENTITY

RATE(\$)	FEE(\$)
N/A	70
N/A	300
N/A	360
x 40 =	0.00
x 210 =	0.00
	0.00
	0.00
TOTAL	730

OR OTHER THAN SMALL ENTITY

RATE(\$)	FEE(\$)
N/A	
N/A	
N/A	
TOTAL	

APPLICATION AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

OR OTHER THAN SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total (37 CFR 1.16(i))	*	Minus	**	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=
	Application Size Fee (37 CFR 1.16(s))				
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					

SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
TOTAL ADD'L FEE	

OR OTHER THAN SMALL ENTITY

RATE(\$)	ADDITIONAL FEE(\$)
x =	
x =	
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 found in the appropriate box in column 1.



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

Table with 6 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY. DOCKET NO, TOT CLAIMS, IND CLAIMS. Values: 14/036,744, 09/25/2013, 3715, 730, (blank), 20, 3

CONFIRMATION NO. 5504

UPDATED FILING RECEIPT



77501
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

Date Mailed: 11/22/2013

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

Inventor(s) Sheng Tai (Ted) Tsao, Fremont, CA;

Applicant(s) Sheng Tai (Ted) Tsao, Fremont, CA;

Power of Attorney: None

Domestic Applications for which benefit is claimed - None.

A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

If Required, Foreign Filing License Granted: 10/10/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 14/036,744

Projected Publication Date: 03/26/2015

Non-Publication Request: No

Early Publication Request: No

** SMALL ENTITY **

Title

Use of wireless devices external storage

Preliminary Class

434

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

APPLICANT: Sheng Tai (Ted) Tsao, et al.
SERIAL NO.: 14/036,744 Confirmation No. 5504
FILING DATE: 09/25/2013
TITLE: The Use of Wireless Devices' External Storage
EXAMINER: ???
ART UNIT: 3715

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

REQUEST FOR CORRECT PRIORITY BENEFIT FOR APPLICATION 14/036,744

Dear Commissioner:

Applicant requests to withdraw all prior ADS submitted for instant application. A replacement copy of the application data sheet (ADS) is enclosed for establishing right benefit of priority for instant application.

Very appreciate helps from the USPTO to enter the corrected prior application number and title of the application.

Respectively submitted

06/09/2014

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

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Use of wireless device external storage		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

Secrecy Order 37 CFR 5.2

<input type="checkbox"/>	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor 1					Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Sheng	Tai	Tsao			
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service						
City	Fremont	State/Province	CA	Country of Residence i	US	
Mailing Address of Inventor:						
Address 1	3906 Borgo Common					
Address 2						
City	Fremont	State/Province	CA			
Postal Code	94538	Country i	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
<input type="checkbox"/> An Address is being provided for the correspondence information of this application.			
Customer Number	77501		
Email Address	ted.tsao@sttwebos.com	Add Email	Remove Email

Application Information:

Title of the Invention	Use of wireless device external storage		
Attorney Docket Number		Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Use of wireless device external storage	

Publication Information:

<input type="checkbox"/>	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
<input type="checkbox"/>	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	77501		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status	Pending	<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	10726897	2003-12-04
Prior Application Status	Pending	<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
10726897	non provisional of		2003-12-04
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Use of wireless device external storage		
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	<input type="button" value="Remove"/>
			Access Code ⁱ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

<p>This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.</p> <p><input type="checkbox"/> NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.</p>
--

Authorization to Permit Access:

<input checked="" type="checkbox"/> Authorization to Permit Access to the Instant Application by the Participating Offices
<p>If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.</p> <p>In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.</p> <p>In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.</p>

Applicant Information:

<p>Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.</p>
--

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Use of wireless device external storage	

Applicant 1	<input type="button" value="Remove"/>
<p>If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.</p>	
<input type="button" value="Clear"/>	
<input checked="" type="radio"/> Assignee	<input type="radio"/> Legal Representative under 35 U.S.C. 117
<input type="radio"/> Person to whom the inventor is obligated to assign.	<input type="radio"/> Person who shows sufficient proprietary interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:	
Name of the Deceased or Legally Incapacitated Inventor : <input type="text"/>	
If the Applicant is an Organization check here. <input type="checkbox"/>	

Prefix	Given Name	Middle Name	Family Name	Suffix
	Sheng	Tai (Ted)	Tsao	

Mailing Address Information:			
Address 1	3906 Borgo Common		
Address 2			
City	Fremont	State/Province	CA
Country ⁱ	US	Postal Code	94538
Phone Number	4088130536 5105808592	Fax Number	
Email Address	ted.tsao@sttwebos.com		

Additional Applicant Data may be generated within this form by selecting the Add button.	<input type="button" value="Add"/>
--	------------------------------------

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1
<p>Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.</p>
<input type="button" value="Remove"/>

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Use of wireless device external storage		

If the Assignee is an Organization check here. <input type="checkbox"/>				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Sheng	Tai (Ted)	Tsao	
Mailing Address Information:				
Address 1	3906 Borgo Common			
Address 2				
City	Fremont	State/Province	CA	
Country i	US	Postal Code	94538	
Phone Number	4088130536	5105808592	Fax Number	
Email Address	ted.tsao@sttwebos.com			
Additional Assignee Data may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications				
Signature	/shengtai tsao/		Date (YYYY-MM-DD)	2013-09-25
First Name	Sheng	Last Name	Tsao	Registration Number
Additional Signature may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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.**

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 the Freedom of Information Act requires disclosure of these records.
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 inspections 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:	19244912
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Use of wireless devices external storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	09-JUN-2014
Filing Date:	25-SEP-2013
Time Stamp:	12:34:15
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response to Pre-Exam Sequence Notice	Request-4-correction.pdf	26051 <small>811d9c92d60f91d56c9cdf50365e2aaa3cd503da4</small>	no	1

Warnings:

Information:

2	Application Data Sheet	744-ADS.pdf	1509645 a0b5747e28bd0421e48aba4730be66cc1e9520ef	no	6
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Warnings:

Information:

Total Files Size (in bytes):	1535696
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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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/036,744	09/25/2013	Sheng Tai (Ted) Tsao	

77501
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

CONFIRMATION NO. 5504
IMPROPER CFR REQUEST



Date Mailed: 08/11/2014

RESPONSE TO REQUEST FOR CORRECTED FILING RECEIPT

Power of Attorney, Claims, Fees, System Limitations, and Miscellaneous

In response to your request for a corrected Filing Receipt, the Office is unable to comply with your request because:

- The ADS submitted on 06/09/2014 was not properly marked up to show the desired changes. For information being changed relative to the information already of record, additions must be shown with underlining, and deletions must be shown with strike-through or brackets. See 37 CFR 1.76(c)(2)

/hsarwari/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.
APPLICATION No.: 14/036,744 Confirmation No.: 5504
FILING DATE: 09/25/2013
TITLE: The Method and System For Expand Storage Space For
Wireless Devices
EXAMINER: ??
ART UNIT: 3715

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

Preliminary Amendment

Dear Commissioner:

This communication directs to a preliminary amendment for the claims submitted on the filing date of 09/23/2013. The amendments start on page 2 of this paper.

In addition, please help to update the domestic priority for instant application and an application data sheet (ADS) submitted on 10/29/2013 responding to an Office Notice is amended herein, in which only the domestic priority is amended because the parent application 10/726,897 now is an US patent No. 8606880 issued on 12/10/2013

Thanks helps from the USPTO to enter the amended claims and to correct domestic priority.

Respectively Submitted.

08/19/2014

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

AMENDMENT IN THE CLAIMS:

1 – 10 (*Canceled*)

11. (*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 folder structure in the storage space allocated for the wireless device;

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

updating the folder structure whenever a user of the wireless device ~~via a web browser executed thereof~~ performs an operation to the folder structure ~~created in~~ the storage space.

12. (*Currently Amended*) The method as recited in claim 11, wherein the operation to the folder structure comprises creating from the wireless device ~~a~~ the folder in the folder structure.

13. (*Currently Amended*) The method as recited in claim 12, wherein the operation to the folder structure comprises: ~~... access from the wireless device to the folder in the folder structure residing in the storage space~~ for storing data therein or retrieving data therefrom, wherein the data is a file or a message.

14. (*Currently Amended*) The method as recited in claim ~~12+3~~, wherein the operation to the folder structure comprises: via execution of a web browser on the wireless devices to perform the operation of deleting, moving, copying or renaming a file or a folder being stored in the folder of the folder structure residing in the storage space.

15. (*Currently Amended*) The method as recited in claim ~~11+3~~, wherein the wireless device further allows the user thereof performing an operation of comprising facilitating

~~to store downloading a file being downloaded from a remote web server directly into the storage space instead of downloading the file into the wireless device itself.~~

16. *(Currently Amended)* The method as recited in claim 15, wherein said ~~facilitating to store downloading 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.

17. *(Previously Presented)* The method as recited in claim 11, wherein the folder structure is created with multiple folders on a file system configured on the storage space allocated to the each of the wireless devices.

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

~~..... a plurality of storage devices; and~~

~~..... at least one network interface;~~

~~wherein the a server~~ configured to:

- allocate a storage space of a predefined capacity for each of the wireless devices,
- create a folder structure 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 folder structure in the storage space; and
- update the folder structure whenever a user of the each of the wireless devices ~~via a web browser executed thereof to~~ performs an operation to the folder structure in 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 operable access to the folder structure in the storage space allocated to the each of the wireless devices.~~

19. *(Currently Amended)* The ~~server system~~ as recited in claim 18, wherein the operation to the folder structure comprises: ~~creating from the each of the wireless devices a~~ the folder in the folder structure.

20. *(Currently Amended)* The ~~server system~~ as recited in claim 19, wherein the operation to the folder structure comprises: ~~access from the wireless device to the folder in the folder structure residing in the storage space for storing data therein or retrieving data therefrom, wherein the data is a file or a~~ message.

21. *(Currently Amended)* The ~~server system~~ as recited in claim ~~18~~²⁰, wherein the operation to the folder structure comprise: ~~via execution of a web browser on the each of the wireless devices to perform the operation of deleting or moving or copying or renaming from the each of the wireless devices a file or a folder being stored in the folder structure of the storage space.~~

22. *(Currently Amended)* The ~~server system~~ as recited in claim 18, wherein the wireless device has a function of making or receiving a phone call.

23. *(Currently Amended)* The ~~server system~~ as recited in claim 18, wherein the folder structure is created with multiple folders on a file system configured in the storage space allocated to the each of the wireless devices.

24. *(Currently Amended)* The ~~server system~~ as recited in claim ~~18~~²⁰, wherein each of the wireless devices further is operable to ~~allow the user thereof performing operation of store-downloading a file-being-downloaded from a remote web server directly into the storage space instead of downloading the file into the each of the wireless devices itself.~~

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

program code that, when executed by a server, configures the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a folder structure 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 folder structure of the storage space; and

update the folder structure whenever a user of the each of the wireless devices ~~via a web browser executed thereof~~ performs an operation to the folder structure ~~in of~~ the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices.

26. *(Currently Amended)* The program product of claim ~~25~~²⁶, wherein the operation to the folder structure comprises: creating, from the each of the wireless devices, a folder for the folder structure in the storage space allocated to the each of the wireless devices.

27. *(Currently Amended)* The program product of claim ~~26~~²⁷, wherein the operation to the folder structure comprises: access, from the each of the wireless devices, to the folder in the folder structure for storing data therein or retrieving data therefrom, wherein the data is a file or a message.

28. *(Currently Amended)* The program product of claim ~~25~~²⁷, wherein the operation to the folder structure comprises ~~via execution of a web browser on the each of the wireless device to perform the operation of~~ deleting or moving or copying or renaming ~~from the each of the wireless devices~~ a file or a folder being stored in the folder structure.

29. *(Currently Amended)* The program product of claim ~~25~~²⁷, wherein each of the wireless devices further is operable to ~~allow the user thereof performing an operation of~~ downloading ~~store~~ a file being downloaded from a remote web site ~~directly~~ into the

storage space ~~directly instead of downloading the file into the each of the wireless devices itself.~~

30. (Previously Presented) The program product of claim 29, wherein the folder structure is created with multiple folders on a file system configured on the storage space allocated to the each of the wireless devices.

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

Secrecy Order 37 CFR 5.2

<input type="checkbox"/>	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
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Inventor Information:

Inventor 1					Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Sheng	Tai	Tsao			
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service						
City	Fremont	State/Province	CA	Country of Residence i	US	
Mailing Address of Inventor:						
Address 1	3906 Borgo Common					
Address 2						
City	Fremont	State/Province	CA			
Postal Code	94538	Country i	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
<input type="checkbox"/> An Address is being provided for the correspondence information of this application.			
Customer Number	77501		
Email Address	ted.tsao@sttwebos.com	Add Email	Remove Email

Application Information:

Title of the Invention	Method and System For concurrent Web Based Multitasking Support		
Attorney Docket Number		Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support	

Publication Information:

<input type="checkbox"/> Request Early Publication (Fee required at time of Request 37 CFR 1.219)
<input type="checkbox"/> Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.			
Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	77501		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.					
Prior Application Status	Patented		<input type="button" value="Remove"/>		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14036744	Continuation of	10726897	2003-12-04	8606880	2013-12-10
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.					<input type="button" value="Add"/>

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).			
<input type="button" value="Remove"/>			
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support	

Applicant 1	<input type="button" value="Remove"/>
<p>If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.</p>	
<input type="button" value="Clear"/>	
<input checked="" type="radio"/> Assignee	<input type="radio"/> Legal Representative under 35 U.S.C. 117
<input type="radio"/> Person to whom the inventor is obligated to assign.	<input type="radio"/> Person who shows sufficient proprietary interest
<p>If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:</p>	
<p>Name of the Deceased or Legally Incapacitated Inventor : <input type="text"/></p>	
<p>If the Applicant is an Organization check here. <input type="checkbox"/></p>	

Prefix	Given Name	Middle Name	Family Name	Suffix
	Sheng	Tai (Ted)	Tsao	

Mailing Address Information:			
Address 1	3906 Borgo Common		
Address 2			
City	Fremont	State/Province	CA
Country	US	Postal Code	94538
Phone Number	4088130536 5105808592	Fax Number	
Email Address	ted.tsao@sttwebos.com		

Additional Applicant Data may be generated within this form by selecting the Add button.	<input type="button" value="Add"/>
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Assignee Information including Non-Applicant Assignee Information:

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Assignee 1
<p>Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.</p>
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support		

If the Assignee is an Organization check here. <input type="checkbox"/>				
Prefix	Given Name	Middle Name	Family Name	Suffix
	Sheng	Tai (Ted)	Tsao	
Mailing Address Information:				
Address 1	3906 Borgo Common			
Address 2				
City	Fremont	State/Province	CA	
Country i	US	Postal Code	94538	
Phone Number	4088130536	5105808592	Fax Number	
Email Address	ted.tsao@sttwebos.com			
Additional Assignee Data may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications				
Signature	/shengtai tsao/		Date (YYYY-MM-DD)	2013-10-29
First Name	Sheng	Last Name	Tsao	Registration Number
Additional Signature may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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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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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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 inspections 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:	19909098
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Use of wireless devices external storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	19-AUG-2014
Filing Date:	25-SEP-2013
Time Stamp:	20:17:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Preliminary Amendment	744-Claims-Amend.pdf	51020 <small>daabdba68b2d94c2d76d8632c7180a818d e726e1</small>	no	6

Warnings:

Information:

2	Application Data Sheet	744-ADS.pdf	1509601 592c26b826b8cb6367c2a4b8ed5240c5c213b84a	no	6
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Warnings:

Information:

Total Files Size (in bytes):	1560621
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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.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/036,744	Filing Date 09/25/2013	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	
<input type="checkbox"/> 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 \$ =	
<input type="checkbox"/> 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).			
<input type="checkbox"/> 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

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT	08/19/2014	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X \$40 = 0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X \$210 = 0
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))					
<input type="checkbox"/> 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
/MARY PEOPLES/

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Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 4 columns: APPLICATION NUMBER (14/036,744), FILING OR 371(C) DATE (09/25/2013), FIRST NAMED APPLICANT (Sheng Tai (Ted) Tsao), ATTY. DOCKET NO./TITLE

CONFIRMATION NO. 5504

PUBLICATION NOTICE

77501
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538



Title: Use of wireless devices external storage

Publication No. US-2015-0089181-A1
Publication Date: 03/26/2015

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.

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Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PLUS Search Results for S/N 14036744, Searched Thu Jun 04 09:00:17 EDT 2015

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
14/036,744 09/25/2013 Sheng Tai (Ted) Tsao 5504

77501 7590 06/18/2015
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

EXAMINER

ELMORE, REBA I

ART UNIT PAPER NUMBER

2131

NOTIFICATION DATE DELIVERY MODE

06/18/2015

ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

- ted.tsao@sttwebos.com
ted.tsao@yahoo.com
ted.tsao@comcast.net

Office Action Summary	Application No. 14/036,744	Applicant(s) TSAO, SHENG TAI (TED)	
	Examiner REBA I. ELMORE	Art Unit 2131	AIA (First Inventor to File) Status Yes

-- 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 MONTHS 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 September 25, 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) 1-20 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) 1-20 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 September 25, 2013 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.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____.
- 3) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 4) Other: _____.

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

1. Claims 11-30 have been presented for examination. Claims 1-10 were cancelled by the preliminary amendment filed August 19, 2014.

SPECIFICATION

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

DOUBLE PATENTING

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

5. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may

be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

6. The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit <http://www.uspto.gov/forms/>. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to <http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp>.

7. Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-17 are of U.S. Patent No. 8,606,880. Although the claims at issue are not identical, they are not patentably distinct from each other because of the following analysis.

14/036744 (2015/0089181)

8,606,880

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

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;

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 folder structure in the storage space allocated for 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

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

updating the folder structure whenever a user of the wireless device performs an operation to the folder structure in the storage space.

updating the file system whenever a user of the wireless device performs an operations of 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.

18. A server facilitating expanding storage capacity for a plurality of wireless devices, the server comprising:

a plurality of storage devices; and

at least one network interface;

wherein the server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a folder structure 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 folder structure in the storage space; and

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

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

25. A non-transitory computer-readable storage medium comprising:

program code that, when executed by a server, configures the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a folder structure 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 folder structure of the storage space; and

update the folder structure whenever a user of the each of the wireless devices performs an operation to the folder structure in the storage space, wherein the storage space being remotely located with respect to the each of the wireless devices.

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 devices 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.

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 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.

8. Claims 1-17 of US Patent No. 8,606,880 contain every element of claims 11-30, of the present application, and as such anticipate(s) claims 11-30 of the present application.

9. Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-20 are of U.S. Patent No. 8,868,690. Although the claims at issue are not identical, they are not patentably distinct from each other because of the following analysis.

14/036744 (2015/0089181)

8,868,690

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

1. A server providing storage space to wireless device, the server comprising:

at least one storage device, and

a storage medium comprising program code that, when executed by the server, causes the server to:

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;

allocate, via the at least one storage device, a storage space of a predefined capacity to a wireless device,

creating a folder structure in the storage space allocated for the wireless device;

create a folder structure residing in the storage space, wherein the storage space being remotely located with respect to the wireless device;

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

establish a link for the wireless device access to the folder structure in the storage space; and

updating the folder structure whenever a user of the wireless device performs an

couple with the wireless device for allowing a user thereof access to the folder structure

operation to the folder structure in the storage space.

18. A server facilitating expanding storage capacity for a plurality of wireless devices, the server comprising:

a plurality of storage devices; and

at least one network interface;

wherein the server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a folder structure 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 folder structure in the storage space; and

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

25. A non-transitory computer-readable storage medium comprising:

program code that, when executed by a server, configures the server to:

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

in the storage space for storing a data object therein or retrieving a data object therefrom, the storing of a data object including to download a file from a remote web server directly into the storage space.

10. A server comprising:

a plurality of storage devices;

wherein at least a first one of the storage devices is configured with a storage space of a predefined capacity allocated to a wireless device and allow the wireless device

via a wireless link access to the storage space, said access to the storage space including to store a data object therein retrieve a data object therefrom,

wherein the storage space is remotely located with respect to the wireless device, and wherein the server is configured to couple with the wireless device for allowing a user on the wireless device to download a file from a remote web server directly into the allocated storage space.

16. A non-transitory computer-readable medium, residing in a server, comprising:

program instructions that, when executed by the server, cause the server to:

allocate a storage space of a predefined capacity for each of a plurality of wireless devices;

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

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

10. Claims 1-20 of US Patent No. 8,868,690 contain every element of claims 11-30, of the present application, and as such anticipate(s) claims 11-30 of the present application.

14/036744 (2015/0089181)

11. 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 folder structure in the storage space allocated for the wireless device;

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

updating the folder structure whenever a user of the wireless device performs an operation to the folder structure in the storage space.

18. A server facilitating expanding storage capacity for a plurality of wireless devices, the server comprising:

a plurality of storage devices; and

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

couple with the each of the wireless devices for allowing a user thereof access to the storage space for storing a data object therein or retrieving a data object therefrom, the storing of a data object including to download a file from a remote web server directly into the storage space.

8,856,195

1. A method for expanding storage capacity for 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 wireless 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 performed by the user for storing a file therein, the storing of a file including to download a file from a remote web server directly into the storage space.

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

the wireless devices; and

at least one network interface;

wherein the server configured to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a folder structure 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 folder structure in the storage space; and

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

25. A non-transitory computer-readable storage medium comprising:

program code that, when executed by a server, configures the server to:

allocate a storage space of a predefined capacity for each of the wireless devices, create a folder structure 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 folder structure of

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 wireless 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 includes updating the file system in response to an operation performed by the user for storing a file therein, the storing of a file including to download a file from a remote web server directly into the storage space; and

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

16. A non-transitory computer-readable medium comprising:

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

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

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

the storage space; and

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

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 includes updating the file system in response to an operation performed by the user for storing a file therein, the storing of a file including to download a file from a remote web server directly into the storage space.

11. Claims 1-20 of US Patent No. 8,856,195 contain every element of claims 11-30, of the present application, and as such anticipate(s) claims 11-30 of the present application.

12. "A latter patent claim is not patentably distinct from an earlier patent claim if the latter claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obvious-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obvious-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). *ELI LILLY AND COMPANY v BARR LABORATORIES, INC.*, United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

13. Humans are a species of the animal genus. Our case law firmly establishes that a later genus claim limitation is anticipated by, and therefore not patentably distinct from, an earlier species claim. *In re Berg*, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 1053, 29 USPQ2d 2010, 2016 (Fed. Cir. 1993); *In re Gosteli*, 872 F.2d 1008, 1010, 10 USPQ2d 1614, 1616 (Fed. Cir. 1989); *Titanium Metals Corp. v. Banner*, 778 F.2d

775, 782, 227 USPQ 773, 779 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d at 944, 214 USPQ at 767 (C.C.P.A. 1982)." ELI LILLY AND COMPANY v BARB LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

35 USC 102

14. The following is a quotation of the appropriate paragraphs of pre-AIA 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.

15. Claims 1-20 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Surbey et al. (2004/0186750).

16. Surbey teaches the present invention (claims 11, 18 and 25) as claimed including a method and a system for expanding storage capacity of a wireless device, the method and system comprising:

a plurality of storage devices including storage at the web servers, at the database servers and the shared RAID database (e.g. see Figure 8);

at least one network interface (e.g. see Figure 8);

wherein the server uses program code to execute instructions thereby configuring the server to:

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 as a specific size of storage space at a network location remote to the user being provided for the user to conduct/receive a particular task or function and with the storage space being a predefined

capacity being inherent as storage is always a definite size and not a variable or unknown parameter (e.g. see Figure 8 with support in paragraphs 0130-0134);

creating a folder structure in the storage space allocated for the wireless device as creating folder structures as needed for clients in order to provide functions that the client requests or needs (e.g. see paragraphs 0040-0043);

establishing a link for the wireless device to access the storage space as using the network connectivity for the client to have access to the information related to the tasks being provided by the host for the client (e.g. see Figures 2 and 8); and,

updating the folder structure whenever a client of the wireless device performs an operation to the folder structure in the storage space as making changes to the client information for the insurance transaction being provided (e.g. see paragraphs 0065-0067).

As to claims 12, 19 and 26, Surbey teaches the present invention wherein the operation to the folder structure includes creating a folder for the client via the wireless device as being able to use a wide variety of devices for accessing the different parts of the network (e.g. see paragraphs 0078-0083).

As to claims 13, 20 and 27, Surbey teaches the present invention wherein the operation to the folder structure comprises the wireless device accessing the folder in the folder structure for storing data therein or retrieving data therefrom, wherein the data is a file or a message for providing interaction between the service provider and the client (e.g. see paragraphs 0078-0083).

As to claims 14, 21 and 28, Surbey teaches the present invention wherein the operation to the folder structure comprises using a web browser using a wireless device to execute the operation of deleting, moving, copying or renaming a file or a folder in the folder structure residing in the storage space as executing operations using a web browser (e.g. see paragraph

0048).

As to claims 15, 24 and 29, Surbey teaches the present invention wherein the wireless device further allows the user to perform an operation of downloading a file from a remote web server directly into the storage space as uploading the documents needed to perform the desired service for the client (e.g. see paragraph 0063).

As to claim 16, Surbey teaches the present invention wherein the downloading of a file from a website directly into the storage space includes 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 as uploading the documents needed to perform the desired service for the client (e.g. see paragraph 0063).

As to claims 17, 23 and 30, Surbey teaches the present invention wherein the folder structure is created with multiple folders on a file system configured on the storage space allocated to each of the wireless devices as creating and storing a plurality of folders for organizing and tracking all of the data associated with the client (e.g. see paragraphs 0041-0043).

As to claim 22, Surbey teaches the present invention wherein the wireless device has a function of making or receiving a phone call as being able to use a wide variety of different devices including cell phones (e.g. see paragraphs 0085-0090).

CONCLUSION

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reba I. Elmore, whose telephone number is (571) 272-4192. The examiner can normally be reached on Monday and Thursday from 7:30am to 6:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the art unit supervisor for AU 2131, Christian Chace, can be reached for general questions concerning this application

at (571) 272-4190. Additionally, the official fax phone number for the art unit is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center central telephone number is (571) 272-2100.

/Reba I. Elmore/
Primary Patent Examiner
Art Unit 2189

Notice of References Cited	Application/Control No. 14/036,744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)	
	Examiner REBA I. ELMORE	Art Unit 2131	Page 1 of 2

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification	
*	A	US-8,059,818	11-2011	Asokan et al.	380/277
*	B	US-7,707,065	04-2010	Kangas, Timo Juhani	705/26.1
*	C	US-7,286,651	10-2007	Packingham et al.	379/88.14
*	D	US-6,968,334	11-2005	Salmenkaita et al.	707/10
*	E	US-6,754,710	06-2004	McAlear, James A.	709/227
*	F	US-2014/0208399	07-2014	Ponzio, JR., Frank J.	726/4
*	G	US-2012/0124370	05-2012	CHOI et al.	713/159
*	H	US-2010/0211651	08-2010	Guedalia et al.	709/217
*	I	US-2006/0036610	02-2006	Wang, Wen-Jiunn	707/010
*	J	US-2005/0193199	09-2005	Asokan et al.	713/168
*	K	US-2004/0186750	09-2004	Surbey et al.	705/004
*	L	US-2004/0176958	09-2004	Salmenkaita et al.	704/275
*	M	US-2002/0133597	09-2002	Jhingan et al.	709/228

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

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	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.

Notice of References Cited	Application/Control No. 14/036,744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)	
	Examiner REBA I. ELMORE	Art Unit 2131	Page 2 of 2

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A US-2003/0072031	04-2003	Kuwata et al.	358/1.15
*	B US-2002/0173295	11-2002	Nykanen et al.	455/414
	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				
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NON-PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	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.




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CONFIRMATION NO. 5504

SERIAL NUMBER 14/036,744	FILING or 371(c) DATE 09/25/2013 RULE	CLASS 711	GROUP ART UNIT 2131	ATTORNEY DOCKET NO.		
APPLICANTS						
INVENTORS Sheng Tai (Ted) Tsao, Fremont, CA;						
** CONTINUING DATA *****						
** FOREIGN APPLICATIONS *****						
** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 10/10/2013						
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Met after Allowance Initials _____	STATE OR COUNTRY CA	SHEETS DRAWINGS 4	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 3
ADDRESS Sheng Tai (Ted) Tsao 3906 Borgo Common. Fremont, CA 94538 UNITED STATES						
TITLE Use of wireless devices external storage						
FILING FEE RECEIVED 730	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

Index of Claims 	Application/Control No. 14036744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)
	Examiner REBA I ELMORE	Art Unit 2131

✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

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

CLAIM		DATE							
Final	Original	06/14/2015							
	1	✓							
	2	✓							
	3	✓							
	4	✓							
	5	✓							
	6	✓							
	7	✓							
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	12	✓							
	13	✓							
	14	✓							
	15	✓							
	16	✓							
	17	✓							
	18	✓							
	19	✓							
	20	✓							

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	206	((("4563626") or ("4942534") or ("5400924") or ("5515177") or ("5517323") or ("5539531") or ("5566000") or ("5663807") or ("5692647") or ("5926747") or ("6098048") or ("6243010") or ("3702900") or ("3808538") or ("4137522") or ("4078747") or ("4109788") or ("4257002") or ("4295278") or ("4317157") or ("4363137") or ("4395930") or ("4458111") or ("4462022") or ("4465907") or ("4508935") or ("4521677") or ("4573854") or ("4588345") or ("4609922") or ("4616972") or ("4617960") or ("4761806") or ("4765435") or ("4768033") or ("4775997") or ("4777880") or ("4780599") or ("4803717") or ("4805075") or ("4805203") or ("4809315") or ("4823482") or ("4825448") or ("4845338") or ("4848823") or ("4855713") or ("4876742") or ("4879696") or ("4881240")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/14 17:22
L2	12	1 and (wireless with devic\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/14 17:23

6/ 14/ 2015 5:24:57 PM

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EAST Search History

EAST Search History (Prior Art)


Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	("20150089181").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 18:09
L2	12	("8606880").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 18:20
L3	2	("8868690").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 19:11
L4	2	("8856195").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 19:43
L5	10	((("20020133597") or ("20030072031") or ("6754710") or ("5901228")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 19:47
L6	1289	server same (wireless with device\$3) same (storage or memory) same capacity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 20:55
L7	112	6 same remote same (file or folder)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 20:56
L8	12	7 same allocat\$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 20:56
L9	413	(wireless with network) same ((memory or storage) with (capacity or size or amount)) same (file or folder)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 21:02
L10	4	9 same creat\$4 same updat\$5	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 21:02

L11	20	9 same (updat\$5 with (file or folder))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 21:05
L12	55	9 same (change or update or updated or updating)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 21:14
L13	120	(wireless with device) same server same (network with (memory or storage) with capacity)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 21:28
L14	9	13 same link	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 21:29
L15	0	13 same updat\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 21:34
L16	7	13 and (updat\$4 with (file or folder))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 21:34
L17	2385	(711/111).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:23
L18	8578	(711/114).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:23
L19	3585	(711/147).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:23
L20	1988	(711/171).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:23
L21	20199	(709/219).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:23
L22	16185	(709/226).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:23

L23	313	(707/795).OCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:24
L24	5063	(707/802).OCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:24
L25	3330	G06F3/0631.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:24
L26	2818	G06F3/0604.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:24
L27	13514	G06F3/067.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:24
L28	4296	G06F2003/0697.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/13 22:24

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Search Notes 	Application/Control No. 14036744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)
	Examiner REBA I ELMORE	Art Unit 2131

CPC- SEARCHED		
Symbol	Date	Examiner
G06F 3/067	6/14/2015	RIE
G06F 3/0604	6/14/2015	RIE
G06F 3/0631	6/14/2015	RIE
G06F 2003/0697	6/14/2015	RIE

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
711	111	6/14/2015	RIE
	114	6/14/2015	RIE
	147	6/14/2015	RIE
	171	6/14/2015	RIE
709	219	6/14/2015	RIE
	226	6/14/2015	RIE
707	795	6/14/2015	RIE
	802	6/14/2015	RIE

SEARCH NOTES		
Search Notes	Date	Examiner
PLUS Search	6/14/2015	RIE
PALM Inventor Search	6/14/2015	RIE
EAST Text Search	6/14/2015	RIE

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.
Application Number: 14/036,744 Confirmation No. 5504
Filing Date: 09/25/2013
Title: Method and System For Expand Storage Space For Wireless Devices
Examiner: Reba I. Elmore Phone: 571-272-4192
Art Unit: 2131

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

Response to Non-Final Office Action

Dear Commissioner:

This communication responds to the non-final office action mailed on 6/18/2015. In the response, please find:

- 1) Exemplary support information starts on page 2 of this paper.
- 2) Amendment to the Title starts on the page 3 of this paper.
- 3) Amendment to the Specification starts on the page 4 of this paper.
- 4) Claim amendments start on page 5 of this paper for the claims directly pointing to the patentable subject matters.
- 5) Remarks/Comments made for overcoming the office rejections.

Thanks for helps from the USPTO to enter the amended claims.

Respectively Submitted.

06/22/2015

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

EXEMPLARY SUPPORT:

Claims	Disclosed In parent Application 10/726,897 of 2003
31	a) page 2, lines 29 – 33; b) page 4 lines 1-2; and; c) page 5, lines 3- 7; d) page 5, line 8 – page 6, line 28, and e) page 4, line 23 – 40.
42	a) page 2, lines 29 – 33; b) page 4 lines 1-2; and; c) page 5, lines 3- 7; d) page 5, lines 8 – 27; and e) page 3, lines 22 – 25.
34 & 45	Page 3, lines 31-32, page 6, lines 21-25.
35, 36, & 42 & 46	Page 3, lines 22 – 25, page 5, lines 23-27.
32 & 43, & 44	Page 5, lines 37 – page 6, lines 20.
37 & 50	Page 3, lines 22-23, and page 5, lines 23 – 27
41 & 48	Claim 8, and page 6, lines 3 - 4
33 & 50	Fig. 2 etc.
40	Page 3, lines 23 - 24

AMENDMENT TO THE TITLE:

Please replace the original title of

~~“Use of Wireless Devices External Storage”~~

With a new title of

“Method and Apparatus For Wireless Devices Access To External Storage”

AMENDMENT TO THE SPECIFICATION:

Applicant requests withdrawing all prior versions of the specification in the application, and a substitute specification is enclosed herein with correction to numerous informalities in the specification, without introducing new matters, that includes:

- a) A clear copy of the substitute specification.
- b) A markup copy of the substitute specification to show where the corrections are made.

PS: the amendment in paragraph [041] of instant application includes adding a limitation of “and also contains IP address of the remote web site”

This limitation is not a new matter because it was disclosed in the claim 8 of parent application 10/726,897 filed on 12/04/2003.

AMENDMENT TO THE CLAIMS:

1 – 10 (*Canceled*)

11 – 30 (*Canceled*)

31. (*New*) A server delivering remote storage service, comprising:

at least one network interface, a plurality of storage spaces, and a computer-readable storage device comprising program code that, executed by the server, causes the server to: assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;

establish a link for the first wireless device remotely access to the first one of the storage spaces; and

couple with the first wireless device to carryout a requested operation for remotely access to the first one of the storage spaces in response the user from the first wireless device performing the operation,

wherein said operation comprises storing a data object into the first one of the storage spaces or retrieving a data object therefrom,

the storing of a data object including to download a file from a remote server across a network into the first one of the storage spaces through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device performed the operation for downloading the file.

32. (*New*) The server as recited in claim 31, wherein said downloading a file from a remote server further comprises:

the first wireless device obtaining downloading information for the file from the remote server, transmitting the cached downloading information to the server, and causing the server in accordance with the downloading information to download the file into the first one of the storage spaces.

33. (*New*) The server as recited in claim 31, wherein said storage spaces further are configured among a plurality of storage devices.

34. *(New)* The server as recited in claim 31, wherein the data object, being stored into or retrieved from the first one of the storage spaces, further is a message or multimedia data of video, digital music, or digital picture.
35. *(New)* The server as recited in claim 31, wherein said operation further comprises:
from the first wireless device remotely deleting, moving, copying or renaming a folder in the first one of the storage spaces.
36. *(New)* The server as recited in claim 35, wherein said operation further comprises:
from the first wireless device remotely deleting, moving, copying or renaming a file in the first one of the storage spaces.
37. *(New)* The server as recited in claim 31, wherein said operation further comprises:
from the wireless device remotely creating a folder or a folder structure in the first one of the storage spaces.
38. *(New)* The server as recited in claim 31, wherein said program code further configures the server to causing display of the first one of the storage spaces in a web browser executed on the first wireless device for the user remotely access to the first one of the storage spaces.
39. *(New)* The server as recited in claim 31, wherein the program code further causes the server to: assign exclusively a second one of the storage spaces of a predefined capacity to a user of a second wireless device from which the user allowed to perform operation for remotely access to the second one of the storage spaces.
40. *(New)* The server as recited in claim 31, wherein the wireless device further is at least one of a cell phone or a personal data assistant and management device (“PDA”).
41. *(New)* The server as recited in claim 31, wherein the download information for the file further includes at least the name of the file and the internet protocol (“IP”) address of the remote server.

42. *(New)* A server delivering remote storage service, comprising:
at least one network interface, a plurality of storage spaces, and a computer-readable storage device comprising program code that, executed by the server, causes the server to:
assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;
establish a link for the first wireless device remotely access to the first one of the storage spaces; and
couple with the first wireless device to carryout a requested operation for remotely access to the first one of the storage spaces in response the user from the first wireless device performing the operation,
wherein said operation comprises creating from the first wireless device a folder structure of a plurality of folders in the first one of the storage spaces, and said operation further comprises to delete or move or copy or rename a first one of the folders, wherein each of the folders being configured for storing a data object therein or retrieving a data object therefrom.
43. *(New)* the server as recited in claim 42, wherein said storing a data object includes to download a file from a remote server across a network into the first one of the storage spaces through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device performed the operation for downloading the file.
44. *(New)* the server as recited in claim 43, wherein said downloading a file comprises: the first wireless device obtaining download information for the file from the remote server, transmitting the cached download information to the server; and causing the server in accordance with the downloading information to store the file from the remote server into the first one of the storage space.
45. *(New)* the server as recited in claim 42, wherein said data object, being stored into or retrieved from the first one of the storage spaces, further comprises a message, or a

multimedia data of video, digital music or photo picture.

46. *(New)* the server as recited in claim 42, wherein said operation further comprises: from the first wireless device to delete, move, copy or rename a data object of a file in the folder structure.
47. *(New)* The server as recited in claim 42 wherein said storage spaces further are configured among a plurality of storage devices.
48. *(New)* The server as recited in claim 43, wherein said download information for the file further includes at least the name of the file and the internet protocol (“IP”) address of the remote server.
49. *(New)* The server as recited in claim 42, wherein the program code further causes the server to: assign exclusively a second one of the storage spaces of a predefined capacity to a user of a second wireless device from which the user allowed to perform operation for remotely access to the second one of the storage spaces.
50. *(New)* the server as recited in claim 42, wherein said operation further comprises: from the first wireless device to create a folder in the folder structure.

Remark

The Office Action mailed on 06/18/2015 has been carefully considered. Claims 11-30 are previously pending and all pending claims stand rejected. The claims are amended including canceling the claims 11-30 and adding new claims 31 – 50 in response to the office action for more directly pointing to the patentable limitation of instant application. Applicant respectfully requests reconsideration of the instant application in light of the amendments above and the remarks made below:

1: Regarding the Specification:

Applicant appreciates the office action pointed out issues related to the specification of instant application. A new substitute specification with corrections to numerous informality errors is enclosed, which includes enhance the title of the specification.

2: Regarding Double Patenting:

Applicant will file an terminal disclaimer to fix the double patenting issue.

3. Regarding The 35 USC §102 Rejections:

a) The Office Action of 08/29/2014 rejected claims 11-30 under 35 U.S.C. 102(b) as being anticipated by Surbey et al. (2004/0186750). The claims 11-30 are canceled after amending for the claims, therefore, the rejections to the claim 11-30 are moot.

b) In addition, the new claim 42 enhances the claims 11, 18 and 25 with patentable limitations that can not be found in the Surbey. For example,

Surbey, disclosed a system automatically creating a customized folder structure comprising of a plurality folders for a web-enabled collaboration insurance process (see abstract, claims 1 – 100, and [0067] of Surbey), where there is no function provided for deleting, renaming, copying, or moving each of the folder .

With instant application, a system facilitating a user from a wireless device to create a folder structure, and also facilitating functions for the user to perform deleting, renaming, copying, or moving folder in the folder structure (see attached Exemplary Support).

c) The new claim 31 comprising a limitation of downloading a file from a remote server, through utilizing the cached download information in the wireless device, into the assigned storage space that can not be found in Surbey.

Because the significant differences between the claims 31 & 42 and the Surbey discussed above, the new claims 31 & 42 are patentable over the Surbey, and a request for withdrawing the 35 U.S.C §102 rejections and a request for allowance of the new claims 31 – 50 are respectively submitted.

4: Summary:

Applicant invites Examiner to review the remark and the amendment to the claims made above for further reconsideration of the allowance of the amended claims.

Applicant also appreciates the Office Action for carefully examining instant application and if a telephone conference would facilitate the advance the examination 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: 06/22/2015

/Shengtai tsao/

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

<<<<The markup version of the amended specification>>>>

The Use of Method and Apparatus For Wireless Device Access To Devices' External Storage

**By: ~~Sheng (Ted) Tai Tsao~~
11/19/2003**

Field of the Invention

Cross Reference to Prior Application

[001] This invention is a continuation application of the US patent application No. 10/726,897 filed on 12/04/2003 and now a US patent No. 8606880. The application No. 10/726,897 had referenced ~~is the continuation of the previous invention, a prior application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System" filed on 08/06/2002 and converted to US patent application No. 10/713,904 filed on 07/22/2003 and now is an US patent No. 7418702. 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, and had also referenced an prior application number 60/402,626 of "IP Based Distributed Virtual SAN" filed on 08/12/2002 and converted to application 10/713,905 file on 07/22/2003 and now is an US patent No. 7379990. All mentioned prior applications are herein incorporated by reference in their entirety for all purpose, to transmit data in wireless environment.~~

Field of the Invention

[002] This invention focuses on how can a wireless device actually access to and use an external storage provided by a server.

Background Information

a)

[003] Terminology:

Storage system always is a critical part of a computing system regardless of the computing system is a server, a laptop or desktop computer, or a wireless device such as cell phone or personal data assistant device (“PDA”). ~~The terminologies described in next few sections reflect the scope and are a part of present invention.~~

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

The storage system could be the internal storage of a computing system, in which storage media such as hard disk drives, memory sticks, memory etc. are ~~[[is]]~~ connected to ~~[[a]]~~ the computing system directly through bus or a few inches of cable~~[[.]]~~. Therefore, the storage media actually are the internal ~~is a~~ components of ~~[[a]]~~ the computing system in a same enclosure.

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

The storage system could be external storage of a computing system, with which storage media are ~~[[is]]~~ not the ~~[[a]]~~ components of ~~[[a]]~~ the computing system in a same enclosure. Therefore, ~~they it has~~ the storage media have to be connected through connecting media (e.g. ~~[[a]]~~ longer cable) such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless connecting media etc.. The storage media of the external storage could be magnetic hard disk drives, solid ~~state~~ 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 Storage Volumes, and the Corresponding File System:~~

To effectively use ~~the~~ a storage system, the storage devices of the storage system usually need~~[[s]]~~ to be partitioned ~~into small~~ with storage volumes. After the partition, each of the volumes can be used ~~[[to]]~~ for establishing a file system~~[[s]]~~ on top of it. To simplify the discussion, herein, the term of the storage volume~~[[,]]~~ and its corresponding file system, and the ~~term of the~~ storage partition of a storage are often used without differentiation ~~in this invention.~~

[007] CCDSVM:

~~CCDSVM~~ It is an abbreviation for A central controlled distributed scalable virtual machine system (“~~The CCDSVM~~”) of present invention allows a control management ~~station system~~ to control a group of computing systems and provides distributed services including storage service to client systems over the ~~[[in]]~~ Internet, Intranet, and LAN environment.

[008] **ISP & ASP:**

In addition, today, Internet service provider (ISP) and application service provider (ASP) are provide different type of storage services.

b) [009]

Brief Description Of Figures:

[010] Fig. 1: ~~This~~ illustrates an embodiment of present invention. The Fig. 1 is the same figure as the Fig. 1 of a prior 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 the 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 for access to the storage system.

[012] Fig. 3: ~~This figure~~ shows the a scheme of a wireless device downloading contents from an ISP/ASP or from 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 prior application of “IP Based Distributed Virtual SAN” with an exception that each IP storage server provide provides file system as external storage for each of the wireless devices instead of provide providing IP based virtual SAN service. Also, each host in the Fig. 1 actually is a wireless device.

c) **Assumptions:**

[014] Unless specified, the programming languages~~[[,]]~~ and the protocols used by the ~~each~~ software modules, and the computing systems used ~~described in this of present~~ invention are assumed to be the same as described in the previous prior 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 configured on their wireless devices such as cell phone or PDA, which are usually limited to 256MB for the PDA and much less for the cell phone. To effectively solve this problem and let users ~~own~~ possess 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 spaces ~~on~~ provided by a server can be used as the external storage ~~[[for]]~~ of the wireless devices. This technology has been ~~claimed~~ briefly introduced in the previous two prior patent~~[[s]]~~ applications ~~submission by the same author~~.

[018] Now ~~we can~~ let us examine how ~~does can~~ the external storage actually be used by the wireless devices. First, We can let each server unit (e.g. the server 3 of the Fig. 2) partition its storage system into ~~such way that each~~ volumes and each of the volumes will have multiple~~[[-]]~~ GB in size. Therefore, ~~each a user from a web browser of each -any~~ of the wireless devices can be exclusively ~~be~~ assigned ~~and exclusively~~ for access to a specific storage volume ~~on a~~ of the 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~~ of the server unit can support a total of 1024 users. Further, any data on a ~~the~~ wireless device of a user can be transmitted to an assigned storage volumes ~~on a~~ in the 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 the a ~~designated~~ server unit through out-band approach (~~shown in Fig. 3~~). Finally, in one

embodiment, 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] **Detailed Description of the Drawings**

[021] Referring now to ~~the~~ Fig. 1[[:]], ~~This figure~~ it demonstrates an example of an infrastructure 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) represents 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, and Intranet.

[022] ~~b)~~ As described in previous patents submission In the Fig. 1, the console support software (5) ~~on~~ of the server (3) can be configured to support web-based multi[[~~-~~]]tasking ~~for~~ while a user[[s]] ~~on web-browser (8) of a~~ wireless device (1) using a web browser (8). Further, the user ~~on the web-browser (8) of the wireless device~~ is facilitated ~~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[[/]] or directories etc, ~~on the~~ an assigned storage volume [[of]] controlled by the server (3).

~~c)~~ As described in previous patents submission In addition, the other software modules (9) of the wireless device (1) is also configured capable to send data to or receive data from the other service modules (7) of the server (3) via communication link (2) through a suitable IP or non-IP based protocol. The data ~~file~~ being sent or received cold be a digital photo picture, a message etc. in respect to a user's request.

[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 without limits.

[024] ~~e) As described in previous patents submission~~ Besides, the web-browser (8) of the wireless device (1) can be any suitable software, which 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, where its storage volumes can be allocated assigned to multiple wireless devices as followings: 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 a user of each of the wireless devices can be assigned with a storage volume of having a desired size, ~~which can be best supported by~~ so that the server 3 can support for maximum numbers of the wireless devices.

[028] ~~e) 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] The Fig. 3: ~~This figure has demonstrated how that~~ a user from a web-browser (8) on a wireless ~~devices~~ device (1) can download data from a known web-site (15+2) to his/her assigned external storage (10) ~~of~~ on the server (3). The dash-lined path (a) represents a

communication ~~channel link~~ between the wireless device (1) and ~~any~~ a remote download web-site (1512), which that provides the downloading contents for web download. The dash-lined path (b) represents a communication channel link between the wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication link channel between the server 3 wireless devices (1) and the remote web-server (1512), which provides download contents.

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

[032] ~~4-~~**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 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 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), for example, can use a web-console (13 of Fig. 2) to partition each storage device 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 the 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 ~~by, which divides~~ dividing 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 (11) 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 ~~and exported~~ to a user of 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)

4) 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 utilize the web-browser 8 illustrated in Fig. 2 to 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 use the web-browser 8 performing all data management operations such as delete, copy, move, rename objects etc. in respect to the folder/directory structure on ~~that~~ the file system.

[037] In order to support such data management ~~[[on]]~~ over the external storage (10 of Fig. 2) ~~from web browser (8 of Fig. 2)~~ of assigned to the user of the wireless device (1 of Fig. 2) by using the web-browser 8, 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 a desired data management operation~~[[s]]~~ and send information of the operation ~~information~~ to the console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2). ~~These~~ The mentioned operation~~[[s]]~~ includes establishing folder/directory, copying, moving, or reaming data file etc. for the folder

directory. 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 requested operations on the assigned file system of an 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 assigned external storage volume (11 of Fig. 2) ~~of a~~ in 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 storage volume (11 of Fig. 2) ~~on server (3 of Fig. 2)~~ for the wireless device (1). 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] Now, referring to the Fig. 3, If a user of the wireless device (1 of Fig. 3) user wants to download a data from a remote web server (1512 of Fig. 3) into the ~~assigned~~ file system on the assigned storage volume (11 of Fig. 3) [[of]] in the external storage system (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 access to~~ a remote ~~download~~ web server site (1512 of Fig. 3) ~~and to~~ obtain the information of the data for the downloading via the path (a) of the Fig. 3. For example, [[to]] the user get access to a web-page[[,]] which contains the data name for the downloading and also contains IP address of the remote web site.

[042] 2) The other software modules (9 of Fig. 3) of ~~a specific~~ the wireless device (1 of Fig. 3) ~~obtains~~ obtain the downloading information for the data, 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 access to the download web site (1512 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 the path (b) of the 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 (1512 of Fig. 3) via the path (c) of the Fig. 3 based on download information obtained. ~~It then and~~ and receives the downloading information data from the web server of download the web-site (1512 of Fig. 3).

[045] 5) Upon receiving downloaded data, the other service modules (7 of Fig. 3) of the storage server (3 of Fig. 3) write ~~these~~ the data for the specific wireless device (1 of Fig. 3) into the ~~assigned~~ file system of the assigned storage volume (11 of Fig. 3) on the server (3 of Fig. 3) for the wireless device (1).

[046] **Retrieve data from external assigned storage volume ~~of~~ for the user of the wireless device;**

[047] 1) If a web-browser (8) on a wireless device 1 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 used~~ use the browser to retrieve and play ~~those~~ multimedia data file such as video or music stored in the assigned wireless device's external storage volume (11 10 of Fig. 2); ~~which actually~~ located on [[a]] the server (3 of Fig. 2).

[048] 2) In another embodiment, if there is, in respect to the user's needs, the other software module (9 of Fig. 2) of the wireless device (1 of Fig. 2) also can retrieve data file from the assigned file system of the assigned 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 the CCDSVM is desirable, which has been described in ~~previous~~ prior patent~~[[s]]~~ applications ~~submission~~. With the CCDSVM the control management system ~~station~~ can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

Method and Apparatus For Wireless Device Access To External Storage

Cross Reference to Prior Application

[001] This invention is a continuation application of the US patent application No. 10/726,897 filed on 12/04/2003 and now a US patent No. 8606880. The application No. 10/726,897 had referenced to a prior application number 60/401, 238 of “Concurrent Web Based Multi-task Support for Control Management System” filed on 08/06/2002 and converted to US patent application No.10/713,904 filed on 7/22/2003 and now is an US patent No. 7418702, and had also referenced to an prior application number 60/402,626 of “IP Based Distributed Virtual SAN” filed on 08/12/2002 and converted to US patent application No. 10/713,905 filed on 7/22/2003 and now is an US patent No. 7379990. All mentioned prior applications are herein incorporated by reference in their entirety for all purpose.

Field of the Invention

[002] This invention focuses on how can a wireless device actually access to and use an external storage space provided by a server.

Background Information

[003] Storage system always is a critical part of a computing system regardless of the computing system is a server, a laptop or desktop computer, or a wireless device such as cell phone or personal data assistant device (“PDA”).

[004] The storage system could be the internal storage of a computing system, in which storage media such as hard disk drives, memory sticks, memory etc. are connected to the computing system directly through bus or a few inches of cable. Therefore, the storage media actually are the internal components of the computing system in a same enclosure.

[005] The storage system could be the external storage of a computing system, with which storage media are not the components of the computing system in a same enclosure. Therefore, the storage media have to be connected through connecting media (e.g. longer

cable) such as Ethernet cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless connecting media etc.. The storage media of the 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] To effectively use a storage system, the storage devices of the storage system usually need to be partitioned with storage volumes. After the partition, each of the volumes can be used for establishing a file system on top of it. To simplify the discussion, herein, the term of the storage volume and its corresponding file system, and the storage partition are often used without differentiation.

[007] A central controlled distributed scalable virtual machine system (“CCDSVM”) of present invention allows a control management system to control a group of computing systems and provides distributed services including storage service to client systems over the Internet, Intranet, and LAN environment.

[008] In addition, today, all major Internet service provider (ISP) and application service provider (ASP) are provide different type of storage services.

[009] **Brief Description Of Figures:**

[010] Fig. 1 illustrates an embodiment of the instant application. The Fig. 1 is the same as the Fig. 1 of a prior application of “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 the 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 for access to the storage system.

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

[013] Fig. 4 is similar to the Fig. 1 of a prior application of “IP Based Distributed Virtual SAN” with an exception that each IP storage server provides file system as external storage for each of the wireless devices instead of providing IP based virtual SAN service. Also, each host in the Fig. 1 actually is a wireless device.

[014] Unless specified, the programming languages and the protocols used by the software modules and the computing systems used of present invention are assumed to be the same as described in the prior 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, users commonly face a problem of lack of storage capacity configured on their wireless devices such as cell phone or PDA, which are usually limited to 256MB for the PDA and much less for the cell phone. To effectively solve this problem and let users possess 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 spaces provided by a server can be used as the external storage for the wireless devices. This technology has been briefly introduced in the prior patent applications.

[018] Now let us examine how can the external storage 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, a user of each of the wireless devices can be exclusively assigned for access to a specific storage volume of the server unit. 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 of the server unit can support a total of 1024 users. Further, any data on a wireless device of a user can be transmitted to an assigned storage volume in the server unit. In addition, the user of the wireless device also can download multimedia data from an ISP or ASP to the

assigned storage volume of the server unit through out-band approach shown in Fig. 3. Finally, in one embodiment, 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] **Detailed Description of the Drawings**

[021] Referring now to the Fig. 1, it demonstrates an example of an infrastructure comprising a network interconnecting 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) represents a communication infrastructure built up in such way that a user of a wireless device can access and browse any web-site on the Internet, and Intranet.

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

In addition, the other software modules (9) of the wireless device (1) is also configured capable to send data to or receive data from the other service modules (7) of the server (3) via communication link (2) through a suitable IP or non-IP based protocol. The data being sent or received could be a digital photo picture, a message etc., in respect to a user's request.

[023] 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 without limits.

[024] Besides, the web-browser (8) of the wireless device (1) can be any suitable software, which 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 has demonstrated that the storage system (10) of a server 3 , where its storage volumes can be allocated to multiple wireless devices as followings: 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 a user of each of the wireless devices can be assigned with a storage volume having a desired size, so that 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] The 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 assigned external storage (10) on the server (3). The dash-lined path (a) represents a communication link between the wireless device (1) and a remote download web-site (15) that provides downloading contents. The dash-lined path (b) represents a communication link between the wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication link 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) using the external storage system (10) of the server (3) for effectively resolving the storage limitation problem for the wireless devices (1).

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

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

[034] In order to support storage partition, first the console support software (5) of the server (3) must send storage information of the server (3) to the web-console (13) of the console host (12). 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), for example, can use a web-console (13) to partition each storage device and send the storage partition information to the console support software (5) of the server (3). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving the storage partition information from the web-console (13) of the console host (12), the console support software (5) of the server (3) performs the actual storage partition by dividing 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 (11) together with its corresponding file system on the storage system (10) of the server (3) needs to be exclusively assigned to a user of a specific wireless device (1) by the console support software (5) of the server (3).

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

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

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

[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 assigned storage volume (11) in the server (3), the other software modules (9) of the wireless device (1) need to send these data to the other service modules (7) of the server (3) via communication link between them. Upon receiving the data, the other service modules (7) of the server (3) write these data to the file system of the assigned storage volume (11) for the wireless device 1. 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:

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

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

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

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

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

[045] 5) Upon receiving downloaded data streams, the other service modules (7) of the storage server (3) write the data into the file system of the assigned storage volume (11) in the server (3) for the wireless device (1).

[046] Retrieve data from assigned storage volume for the user of the wireless device:

[047] 1) If a web-browser (8) on a wireless device 1 has embedded video or music functionality, a user of the wireless device (1) can use the browser to retrieve and play multimedia data file such as video or music stored in the assigned storage volume (11) located on the server (3).

[048] 2) In another embodiment, in respect to the user's needs, the other software module (9) of the wireless device (1) also can retrieve data file from the file system of the assigned storage volume (11) on the server (3).

[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 the CCDSVM is desirable, which has been described in prior patent applications. With the CCDSVM the control management system can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

Electronic Acknowledgement Receipt

EFS ID:	22697348
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Use of wireless devices external storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	22-JUN-2015
Filing Date:	25-SEP-2013
Time Stamp:	13:47:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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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	744claims.pdf	53680 <small>51280d44fec32443d691baecce2872f9fb1817f7</small>	no	8

Warnings:

Information:

2	Applicant Arguments/Remarks Made in an Amendment	744-Remark.pdf	36315	no	2
			02bcd90929262ba4abfc60a767f45ce61b35e815		
Warnings:					
Information:					
3	Specification	744spec-markup.pdf	96985	no	11
			850f9d0416b70a39681a7c690c61eb0508158f33		
Warnings:					
Information:					
4	Specification	744spec-clean.pdf	56621	no	9
			8dab15fd127ed191f9b41148c1200dc273e8354a		
Warnings:					
Information:					
Total Files Size (in bytes):			243601		

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.



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 14/036,744, 09/25/2013, Sheng Tai (Ted) Tsao, (blank), 5504

77501 7590 09/18/2015
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

EXAMINER

ELMORE, REBA I

ART UNIT PAPER NUMBER

2131

NOTIFICATION DATE DELIVERY MODE

09/18/2015

ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

- ted.tsao@sttwebos.com
ted.tsao@yahoo.com
ted.tsao@comcast.net

Office Action Summary	Application No. 14/036,744	Applicant(s) TSAO, SHENG TAI (TED)	
	Examiner REBA I. ELMORE	Art Unit 2131	AIA (First Inventor to File) Status Yes

-- 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 MONTHS 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 June 22, 2015.
 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) 1-20 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) 1-20 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 September 25, 2013 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.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____.
- 3) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 4) Other: _____.

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

1. Claims 31-50 have been presented for examination. Claims 11-30 were cancelled by the amendment filed June 22, 2015. Claims 1-10 were cancelled by the amendment filed August 19, 2014.

SPECIFICATION

2. The abstract of the disclosure is objected to because the use of language in the current abstract is confusing and difficult of readily understand. Correction is required. See MPEP § 608.01(b).

3. The amendment filed June 22, 2015 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: amended language added to paragraph 023 of the present disclosure ***‘depending on the implementation without limits’*** is unclear and possibly misleading. The terminology ‘data object’ (in claims 31-50) is also considered new matter as this term has a specific meaning within the computer storage arts.

Applicant is required to cancel the new matter in the reply to this Office Action.

4. The disclosure is written using language which is awkward and difficult to easily understand. For example:

in paragraph 002 of the present disclosure it reads *“This invention focuses on how can a wireless device actually access to and use an external storage space provided by a server.”* and should perhaps better read *“This invention focuses on a wireless device for accessing and using*

external storage space provided by a server.” and,

in paragraph 004 of the present disclosure it reads *“The storage system could be the internal storage of a computing system, in which storage media such as hard disk drives, memory sticks, memory etc. are connected to the computing system directly through bus or a few inches of cable.”* The entire specification should be rewritten to provide a more easily read description.

5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant’s cooperation is requested in correcting any errors of which applicant may become aware in the specification.

35 USC 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 31-50 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim(s) does/do not fall within at least one of the four categories of patent eligible subject matter because the claimed subject matter is directed toward a computer program per se.

DOUBLE PATENTING

8. The double patenting rejections previously given have been updated to include the newly submitted claims.

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible

harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

10. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

11. The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit <http://www.uspto.gov/forms/>. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to <http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp>.

12. Claims 31-50 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 8,606,880. Although the claims at issue are not identical, they are not patentably distinct from each other because of the following analysis.

14/036744 (2015/0089181)

8,606,880

31. A server delivering remote storage service, comprising:

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

a server configured to:

at least one network interface, a plurality of storage spaces, and a computer-readable storage device comprising program code that, executed by the server, causes the server to:

assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;

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 first wireless device remotely access to the first one of the storage spaces; and

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

couple with the first wireless device to carryout a requested operation for remotely access to the first one of the storage spaces in response the user from the first wireless device performing the operation,

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 said operation comprises storing a data object into the first one of the storage spaces or retrieving a data object therefrom,

wherein the updating of the file system comprises:

the storing of a data object including to download a first from a remote server across a network into the first one of the storage spaces through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device performed the operation for downloading the file.

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

42. A server delivering remote storage service, comprising:

at least one network interface, a plurality of storage spaces, and a computer-readable storage device comprising program code that, executed by the server, causes the server to:

assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;

establish a link for the first wireless device remotely access to the first one of the storage spaces; and

couple with the first wireless device to carryout a requested operation for remotely access to the first one of the storage spaces in response the user from the first wireless device performing the operation,

wherein said operation comprises creating from the first wireless device a folder structure of a plurality of folders in the first one of the storage spaces, and said operation further comprises to delete or move or copy or rename a first one of the folders, wherein each of the folders being configured for storing a data object therein or retrieving a data object therefrom.

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.

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

computer program instruction 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.

13. Claims 31-50 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 8,868,690. Although the claims at issue are not identical, they are not patentably distinct from each other because of the following analysis.

14/036744 (2015/0089181)

8,868,690

31. A server delivering remote storage service, comprising:

1. A server providing storage space to wireless device, the server comprising:

at least one network interface, a plurality of storage spaces, and a computer-readable storage device comprising program code that, executed by the server, causes the server to:

at least one storage device, and

a storage medium comprising program code that when executed by the server, causes the server to:

assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;

allocate, via the at least one storage device, a storage space of a predefined capacity to a wireless device, create a folder structure residing in the storage space, wherein the storage space being remotely located with respect to the wireless device;

establish a link for the first wireless device remotely access to the first one of the storage spaces; and

establish a link for the wireless device access to the folder structure in the storage space; and

couple with the first wireless device to carryout a requested operation for remotely access to the first one of the storage spaces in response the user from the first wireless device performing the operation,

couple with the wireless device for allowing a user thereof access to the folder structure in the storage space

wherein said operation comprises storing a data object into the first one of the storage spaces or retrieving a data object therefrom,

for storing a data object therein or retrieving a data object therefrom,

the storing of a data object including to download a first from a remote server across a network into the first one of the

the storing of a data object including to download a file from a remote web server directly into the storage space.

storage spaces through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device performed the operation for downloading the file.

42. A server delivering remote storage service, comprising:

at least one network interface, a plurality of storage spaces, and a computer-readable storage device comprising program code that, executed by the server, causes the server to:

assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;

establish a link for the first wireless device remotely access to the first one of the storage spaces; and

couple with the first wireless device to carryout a requested operation for remotely access to the first one of the storage spaces in response the user from the first wireless device performing the operation,

wherein said operation comprises creating from the first wireless device a folder structure of a plurality of folders in the first one of the storage spaces, and said operation further comprises to delete or move or copy or rename a first one of the folders, wherein each of the folders being configured for storing a data object therein or retrieving a data object therefrom.

6. wherein the user of the wireless device is allowed via a web browser executed thereof to perform operation to the file or folder in the folder structure.

16. A non-transitory computer-readable medium, residing in a server, comprising:

program instructions that, when executed by the server, causes the server to:

allocate a storage space of a predefined capacity for each of a plurality of wireless devices;

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

couple with the each of the wireless devices for allowing a user thereof access to the storage space for storing a data object therein or retrieving a data object therefrom,

the storing of a data object including to download a file from a remote web server directly into the storage space.

wherein the access to the storage space comprises: storing, from the each of the wireless devices, a data object into the folder in the storage space; or deleting or moving or copying or renaming, from the each of the wireless device, a file or folder in the storage space.

14. Claims 31-50 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 8,856,195. Although the claims at issue are not identical, they are not patentably distinct from each other because of the following analysis.

14/036744 (2015/0089181)

8,856,195

31. A server delivering remote storage service, comprising:

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

at least one network interface, a plurality of storage spaces, and a computer-readable storage device comprising program code that, executed by the server, causes the server to:

the wireless devices; and

a server configured to:

assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;

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 first wireless device remotely access to the first one of the storage spaces; and

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

couple with the first wireless device to carryout a requested operation for remotely access to the first one of the storage spaces in response the user from the first wireless device performing the operation,

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 said operation comprises storing a data object into the first one of the storage spaces or retrieving a data object therefrom,

wherein the updating of the file system includes updating the file system in response to an operation performed by the user for storing a file therein,

the storing of a data object including to download a first from a remote server across a network into the first one of the storage spaces through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device performed the operation for downloading the file.

the storing of a file including to download a file from a remote web server directly into the storage space; and

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

42. A server delivering remote storage service, comprising:

15. A non-transitory computer-readable medium comprising:

at least one network interface, a plurality

program instructions that, when executed

of storage spaces, and a computer-readable storage device comprising program code that, executed by the server, causes the server to:

assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;

establish a link for the first wireless device remotely access to the first one of the storage spaces; and

couple with the first wireless device to carryout a requested operation for remotely access to the first one of the storage spaces in response the user from the first wireless device performing the operation,

wherein said operation comprises creating from the first wireless device a folder structure of a plurality of folders in the first one of the storage spaces, and said operation further comprises to delete or move or copy or rename a first one of the folders, wherein each of the folders being configured for storing a data object therein or retrieving a data object therefrom.

by a server, cause the server to:

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

establish a wireless 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 includes updating the file system in response to an operation performed by the user for storing a file therein, the storing of a file including to download a file from a remote web server directly into the storage space.

15. "A latter patent claim is not patentably distinct from an earlier patent claim if the latter claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obvious-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obvious-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals

for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

16. Humans are a species of the animal genus. Our case law firmly establishes that a later genus claim limitation is anticipated by, and therefore not patentably distinct from, an earlier species claim. *In re Berg*, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 1053, 29 USPQ2d 2010, 2016 (Fed. Cir. 1993); *In re Gosteli*, 872 F.2d 1008, 1010, 10 USPQ2d 1614, 1616 (Fed. Cir. 1989); *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 782, 227 USPQ 773, 779 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d at 944, 214 USPQ at 767 (C.C.P.A. 1982)." ELI LILLY AND COMPANY v BARB LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

35 USC 102

17. The rejection of claims 1-20 as being anticipated by Surbey et al. (2004/0186750) is ***withdrawn*** due to the amendment.

18. The following is a quotation of the appropriate paragraphs of pre-AIA 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.

19. Claims 1-20 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Krstulich (US 2006/0168123).

20. Krstulich teaches the present invention (claims 31 and 42) as claimed including a server delivering remote storage service, comprising:

at least one network interface, a plurality of storage spaces, and a computer-readable

storage device comprising program code that is executed by the server (e.g. see Figure 1 which includes a network, storage and wireless devices with support in paragraph 0014);

assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device as including user configuration data along with storage capacity at the server, HTTP proxy and the wireless device (e.g. see paragraph 0016);

establish a link for the first wireless device remotely access to the first one of the storage spaces as being able to establish a temporary communication link (e.g. see paragraph 0017);

coupling a first wireless device to carry out a requested operation for remotely accessing the first storage space in response to the user from the first wireless device performing an operation as the user indicating the wireless device is ready for the download (e.g. see paragraphs 0016-0018);

wherein the operation comprises storing a data object into the first one of the storage spaces or retrieving a data object (e.g. see paragraph 0018); and

storing a data object including downloading a file from a remote server across a network into the first storage space through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device performing the operation for downloading the file (e.g. see Figure 1 with support in paragraphs 0014-0018).

As to claims 32 and 43-44, Krstulich teaches the present invention includes the wireless device obtains downloaded information for the file from the remote server, transmitting the cached downloaded information to the server (e.g. see paragraphs 0008 and 0018).

As to claims 33 and 47, Krstulich teaches the present invention wherein the storage spaces are further configured among a plurality of storage devices (e.g. see paragraphs 0008 and 0014).

As to claims 34 and 45, Krstulich teaches the present invention has data stored into or

retrieved from the storage spaces with the data including a message, multimedia data such as video, digital music or digital pictures (e.g. see paragraphs 0002 and 0020).

As to claims 35-37, 46 and 50, Krstulich teaches the present invention further comprises using the wireless device to remotely create, delete, move, copy, rename or otherwise manipulate a folder stored on the storage spaces (e.g. see paragraphs 0029-0031).

As to claim 38, Krstulich teaches the present invention is further configured for the server to display the storage space in a web browser executed on the wireless device for the user to access remotely (e.g. see paragraph 0029).

As to claims 39 and 49, Krstulich teaches the present invention is further configured to assign a second storage space of a predefined capacity to a user of a second wireless device which allows the user to perform operations remotely to the second storage space (e.g. see paragraph 0014).

As to claim 40, Krstulich teaches the present invention wherein the wireless device can include a cell phone or a personal data assistant and management device (PDA) (e.g. see paragraph 0008).

As to claims 41 and 48, Krstulich teaches the present invention includes at least the name of the file and the internet protocol (IP) address of the remote server (e.g. see paragraph 0021).

RESPONSE TO APPLICANT'S REMARKS

21. Applicant's arguments with respect to claims 31-50 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

OFFICE ACTION FINALITY

22. **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.

CONCLUSION

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reba I. Elmore, whose telephone number is (571) 272-4192. The examiner can normally be reached on Monday and Thursday from 7:30am to 6:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the art unit supervisor for AU 2131, Christian Chace, can be reached for general questions concerning this application at (571) 272-4190. Additionally, the official fax phone number for the art unit is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center central telephone number is (571) 272-2100.

/Reba I. Elmore/
Primary Patent Examiner
Art Unit 2131

Notice of References Cited	Application/Control No. 14/036,744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)	
	Examiner REBA I. ELMORE	Art Unit 2131	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-8,229,856 B1	07-2012	Reddick; Paul S.	G06Q30/04	705/50
*	B	US-6,839,743 B2	01-2005	Shim; Jae-Bum	G06F17/3089	707/E17.116
*	C	US-2010/0325709 A1	12-2010	Kawase; Michael Lee	H04N7/16	726/7
*	D	US-2008/0059519 A1	03-2008	Griffith; Tony	H04L67/06	1/1
*	E	US-2008/0208870 A1	08-2008	Tsang; Michael H.	G06F17/30165	1/1
*	F	US-2006/0168123 A1	07-2006	Krstulich; Zlatko	H04L63/083	709/219
	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	CPC 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. 14036744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)
	Examiner REBA I ELMORE	Art Unit 2131

CPC- SEARCHED		
Symbol	Date	Examiner
G06F 3/067	6/14/2015	RIE
G06F 3/0604	6/14/2015	RIE
G06F 3/0631	6/14/2015	RIE
G06F 2003/0697	6/14/2015	RIE
Search Updated	9/14/2015	RIE

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
711	111	6/14/2015	RIE
	114	6/14/2015	RIE
	147	6/14/2015	RIE
	171	6/14/2015	RIE
709	219	6/14/2015	RIE
	226	6/14/2015	RIE
707	795	6/14/2015	RIE
	802	6/14/2015	RIE
Search	Updated	9/14/2015	RIE

SEARCH NOTES		
Search Notes	Date	Examiner
PLUS Search	6/14/2015	RIE
PALM Inventor Search	6/14/2015	RIE
EAST Text Search	6/14/2015	RIE
EAST Text Search Updated	9/14/2015	RIE

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INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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EAST Search History

EAST Search History (Prior Art)


Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4	((("7418702") or ("7379990")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 18:48
L2	18	((("8606880") or ("8868690") or ("8856195") or ("20040186750")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 18:48
L3	3	("20030084128").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:15
L4	164969	(server or (web with browser)) same (wireless with (unit or device))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:31
L5	400	4 same remot\$4 same capacity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:31
L6	25	5 same user same (down-load\$4 or download\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:32
L7	17	4 same remot\$4 same ((assign\$4 or allocat\$4) with capacity)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:40
L8	164	4 same remot\$4 and (((assign\$4 or allocat\$4) with capacity) same (memory or storage)) and (down-load\$4 or download\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:43
L9	8	8 and (file with cach\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:43
L10	12	((("6651141") or ("6839743") or ("6956833") or ("7010532")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:54

L11	6121	(wireless or wire-less) same (web with (server or browser)) same (down-load\$4 or download\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:58
L12	48	11 same ((memory or storage) with (predefin\$4 or capacity))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:59
L13	5	11 same ((memory or storage) with predefin\$4 with capacity)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 19:59
L14	5	11 same ((memory or storage) same predefin\$4 same capacity)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:00
L15	40	11 same ((memory or storage) same capacity) same user	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:00
L16	2453	(711/111).OCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:06
L17	8721	(711/114).OCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:06
L18	3680	(711/147).OCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:06
L19	2040	(711/171).OCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:06
L20	20666	(709/219).OCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:06
L21	16546	(709/226).OCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:06
L22	316	(707/795).OCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:06

L23	5117	(707/802).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:06
L24	3512	G06F3/0631.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:07
L25	3126	G06F3/0604.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:07
L26	14276	G06F3/067.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/09/14 20:07

9/ 14/ 2015 8:08:05 PM

C:\Users\relmore\Documents\EAST\Workspaces\Default EAST Workspace (Flat Panel).wsp

Index of Claims 	Application/Control No. 14036744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)
	Examiner REBA I ELMORE	Art Unit 2131

✓	Rejected
=	Allowed

-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

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

CLAIM		DATE							
Final	Original	06/14/2015	09/14/2015						
	1	✓	✓						
	2	✓	✓						
	3	✓	✓						
	4	✓	✓						
	5	✓	✓						
	6	✓	✓						
	7	✓	✓						
	8	✓	✓						
	9	✓	✓						
	10	✓	✓						
	11	✓	✓						
	12	✓	✓						
	13	✓	✓						
	14	✓	✓						
	15	✓	✓						
	16	✓	✓						
	17	✓	✓						
	18	✓	✓						
	19	✓	✓						
	20	✓	✓						

Applicant Initiated Interview Request Form

Application No.: 14/036,744 First Named Applicant: Sheng Tai (Ted) Tsao
 Examiner: Reba I. Elmore Art Unit: 2131 Status of Application: Final of 09/18/2015

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) <u>101 Rej</u>	<u>31 - 50</u>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) <u>102 Rej</u>	<u>31 - 50</u>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) <u>all dependent claims</u>	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Continuation Sheet Attached Proposed Amendment or Arguments Attached

Brief Description of Arguments to be Presented: Discuss proposed response within a first month of Statutory Period

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

Sheng Tai (Ted) Tsao

Typed/Printed Name of Applicant or Representative

77501

Registration Number, if applicable

Examiner/SPE Signature

This collection of information is required by 37 CFR 1.133. 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 24 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.

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:	23605276
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Method and Apparatus For Wireless Devices Access To External Storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	25-SEP-2015
Filing Date:	25-SEP-2013
Time Stamp:	13:47:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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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-744.pdf	421862 <small>c2fc9eb1edc5a299a5eda8b2530d87654391ca70</small>	no	3

Warnings:

Information:

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, et al.
Application Number: 14/036,744 Confirmation No. 5504
Filing Date: 09/25/2013
Title: Method and System For Expand Storage Space For Wireless Devices
Examiner: Reba I. Elmore Phone: 571-272-4192
Art Unit: 2131

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

Response to Final Office Action

Dear Commissioner:

This communication responds to the final office action mailed on 09/18/2015. In the response, please find:

- 1) A new application data sheet (ADS) for correcting the ADS filed on 10/29/2013 for establishing the benefit of domestic priority date of 12/04/2003 in compliant to 37 CFR 1.76 (c)(1). The priority date is claimed in paragraph [001] of the specification filed on filing date of 10/25/2013 as a continuation application of 10/726,897 before the 10/726,897 being patented.
- 2) A substitute specification, a markup copy of the substitute specification, and a substitute abstract that correct informalities found by the final office. There is no new matter being introduced. The added sentence in [041] regarding the download information including file name and IP address of a remote server is disclosed in the claim 8 of parent 10/726,897.
- 3) Claim amendments start on page 2 of this paper in response to the office action. The major change in claims 31 including to add “presenting the first one of the storage spaces to the user on the first wireless device through communication with the first wireless device” which is disclosed in page 4 lines 30 – 36 and in claims 6 of parent 10/726,897.
- 4) Remarks for overcoming the office rejections & A request for participating pilot AFCP2.0.

Respectively Submitted,
10/21/2015

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

AMENDMENT TO THE CLAIMS:

1 – 10 (*Canceled*)

11 – 30 (*Canceled*)

31. (Currently Amended) A server for delivering remote-storage service, comprising:

~~at least one network interface;~~

a plurality of storage spaces; and

~~a non-transitory computer-readable medium storage device comprising program~~

~~instruction code that, being executed by the server, causes the server to delivering the storage service; wherein the program instructions comprise:~~

~~program instructions for allocating assign exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;~~

~~program instructions for establishing a communication link for the first wireless device remotely access to the first one of the storage spaces;~~

~~program instructions for presenting the first one of the storage spaces to the user on the first wireless device through communication with the first wireless device; and~~

~~program instructions for updating the first one of the storage spaces according to couple with the first wireless device to carry out a requested operation for remotely access to the first~~

~~one of the storage spaces in response to the user from the first wireless device performed performing the operation,~~

wherein said operation comprises storing a data object into the first one of the storage spaces or retrieving a data object therefrom,

the storing of said a data object including to download a file from a remote server across a network into the first one of the storage spaces through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device performed the operation for downloading the file.

32. (Previously Presented) The server as recited in claim 31, wherein said downloading a file from a remote server further comprises:

the first wireless device obtaining downloading information for the file from the remote server, transmitting the cached downloading information to the server, and causing the server in accordance with the downloading information to download the file into the first one of the storage spaces.

33. (Previously Presented) The server as recited in claim 31, wherein said storage spaces further are configured among a plurality of storage devices.
34. (Currently Amended) The server as recited in claim 31, wherein the ~~data-object~~, being stored into or retrieved from the first one of the storage spaces, further is a message or multimedia data of video, digital music, or digital picture.
35. (Previously Presented) The server as recited in claim 31, wherein said operation further comprises:
from the first wireless device remotely deleting, moving, copying or renaming a folder in the first one of the storage spaces.
36. (Previously Presented) The server as recited in claim 35, wherein said operation further comprises:
from the first wireless device remotely deleting, moving, copying or renaming a file in the first one of the storage spaces.
37. (Currently Amended) The server as recited in claim 31, wherein said operation further comprises:
from the first wireless device remotely creating a folder or a folder structure in the first one of the storage spaces.
38. (Currently Amended) The server as recited in claim 31, wherein said program instructions ~~code~~ further configures the server to cause~~causing~~ display of the first one of the storage spaces in a web browser executed on the first wireless device for the user remotely access to the first one of the storage spaces.

39. (Currently Amended) The server as recited in claim 31, wherein the program instructions code further causes the server to ~~assign~~ allocate exclusively a second one of the storage spaces of a predefined capacity to a user of a second wireless device from which the user allowed to perform operation for remotely access to the second one of the storage spaces.

40. (Currently Amended) The server as recited in claim 31, wherein the first wireless device further is ~~at least~~ one of a cell phone or a personal data assistant and management device ("PDA").

41. (Previously Presented) The server as recited in claim 31, wherein the download information for the file further includes at least the name of the file and the internet protocol ("IP") address of the remote server.

42. (Currently Amended) A server for delivering remote-storage service, comprising:
~~at least one network interface, a plurality of storage spaces, and a non-transitory computer-readable medium storage device comprising program instructions code that, executed by the server, causes the server to deliver the storage service; wherein the program instructions comprises:~~
program instructions for the server allocating ~~assign~~ exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;
program instructions for establishing a communication link for the first wireless device remotely access to the first one of the storage spaces;
program instructions for sending information of the first one of the storage spaces to the first wireless device for presenting the first one of the storage spaces to the user; and
program instructions for updating the first one of the storage spaces according to ~~couple with the first wireless device to carry out~~ a requested operation for remotely access to the first one of the storage spaces in response to the user from the first wireless device performed performing the operation,
wherein said operation comprises creating from the first wireless device a folder structure of a plurality of folders in the first one of the storage spaces, and ~~said operation further~~

comprises to delete or move or copy or rename a first one of the folders in the folder structure, wherein each of the folders being configured used by the wireless device for storing a data object therein or retrieving a data object therefrom.

43. (Currently Amended) The server as recited in claim 42, wherein said storing a data object includes to download a file from a remote server across a network into the first one of the storage spaces through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device performed the operation for downloading the file.
44. (Currently Amended) The server as recited in claim 43, wherein said downloading a file comprises: the first wireless device obtaining download information for the file from the remote server, transmitting the cached download information to the server; and causing the server in accordance with the downloading information to store the file from the remote server into the first one of the storage spaces.
45. (Currently Amended) The server as recited in claim 42, wherein said data object, being stored into or retrieved from the first one of the storage spaces, further comprises a message, or a multimedia data of video, digital music or photo picture.
46. (Currently Amended) The server as recited in claim 42, wherein said operation further comprises: from the first wireless device to delete, move, copy or rename a data object of a file in the folder structure.
47. (Previously Presented) The server as recited in claim 42 wherein said storage spaces further are configured among a plurality of storage devices.
48. (Previously Presented) The server as recited in claim 43, wherein said download information for the file further includes at least the name of the file and the internet protocol ("IP") address of the remote server.

49. (Currently Amended) The server as recited in claim 42, wherein the program instructions ~~code~~ further causes the server to: allocate ~~assign~~ exclusively a second one of the storage spaces of a predefined capacity to a user of a second wireless device from which the user allowed to perform operation for remotely access to the second one of the storage spaces.

50. (Previously Presented) the server as recited in claim 42, wherein said operation further comprises: from the first wireless device to create a folder in the folder structure.

Remark

The Office Action mailed on 09/18/2015 has been carefully considered. Claims 11-30 are previously pending and all pending claims stand rejected. The claims are amended in response to the office action for more directly pointing to the patentable limitation of instant application. Applicant respectfully requests reconsideration of the instant application in light of the amendments above and the remarks made below:

1: Request To Enter Domestic Benefit For Instant Application:

Applicant requests to enter the date of 12/04/2003 as priority date for instant application because a request for instant application as a continuation application of 10/726,897 was submitted on filing date of 09/25/2013 and an ADS filed on 10/29 which is earlier than the patent issuing date of 12/10/2013 for application 10/726,897 with Patent No. 8606880, thus this is a valid continuation application for 10/726,897. Nevertheless, such priority date has not been entered for some reasons. Attached is a substitute (new) application data sheet (ADS) which could facilitate the correction for the domestic priority date for instant application in compliant to 37 CFR 1.76 (c)(1) (recited in part and emphasis added):

“Correcting and updating an application data sheet. (1) Information in a previously submitted application data sheet, under 1.63, 1.64 or 1.67, or otherwise of record, may be corrected or updated until payment of the issue fee by a new application data sheet providing corrected or updated information.”

Applicant very appreciates office action to enter the corrected domestic benefit of priority date as 12/04/2003..

2: Regarding the Specification:

Applicant appreciates the office action pointes out issues related to the specification of instant application. The specification including the abstract is amended without introducing any new matter as followings:

a) A substitute Abstract is enclosed to overcome the issue pointed out in section 2 of the office action.

b) Corrected a problem in language of “depending on the implementation without limits”, which pointed out by the office action as being a new matter in paragraph [023].

c) the paragraph [002] is amended according to the office action so that it is much clear now.

d) Corrected the problems of the non-clean languages in the paragraph [004] pointed out be the office action, and the related to paragraph [003], [005], and [006] are cleaned for readily reading and understanding.

Thus, a new substitute specification with corrections to numerous informality errors is enclosed while a markup version of the substitute specification is also enclosed. Applicant invites examiner to review the substitute specification and reconsider the acceptance of the substitute specification.

3: Regarding 35 USC §101 Rejection:

Applicant appreciates the office action pointed out the issue of patentability of the claims 31-50 under the 35 USC §101, and would like explain why the amended claims 31-50 represent the patentable subject matter under the 35 USC §101 as followings:

1) Pursuant to MPEP 2106 in respect to 35 USC §101, the rejected claim 31, for example, indeed is recited as a machine (recited in part & emphasis added):

“31. A server..., comprising:
a plurality of storage spaces; and
a non-transitory computer-readable medium comprising program instructions that, executed by the server, causes the server delivering storage service to a plurality of wireless devices; wherein the program instructions comprise:
program instructions for allocating exclusively a first one of the storage spaces to a user of a first wireless device;
program instructions for establishing a communication link for the first wireless device remotely access to the first one of the storage spaces;
program instructions for presenting the first one of the storage spaces to the user on the first wireless device through communication with the first wireless device; and
program instructions for updating first one of the storage spaces according to a requested operation received for remotely access to the first one of the storage spaces in response to the user from the first wireless device performed the operation, wherein said operation comprises storing data into the first one of the storage spaces or retrieving data therefrom, the storing of said data including to download a file from a remote server across a network into the first one of the storage spaces through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device performed the operation for downloading the file.”

The server of claim 31 consists of tangible non-natural occurring elements including at least one network communication medium, storage spaces, and a non-transitory computer-readable medium comprising program code that undoubtedly qualify as the “Machine” in pursuant to the MPEP 2106. .

2) Pursuant to MEMP2106, the “Non-limiting examples of claims that are not directed to one of the statutory categories: ... vi. A computer program per se, *Gottschalk v, Benson*, 409 U.S. at 72, 175 USPQ at 676-77” .

Applicant would like to point out that in the case of *Gottschalk v, Benson*, 409 U.S. at 72, 175 USPQ at 676-77, the subject matter involving a pure mathematic calculation of an algorithm without relating to a concrete application, therefore, the claim in the case of *Gottschalk v, Benson* fell within the laws of nature exclusion and directed to an abstract idea of mathematical relationship/formulae. Thus, the claim directs to “a computer program per se” which is indefinite and non-statutory.

On the other hand, the illustrated claim 31 has demonstrated a special computer (a server) being programmed by the program code to deliver, by using a plurality of storage spaces, a specific application of storage service to wireless devices. The storage service is transformative, for example, a first one of the storage spaces is displayed on a first wireless device, and is used for storing data. The storing of the data includes storing a file being downloaded from a remote server into the first one of the storage spaces through using download information for the file cached in the first wireless device in response to the user from the first wireless device performed the operation for downloading the file.

Thus, the claim 31 does not direct to an abstract idea of fundamental economic practices as *Bilski v. Kappos* 561 US.593 (2010), *Alice Corp. v CLS Bank* 573 US, 134 S. Ct. 2347 (2014), certain method of organizing human activity, ideas themselves (standing alone) as *Ex Parte Mitchell*, 2009 WL, 460662 (BPAI Feb. 23, 2009, or mathematical relationship/formulae. Therefore, the claim 31 deemed to be statutory.

3) In addition, pursuant to “*In re Bernhart (Bernhart)*, 417 F.2d at 1400, 163 U.S.P.Q. at 616.), the court stated that a general-purpose digital computer executing a program was deemed to become a special purpose computer.”. Similarly, pursuant to MPEP2106, (1), in *In re Alappat (Alappat)*, 33 F.3d at 1545, 31 U.S.P.Q.2d at 1558.), a recent en banc decision from the

Federal Circuit, the majority's opinion, though in dicta, stated that "a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software."

Because the program code of the claim 31, which is executed by the server to perform the particular function of the storage service that turns the general purpose computer of the "server" machine into a specialized machine to perform specialized function. Also, the particular function has clearly lead to an useful application as discussed above. Therefore, the process generated by the program code being executed by the server machine of the claim 31 is statutory. This means that the server machine itself programmed by the process/program code also is statutory.

Thus, applicant would like conclude that the claims 31-50 are statutory, and a request for withdrawing the 35 USC §101 rejection is respectively submitted.

4: Regarding Double Patenting:

Applicant will file terminal disclaimer related to patent No. 8,606,880, patent No. 8,868,690 and 8,856,195 to fix the double patenting issue.

5. Regarding The 35 USC §102 Rejections:

The Office Action of 08/29/2014 rejected claims 11-30 under 35 U.S.C. 102(b) as being anticipated by Krstulich (US 2006/0168123).

After a careful reviewing office action, it is found that the priority date of Krstulich is 12/14/2004 while the priority date of instant application shall be 12/03/2003, which is one year earlier that Krstulich. Thus, actually Krstulich is anticipated by instant application instead of instant application being anticipated by Krtsulich.

Therefore, a request for withdrawing the 35 U.S.C §102 rejection and a request for allowance of the amended claims 31 – 50 are respectively submitted.

6: Summary:

Applicant invites Examiner to review the remark and the amendment to the claims made above for further reconsideration of the allowance of the amended claims.

Applicant also appreciates the Office Action for carefully examining instant application and if a telephone conference would facilitate the advance the examination 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: 10/21/2015

/Shengtai tsao/

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Abstract

Traditionally, wireless device, such as cell phone or personal data assistant device (PDA), has relatively smaller storage capacity. Therefore, it is quite often that a user of the wireless device has difficulty to find more storage space for storing ever increased personal data, such as storing multiple Gig bytes of multimedia data including digital video, music, or photo picture etc.. Instant application disclosed a system and method for a storage system providing storage service to the wireless device for the wireless device remotely storing personal data into an external storage space allocated exclusively to a user of the wireless device by the storage system.

<<<<The markup version of the amended specification>>>>

The Use of Method and Apparatus For Wireless Device Access To Devices' External Storage

**By: ~~Sheng (Ted) Tai Tsao~~
11/19/2003**

Field of the Invention

Cross Reference to Prior Application

[001] This invention is a continuation application of the US patent application No. 10/726,897 filed on 12/04/2003 and now a US patent No. 8606880. The application No. 10/726,897 had referenced ~~is the continuation of the previous invention, a prior application number 60/401, 238 of "Concurrent Web Based Multi-task Support for Control Management System" filed on 08/06/2002 and converted to US patent application No. 10/713,904 filed on 07/22/2003 and now is an US patent No. 7418702. 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, and had also referenced an prior application number 60/402,626 of "IP Based Distributed Virtual SAN" filed on 08/12/2002 and converted to application 10/713,905 file on 07/22/2003 and now is an US patent No. 7379990. All mentioned prior applications are herein incorporated by reference in their entirety for all purpose, to transmit data in wireless environment.~~

Field of the Invention

[002] This invention focuses on a wireless device accessing and using external storage space provided by a server.

Background Information

a)

[003] Terminology:

Storage system always is a critical part of a computing system regardless of the computing system is a server, a laptop or desktop computer, or a wireless device such as cell phone or personal data assistant device (“PDA”). The storage system can be categorized as internal storage or external storage system. The terminologies described in next few sections reflect the scope and are a part of present invention.

[004] The Internal Storage of a System:

The internal storages of a computing system include those storage media such as hard disk drives, memory sticks, and memory etc. that are internally [[is]] connected [[to a]] in the computing system directly through system bus or a few inches of cable[.], Therefore, the storage media actually are internal is-a-components of [[a]] the computing system in a same enclosure.

[005] The External Storage of a System:

The external storages of a computing system are those storage media that are [[is]] not the internal [[a]] components of [[a]] the computing system in a same enclosure. Therefore, they it has the storage media of the computing system have to be accessed ~~connected~~ through [[a]] longer cable, such as through Ethernet controller with longer cable for IP based storage, Fiber channel controller with longer cable for fiber channel storage, or wireless communication media etc.. The storage media of the 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 the a storage system, the storage devices of the storage system usually need[[s]] to be partitioned into small storage volumes. After the partition, each of the volumes can be used [[to]] for establishing a file system[[s]] on top of it. To simplify the discussion, herein, the term of the storage volume[.,] and its corresponding file system, and the term of the storage partition of a storage are often used without differentiation in this invention.

[007] **CCDSVM:**

~~CCDSVM~~ It is an abbreviation for To satisfy the needs for external storage for a larger number of wireless devices, a central controlled distributed scalable virtual machine system (“The CCDSVM”) can be deployed. The CCDSVM allows a control management ~~station~~ system to control a group of computing systems for providing and provide distributed services, including storage service, to client system over the ~~[[in]]~~ Internet, Intranet, and LAN environment.

[008] **ISP & ASP:**

As matter of the fact, today major Internet service provider (ISP) and application service provider (ASP) are all in business of providing various type of storage services to their clients.

➔ [009]

Brief Description Of Figures:

[010] Fig. 1 ~~This~~ illustrates an embodiment of present invention. The Fig. 1 is the same figure as the Fig. 1 of a prior application of the “Concurrent Web Based Multi-task Support for Control Management System” with an exception of renaming a console host as being replaced by a wireless device.

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

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

[013] Fig. 4 ~~This~~ is the same figure as the Fig. 1 of the prior application of “IP Based Distributed Virtual SAN” with an exception that each IP storage server provide provides file system as external storage for each of the wireless

devices instead of ~~provide~~ providing IP based virtual SAN service. Also, each host in the Fig. 1 now actually is a wireless device in the Fig. 4.

e) Assumptions:

[014] Unless specified, the programming languages~~[[,]]~~ and the protocols used by the ~~each~~ software modules, and the computing systems used ~~described in this~~ of present invention are assumed to be the same as described in the previous prior 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 configured on their wireless devices such as cell phone or PDA, which are usually limited to 256MB for the PDA and much less for the cell phone. To effectively solve this problem and let users ~~own~~ possess 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 spaces ~~on~~ provided by a server can be used as the external storage ~~[[for]]~~ of the wireless devices. This technology has been ~~claimed~~ briefly introduced in the previous two prior patent~~[[s]]~~ applications ~~submission by the same author~~.

[018] Now ~~we can~~ let us examine how ~~does~~ can the external storage actually be used by the wireless devices. First, We can let each server unit (e.g. the server 3 of the Fig. 2) partition~~[[s]]~~ its storage system into ~~such way that each~~ volumes, such that each of the volumes will have multiple~~[[-]]~~GB in size. Therefore, ~~each a user from a web browser~~ of each ~~any~~ of the wireless devices can be exclusively ~~be~~ assigned ~~and exclusively~~ for access to a specific storage volume ~~on a~~ in the 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~~ of the server unit can support a total of 1024 users. Further, any data on the wireless device of the user can be transmitted to the assigned storage volumes ~~on a~~ in the 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]] in the a designated server unit through out-band approach (~~shown in Fig. 3~~). Finally, in one embodiment, 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] **Detailed Description of the Drawings**

[021] Referring now to the Fig. 1[[:]], ~~This figure~~ it demonstrates an example of a the network infrastructure ~~connection between~~ which includes a wireless device and a server,~~s~~ ~~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) in the network infrastructure is built up in such way that ~~the a~~ a user from a web-browser of a wireless device can access and browse any web-site on the Internet, and Intranet.

[022] ~~b) As described in previous patents submission~~ In the Fig. 1, the console support software (5) ~~on~~ of the server (3) can be configured to support web-based multi[[(-)]tasking ~~for~~ while a user[[s]] on ~~web browser (8)~~ of a wireless device (1) using a web browser (8).

Further, the user ~~on the web browser (8)~~ of the wireless device is facilitated ~~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[[(/)] or directories etc, on the an assigned storage volume [[of]] controlled by the server (3).

~~c) As described in previous patents submission~~ In addition, the other software modules (9) of the wireless device (1) is also configured capable of to send data to or receive data from the other service modules (7) of the server (3) via communication link (2) through a suitable IP

or non-IP based protocol. The data ~~file~~ being sent or received could be a digital photo picture, a message [[etc.]] without limits.

[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.~~ without limits.

[024] ~~e) As described in previous patents submission~~ Besides, the web-browser (8) of the wireless device (1) can be any suitable software, which 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 the~~ detailed storage system (10) of a server 3, where its storage volumes can be allocated assigned to multiple wireless devices as followings: 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), for example, 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 a user of each of the wireless devices can be assigned with a storage volume of having a desired size, which can be best supported by so that the server 3 can support for maximum numbers of the wireless devices.

[028] ~~e) As described in previous patents submission~~ In addition, the storage connection media could be any kind[[s]] , 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] The Fig. 3: ~~This figure has demonstrated how that~~ a user from a web-browser (8) on a wireless devices device (1) can download data from a known web-site (15+2) to his/her

assigned external storage (10) ~~of on the server (3)~~. The dash-lined path (a) represents a communication ~~channel~~ link between the wireless device (1) and ~~any a remote download web-site (1512), which that provides the downloading contents for web-download.~~ The dash-lined path (b) represents a communication ~~channel~~ link between the wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication link ~~channel~~ between the server 3 wireless devices (1) and the remote web-server (1512), ~~which provides download contents.~~

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

[032] ~~4=~~ **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 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 the console host (12 ~~of Fig. 2~~). ~~This~~ The storage information ~~including the~~ includes each storage device's name, storage and total size etc. without limits. Second, based on the received storage information the administration staff on the console host (12 ~~of Fig. 2~~), for example, can use a web-console (13 ~~of Fig. 2~~) to partition each storage device fill and ~~[[to]]~~ send the storage partition information for the storage device

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 the 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 ~~by, which divides~~ dividing 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 (11) 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 ~~and exported~~ to a user of 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)

4) With the support of the console support software modules (5 of Fig. 2) of the server system (3 of Fig. 2) by following similar steps of said partitioning storage, ~~the~~ a user ~~on web-browser (8 of Fig. 2)~~ of the wireless device (1 of Fig. 2) can use a web-browser 8 illustrated in Fig. 2 to setup the folder[[/]] or directory structure on the file system of his/her an 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 use the web-browser 8 performing all data management operations such as delete, copy, move, or rename etc. for file or folder on that file system.

[037] In order to support such data management ~~[[on]]~~ over the external storage (10 of Fig. 2) ~~from web-browser (8 of Fig. 2) of~~ assigned to the user of the wireless device (1 of Fig. 2) by using the web-browser 8, 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) to present the assigned storage to a user as described before. Therefore, the user from the web-browser (8 of Fig. 2) of the wireless device (1 of Fig. 2) can choose a desired data management operation~~[[s]]~~ and perform an operation causing the send operation information to be sent to the console support software modules (5 of Fig. 2) of the

server system (3 of Fig. 2). ~~These~~ The mentioned operation[s] includes establishing folder[[]] or directory[[],]; copying, moving, or reaming data file etc. for the folder directory. 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 requested operations on the assigned file system of an 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 assigned external storage volume (11 10 of Fig. 2) of a in 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 storage volume (11 of Fig. 2) on server (3 of Fig. 2) for the wireless device (1). 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] Now, referring to the Fig. 3, If a user of the wireless device (1 of Fig. 3) ~~user wants to~~ download a data from a remote web server (1512 of Fig. 3) into the assigned file system on the assigned storage volume (11 of Fig. 3) [[of]] in the external storage system (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 access to~~ a remote ~~download~~ web server site (1512 of Fig. 3) and to obtain the information of the data for the downloading via the path (a) of the Fig. 3. For example, [[to]] the user get access to a web-page[[],] which contains the data name for the downloading and also contains IP address of the remote web site.

[042] 2) The other software modules (9 of Fig. 3) of a ~~specific~~ the wireless device (1 of Fig. 3) ~~obtains~~ obtain the downloading information for the data, 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~~ access to the download web site (1512 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 the path (b) of the 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~~ download the web-site (1512 of Fig. 3) via the path (c) of the Fig. 3 based on download information obtained. ~~It then~~ and then receives the downloading ~~information~~ data from the web server of ~~download~~ the web-site (1512 of Fig. 3).

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

[046] **Retrieve data from ~~external~~ assigned storage volume ~~of~~ for the user of the wireless device;**

[047] 1) If a web-browser (8) on a wireless device 1 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 used~~ use the browser to retrieve and play ~~these~~ multimedia data file such as video or music stored in the assigned wireless device's external storage volume (11 ~~10~~ of Fig. 2), ~~which actually~~ located on ~~[[a]]~~ the server (3 of Fig. 2).

[048] 2) ~~In another embodiment, if there is~~ in respect to the user's needs, the other software module (9 of Fig. 2) of the wireless device (1 of Fig. 2) also can retrieve data file from the ~~assigned~~ file system of the assigned 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 the CCDSVM is desirable, which has been described in ~~previous~~ prior patent~~[[s]]~~ applications ~~submission~~. With the CCDSVM the control management system ~~station~~ can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

<<<<A CLEAN VERSION OF THE AMENDED SPECIFICATION>>>>

Method and Apparatus For Wireless Device Access To External Storage**Cross Reference to Prior Application**

[001] This invention is a continuation application of the US patent application No. 10/726,897 filed on 12/04/2003 and now a US patent No. 8606880. The application No. 10/726,897 had referenced to a prior application number 60/401, 238 of “Concurrent Web Based Multi-task Support for Control Management System” filed on 08/06/2002 and converted to US patent application No.10/713,904 filed on 7/22/2003 and now is an US patent No. 7418702, and had also referenced to an prior application number 60/402,626 of “IP Based Distributed Virtual SAN” filed on 08/12/2002 and converted to US patent application No. 10/713,905 filed on 7/22/2003 and now is an US patent No. 7379990. All mentioned prior applications are herein incorporated by reference in their entirety for all purpose.

Field of the Invention

[002] This invention focuses on a wireless device accessing and using external storage space provided by a server.

Background Information

[003] Storage system always is a critical part of a computing system regardless of the computing system is a server, a laptop or desktop computer, or a wireless device such as cell phone or personal data assistant device (“PDA”). The storage system can be categorized as internal storage or external storage system.

[004] The internal storages of a computing system include those storage media such as hard disk drives, memory sticks, and memory etc. that are internally connected in the computing system directly through system bus or a few inches of cable, Therefore, the storage media actually are internal components of the computing system in a same enclosure.

[005] The external storage of a computing system are those storage media that are not the internal components of the computing system in a same enclosure. Therefore, the storage media have to be accessed through longer cable, such as through Ethernet controller with longer cable for IP based storage, Fiber channel cable for fiber channel storage, or wireless communication media etc.. The storage media of the 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] To effectively use a storage system, the storage devices of the storage system usually need to be partitioned with storage volumes. After the partition, each of the volumes can be used for establishing a file system on top of it. To simplify the discussion, herein, the term of the storage volume and its corresponding file system, and the storage partition are often used without differentiation.

[007] To satisfy the needs for external storage for a larger number of wireless devices on the Internet, a central controlled distributed scalable virtual machine (“CCDSVM”) of present invention can be deployed. The CCDSVM allows a control management system to control a group of computing systems for providing distributed services, including storage service, to client systems over the Internet, Intranet, and LAN environment.

[008] As matter of the fact, today major Internet service provider (ISP) and application service provider (ASP) are all in business of providing various type of storage services to their clients.

[009] **Brief Description Of Figures:**

[010] Fig. 1 illustrates an embodiment of the instant application. The Fig. 1 is the same as the Fig. 1 of a prior application of “Concurrent Web Based Multi-task Support for Control Management System” with an exception of a console host being replaced by a wireless device.

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

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

[013] Fig. 4 is the same figure as the Fig. 1 of a prior application of "IP Based Distributed Virtual SAN" with an exception that each IP storage server provides file system as external storage for each of the wireless devices instead of providing IP based virtual SAN service. Also, each host in the Fig. 1 now actually is a wireless device in the Fig. 4.

[014] Unless specified, the programming languages and the protocols used by the software modules and the computing systems used of present invention are assumed to be the same as described in the prior 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, users commonly face a problem of lack of storage capacity configured on their wireless devices such as cell phone or PDA, which are usually limited to 256MB for the PDA and much less for the cell phone. To effectively solve this problem and let users possess 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 spaces provided by a server can be used as the external storage for the wireless devices. This technology has been briefly introduced in the prior patent applications.

[018] Now let us examine how can the external storage actually be used by the wireless devices. First, facilitate each server unit (e.g. the server 3 of the Fig. 2) partition its storage system into volumes, such that each of the volumes will have multiple GB in size. Therefore, a user of each of the wireless devices can be exclusively assigned for access to a specific storage volume in the server unit. 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 of the server unit can support a total of 1024 users. Further, any data on the wireless device of the user can be transmitted to an assigned storage volume in the server unit. In addition, the user of the wireless device also can download multimedia data from an ISP or ASP to the assigned storage volume in the server unit through out-band approach shown in Fig. 3. Finally, in one embodiment, 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] **Detailed Description of the Drawings**

[021] Referring now to the Fig. 1, it demonstrates an example of a network infrastructure which includes 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) in the network infrastructure is built up in such way that a user from a web browser on a wireless device can access and browse any web-site on the Internet, and Intranet.

[022] In the Fig. 1, the console support software (5) of the server (3) can be configured to support web-based multitasking while a user on a wireless device (1) using a web browser (8). Further, the user of the wireless device is facilitated to perform creating structured layered file directories or folders, and perform data management operations, such as delete,

move, copy, rename for data files or folders or directories etc. on an assigned storage volume controlled by the server (3).

In addition, the other software modules (9) of the wireless device (1) is also configured capable of to send data to or receive data from the other service modules (7) of the server (3) via communication link (2) through a suitable IP or non-IP based protocol. The data being sent or received could be a digital photo picture, a message without limits.

[023] 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 without limits.

[024] Besides, the web-browser (8) of the wireless device (1) can be any suitable software, which 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 has demonstrated the detailed storage system (10) of a server 3, where its storage volumes can be allocated to multiple wireless devices as followings: First, the storage system (10) of the server (3) can be partitioned into multiple storage volumes (11), for example, 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 a user of each of the wireless devices can be assigned with a storage volume having a desired size, so that the server 3 can support maximum numbers of the wireless devices.

[028] In addition, the storage connection media could be any kind, 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] The 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 assigned external storage (10) on the server (3). The dash-lined path (a) represents a communication link between the wireless device (1) and a remote web-site (15) that provides downloading contents. The dash-lined path (b) represents a communication link between the wireless devices (1) and the storage server (3). The dash-lined path (c) represents a communication link 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) using the external storage system (10) of the server (3) for effectively resolving the storage limitation problem for the wireless devices (1).

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

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

[034] In order to support storage partition, first the console support software (5) of the server (3) must send storage information of the server (3) to the web-console (13) of the console host (12). The storage information includes each storage device's name and total size etc. without limits. Second, based on the received storage information, the administration staff on the console host (12), for example, can use a web-console (13) to partition each storage device and send the storage partition information for the storage device to the console support software (5) of the server (3). The storage partition information includes the number of the partitions (volumes) and the size of each partition (volume). Third, upon receiving the

storage partition information from the web-console (13) of the console host (12), the console support software (5) of the server (3) performs the actual storage partition by dividing 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 (11) together with its corresponding file system on the storage system (10) of the server (3) needs to be exclusively assigned to a user of a specific wireless device (1) by the console support software (5) of the server (3).

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

With the support of the console support software modules (5) of the server (3) by following similar steps of said partitioning storage, the user of the wireless device (1) can utilize a web-browser 8 illustrated in Fig. 2 to setup folder or directory structure on the file system of his/her an assigned external storage volume (11). In addition, the user of the wireless device (1) can use the web-browser 8 performing all data management operations such as delete, copy, move, or rename for file or folder on the file system.

[037] In order to support such data management over the external storage (10) assigned to the user of the wireless device (1) by using the web-browser 8, first the console support software modules (5) of the server (3) must communicate with the web-browser (8) of the wireless device (1) to present the assigned storage to a user as described before. Therefore, the user from the web-browser (8) of the wireless device (1) can choose a desired data management operation and perform an operation causing the operation information to be sent to the console support software modules (5) of the server (3). The mentioned operation includes establishing folder or directory; copying, moving, or reaming data file etc. for the folder or directory. Second, upon receiving the data management operation, the console support software modules (5) of the server (3) actually performs these requested operations on the assigned file system of an assigned external storage volume (11) on the server (3).

[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 assigned storage volume (11) in the server (3), the other software modules (9) of the wireless device (1) need to send these data to the other service modules (7) of the server (3) via communication link between them. Upon receiving the data, the other service modules (7) of the server (3) write these data to the file system of the assigned storage volume (11) on the server 3 for the wireless device 1. 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:

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

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

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

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

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

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

[046] Retrieve data from assigned storage volume for the user of the wireless device:

[047] 1) If a web-browser (8) on a wireless device 1 has embedded video or music functionality, a user of the wireless device (1) can use the browser to retrieve and play multimedia data file such as video or music stored in the assigned storage volume (11) located on the server (3).

[048] 2) In another embodiment, in respect to the user's needs, the other software module (9) of the wireless device (1) also can retrieve data file from the file system of the assigned storage volume (11) on the server (3).

[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 the CCDSVM is desirable, which has been described in prior patent applications. With the CCDSVM the control management system can control larger number of storage servers to provide external storage for a huge number of the wireless devices.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	
		Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

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Application Information:

Title of the Invention	Method and System For concurrent Web Based Multitasking Support		
Attorney Docket Number		Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
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Prior Application Status	Patented		<input type="button" value="Remove"/>		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
		10726897	2003-12-04	8606880	2013-12-10
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This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention	Method and System For concurrent Web Based Multitasking Support	

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This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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.**

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 the Freedom of Information Act requires disclosure of these records.
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 inspections 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.

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0		
Practitioner Docket No.:	Application No.:	Filing Date:
	14/036,744	09/25/2013
First Named Inventor:	Title:	
Sheng Tai (Ted) Tsao	Method and Apparatus For Access and Managing a Multi-layered Virtual Server	
<p>APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.</p> <ol style="list-style-type: none"> 1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (<i>e.g.</i>, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c). 2. The above-identified application contains an outstanding final rejection. 3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect. 4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection. 5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response. 6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web). 7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, <i>e.g.</i>, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.] 8. By filing this certification and request, applicant acknowledges the following: <ul style="list-style-type: none"> • Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0. • The examiner will verify that the AFCP 2.0 submission is compliant, <i>i.e.</i>, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions: <ul style="list-style-type: none"> ○ The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, <i>e.g.</i>, by mailing an advisory action. ○ If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview. <ul style="list-style-type: none"> ▪ The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate. ▪ If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116. 		
Signature	Date	
/shegtai tsao/	10/21/2015	
Name (Print/Typed)	Practitioner Registration No.	
Sheng Tai (Ted) Tsao	77501	
<p>Note: This form must be signed in accordance 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*.</p>		
<input checked="" type="checkbox"/> * Total of <u>1</u> forms are submitted.		

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.
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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:	23855224
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Method and Apparatus For Wireless Devices Access To External Storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	21-OCT-2015
Filing Date:	25-SEP-2013
Time Stamp:	18:39:58
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response After Final Action	744claims.pdf	54118 <small>de4d972bdf8eaea892769d9e1508dd434f7a861c</small>	no	6

Warnings:

Information:

2	Applicant Arguments/Remarks Made in an Amendment	744-Remark.pdf	51300 c54c0ba2f66ae50c372065116685a82e2d2fa92d	no	5
Warnings:					
Information:					
3	Abstract	Abstract.pdf	16740 683e6398e7d4f44542ea1e4d22b6b472273cb9f6	no	1
Warnings:					
Information:					
4	Specification	744spec-markup.pdf	96670 cbef26e421c35f0ded9e380de2601b31aac5b896	no	11
Warnings:					
Information:					
5	Specification	744spec-clean.pdf	57469 35b7e612400abfaa94ecf3b78924106778972129	no	9
Warnings:					
Information:					
6	Application Data Sheet	744-ADS.pdf	1509559 f806e21b323ab62c53a16e7fb3a2244265007b20	no	6
Warnings:					
Information:					
7	After Final Consideration Program Request	744-Req-afterFINAL20.pdf	226556 bb5967386c9125f1eab17ea2d75ab25603fea680	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			2012412		

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.

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 14/036,744	Filing Date 09/25/2013	<input type="checkbox"/> To be Mailed
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ENTITY: LARGE SMALL MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =	
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =	
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	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).			
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT	10/21/2015	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total <small>(37 CFR 1.16(i))</small>	* 20	Minus	** 20	= 0	X \$40 = 0
	Independent <small>(37 CFR 1.16(h))</small>	* 2	Minus	***3	= 0	X \$210 = 0
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					TOTAL ADD'L FEE	0

	(Column 1)	(Column 2)	(Column 3)	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR			
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	X \$ =
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	X \$ =
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>					
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>						
					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
/DALE HALL/

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.

Electronic Petition Request	TERMINAL DISCLAIMER TO OBIVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT
Application Number	14036744
Filing Date	25-Sep-2013
First Named Inventor	Sheng Tsao
Attorney Docket Number	
Title of Invention	Method and Apparatus For Wireless Devices Access To External Storage

- Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action
- This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
Sheng Tai Tsao	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

8856195
8868690
8606880

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:

- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.

Applicant claims the following fee status:

Small Entity

Micro Entity

Regular Undiscounted

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 Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number _____

A sole inventor

A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application

A joint inventor; all of whom are signing this request

Signature	/shengtai tsao/
Name	Sheng Tai (Ted) Tsao

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	14036744			
Filing Date:	25-Sep-2013			
Title of Invention:	Method and Apparatus For Wireless Devices Access To External Storage			
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao			
Filer:	Sheng Tai Tsao			
Attorney Docket Number:				
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Statutory or Terminal Disclaimer	1814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				160

Doc Code: DISQ.E.FILE

Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 14036744

Filing Date: 25-Sep-2013

Applicant/Patent under Reexamination: Tsao et al.

Electronic Terminal Disclaimer filed on November 3, 2015

APPROVED

This patent is subject to a terminal disclaimer

DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	23978419
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Method and Apparatus For Wireless Devices Access To External Storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	03-NOV-2015
Filing Date:	25-SEP-2013
Time Stamp:	18:34:59
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$160
RAM confirmation Number	4653
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Electronic Terminal Disclaimer-Filed	eTerminal-Disclaimer.pdf	33664	no	2
			edd0753840e6089b84fbbb8e750b9726523c24b2		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	29839	no	2
			98f81f7ea2a7a37fbd136a0528f78dc08a42120f		

Warnings:

Information:

Total Files Size (in bytes):	63503
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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.



NOTICE OF ALLOWANCE AND FEE(S) DUE

77501 7590 11/18/2015
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

EXAMINER

ELMORE, REBA I

ART UNIT PAPER NUMBER

2131

DATE MAILED: 11/18/2015

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

14/036,744

09/25/2013

Sheng Tai (Ted) Tsao

ATTORNEY DOCKET NO.

CONFIRMATION NO.

5504

TITLE OF INVENTION: Method and Apparatus For Wireless Devices Access To External Storage

Table with 7 columns: APPLN. TYPE, ENTITY STATUS, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE

nonprovisional

SMALL

\$480

\$0

\$0

\$480

02/18/2016

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)

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.

77501 7590 11/18/2015
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.

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/036,744	09/25/2013	Sheng Tai (Ted) Tsao		5504

TITLE OF INVENTION: Method and Apparatus For Wireless Devices Access To External Storage

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	02/18/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
ELMORE, REBA I	2131	711-171000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). <input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. <input type="checkbox"/> "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, _____ 1 (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. _____ 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: <input type="checkbox"/> Issue Fee <input type="checkbox"/> Publication Fee (No small entity discount permitted) <input type="checkbox"/> Advance Order - # of Copies _____	4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above) <input type="checkbox"/> A check is enclosed. <input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. <input type="checkbox"/> The director is hereby authorized to charge the required fee(s), any deficiency, or credits 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

Applicant asserting small entity status. See 37 CFR 1.27

Applicant changing to regular undiscounted fee status.

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

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.

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

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



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

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

77501 7590
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

11/18/2015

EXAMINER

ELMORE, REBA I

ART UNIT PAPER NUMBER

2131

DATE MAILED: 11/18/2015

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B 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.

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.

Applicant-Initiated Interview Summary	Application No. 14/036,744	Applicant(s) TSAO, SHENG TAI (TED)	
	Examiner REBA I. ELMORE	Art Unit 2131	

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

- (1) REBA I. ELMORE. (3) _____.
- (2) Sheng Tai (Ted) Tsao. (4) _____.

Date of Interview: 06 October 2015.

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: 31-50.

Identification of prior art discussed: Krstulich (US 2006/0168123).

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...)

The priority of the application was discussed. The examiner will forward the application to a Quality Assurance Specialist for consideration of the effective filing date of the present application. Also discussed was the use of email by the examiner as a way of communicating information about the present application. The double patenting rejections were discussed with the Applicant responding that a terminal disclaimer would be filed to overcome these rejections. Also discussed was the rejection under 35 USC 101 as the claims being directed to non-statutory (computer program per se) subject matter.

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the 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

/REBA I. ELMORE/
Primary Examiner, Art Unit 2131

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Notice of Allowability	Application No. 14/036,744	Applicant(s) TSAO, SHENG TAI (TED)	
	Examiner REBA I. ELMORE	Art Unit 2131	AIA (First Inventor to File) Status Yes

-- 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 papers filed November 3, 2015.
 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 31-50. 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. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Examiner's Amendment/Comment |
| 2. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 6. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. <input type="checkbox"/> Other _____. |
| 4. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>filed here with</u> . | |

/REBA I. ELMORE/
Primary Examiner
Art Unit: 2131

Applicant-Initiated Interview Summary	Application No. 14/036,744	Applicant(s) TSAO, SHENG TAI (TED)	
	Examiner REBA I. ELMORE	Art Unit 2131	

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

- (1) REBA I. ELMORE. (3) _____.
- (2) Sheng Tai (Ted) Tsao. (4) _____.

Date of Interview: 06 October 2015.

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: 31-50.

Identification of prior art discussed: Krstulich (US 2006/0168123).

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/REBA I. ELMORE/
Primary Examiner, Art Unit 2131

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- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
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- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.
Application Number: 14/036,744 Confirmation No. 5504
Filing Date: 09/25/2013
Title: Method and System For Expand Storage Space For Wireless Devices
Examiner: Reba I. Elmore Phone: 571-272-4192
Art Unit: 2131

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

Response to Final Office Action

Dear Commissioner:

This communication responds to the final office action mailed on 09/18/2015. In the response, please find:

- 1) A new application data sheet (ADS) for correcting the ADS filed on 10/29/2013 for establishing the benefit of domestic priority date of 12/04/2003 in compliant to 37 CFR 1.76 (c)(1). The priority date is claimed in paragraph [001] of the specification filed on filing date of 10/25/2013 as a continuation application of 10/726,897 before the 10/726,897 being patented.
- 2) A substitute specification, a markup copy of the substitute specification, and a substitute abstract that correct informalities found by the final office. There is no new matter being introduced. The added sentence in [041] regarding the download information including file name and IP address of a remote server is disclosed in the claim 8 of parent 10/726,897.
- 3) Claim amendments start on page 2 of this paper in response to the office action. The major change in claims 31 including to add “presenting the first one of the storage spaces to the user on the first wireless device through communication with the first wireless device” which is disclosed in page 4 lines 30 – 36 and in claims 6 of parent 10/726,897.
- 4) Remarks for overcoming the office rejections & A request for participating pilot AFCP2.0.

Respectively Submitted,
10/21/2015

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

EAST Search History

EAST Search History (Prior Art)


Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	("20060168123").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 11:04
L2	3	("20150089181").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 11:04
L3	16	((("8606880") or ("7418702") or ("7379990"))).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 11:58
L4	102	CCDSVM or (central adj control adj distributed adj scalable adj virtual adj machine)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:19
L5	3	4 same (wireless adj device)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:19
L6	42	4 same wireless	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:20
L7	0	6 same exclusiv\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:21
L8	25	6 and (exclusiv\$4 with (storage or space or memory))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:21
L9	9	8 and download\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:22
L10	79	4 and wireless and browser\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:46
L11	79	4 and wireless and browser\$3 and web	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:46
L12	28	11 and download\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:47

L13	18	4 same exclusiv\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:57
L14	28	4 and (exclusiv\$4 with (memory or storage))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 12:58
L15	48	(web with browser) same (storage or memory) same exclusiv\$3 same (communication or link)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:11
L16	1	15 same wireless same remot\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:11
L17	3	15 same wireless	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:13
L18	17	15 same remot\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:15
L19	2463	(711/111).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:38
L20	8802	(711/114).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:38
L21	3708	(711/147).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:38
L22	2051	(711/171).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:38
L23	20831	(709/219).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:38
L24	16668	(709/226).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:38
L25	316	(707/795).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:38
L26	5144	(707/802).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:38
L27	3646	G06F3/0631.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2015/10/30 13:39

			IBM_TDB			
L28	3296	G06F3/0604.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:39
L29	14775	G06F3/067.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/10/30 13:39

10/30/2015 1:39:41 PM

C:\Users\relmore\Documents\EAST\Workspaces\Default EAST Workspace (Flat Panel).wsp

Search Notes 	Application/Control No. 14036744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)
	Examiner REBA I ELMORE	Art Unit 2131

CPC- SEARCHED		
Symbol	Date	Examiner
G06F 3/067	6/14/2015	RIE
G06F 3/0604	6/14/2015	RIE
G06F 3/0631	6/14/2015	RIE
G06F 2003/0697	6/14/2015	RIE
Search Updated	9/14/2015	RIE
Search Updated	11/9/2015	RIE

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
711	111	6/14/2015	RIE
	114	6/14/2015	RIE
	147	6/14/2015	RIE
	171	6/14/2015	RIE
709	219	6/14/2015	RIE
	226	6/14/2015	RIE
707	795	6/14/2015	RIE
	802	6/14/2015	RIE
Search	Updated	9/14/2015	RIE
Search	Updated	11/9/2015	RIE


SEARCH NOTES		
Search Notes	Date	Examiner
PLUS Search	6/14/2015	RIE
PALM Inventor Search	6/14/2015	RIE
EAST Text Search	6/14/2015	RIE
EAST Text Search Updated	9/14/2015	RIE
EAST Text Search Updated	11/9/2015	RIE

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INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
Search	History	11/9/2015	RIE


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Issue Classification 	Application/Control No. 14036744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)	
	Examiner REBA I ELMORE	Art Unit 2131	

CPC						
Symbol					Type	Version
G06F		3		0631	F	2013-01-01
G06F		3		0604	I	2013-01-01
G06F		3		067	I	2013-01-01
G06F		2003		0697	A	2013-01-01


CPC Combination Sets							
Symbol				Type	Set	Ranking	Version

NONE		Total Claims Allowed:	
		20	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/REBA I ELMORE/ Primary Examiner.Art Unit 2131	11/9/2015	1	1
(Primary Examiner)	(Date)		

Issue Classification 	Application/Control No. 14036744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)
	Examiner REBA I ELMORE	Art Unit 2131

US ORIGINAL CLASSIFICATION					INTERNATIONAL CLASSIFICATION								
CLASS		SUBCLASS			CLAIMED				NON-CLAIMED				
711		171			G	0	6	F	13 / 00 (2006.01.01)				
CROSS REFERENCE(S)													
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)												
711	111	114	147										
709	219	226											
707	795	802											

NONE		Total Claims Allowed:	
		20	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/REBA I ELMORE/ Primary Examiner.Art Unit 2131	11/9/2015	1	1
(Primary Examiner)	(Date)		

Issue Classification 	Application/Control No. 14036744	Applicant(s)/Patent Under Reexamination TSAO, SHENG TAI (TED)
	Examiner REBA I ELMORE	Art Unit 2131

<input checked="" type="checkbox"/> Claims renumbered in the same order as presented by applicant																<input type="checkbox"/> CPA		<input checked="" type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original						
///	1	///	17	3	33	20	49														
///	2	///	18	4	34	15	50														
///	3	///	19	5	35																
///	4	///	20	6	36																
///	5	///	21	7	37																
///	6	///	22	8	38																
///	7	///	23	9	39																
///	8	///	24	10	40																
///	9	///	25	11	41																
///	10	///	26	12	42																
///	11	///	27	13	43																
///	12	///	28	14	44																
///	13	///	29	16	45																
///	14	///	30	17	46																
///	15	1	31	18	47																
///	16	2	32	19	48																

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 20	
/REBA I ELMORE/ Primary Examiner.Art Unit 2131 (Primary Examiner) _____ (Date) _____		11/9/2015 (Date)	O.G. Print Claim(s) 1 O.G. Print Figure 1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.
Application Number: 14/036,744 Confirmation No. 5504
Filing Date: 09/25/2013
Title: Method and System For Expand Storage Space For Wireless Devices
Examiner: Reba I. Elmore Phone: 571-272-4192
Art Unit: 2131

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

Rule-312 Amendment For the Allowed Claims

Dear Commissioner:

This communication responds to the allowance of instant application mailed on 11/18/2015.

In the response, please find:

Claim amendments for the claims submitted on 10/21/2015 in compliant with 37CFR 1.132 for correcting the informalities found in the claims. The amendments do not change the patentable subject matters, therefore, a request for entering the amended claims is respectively submitted.

Thanks
11/23//2015

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

AMENDMENT TO THE CLAIMS:

1 – 30 (*Canceled*)

31. (Currently Amended) A server for delivering storage service, comprising:

a plurality of storage spaces; and

a non-transitory computer-readable medium comprising program instructions that, being executed by the server, causes the server delivering the storage service; wherein the program instructions comprise:

program instructions for allocating exclusively a first one of the storage spaces to a user of a first wireless device;

program instructions for establishing a communication link for the first wireless device remotely access to the first one of the storage spaces;

program instructions for presenting the first one of the storage spaces to the user on the first wireless device through communication with the first wireless device; and

program instructions for updating the first one of the storage spaces according to a requested operation for remotely access to the first one of the storage spaces in response to the user from the first wireless device ~~performed~~performing the operation,

wherein said operation comprises storing data into the first one of the storage spaces or retrieving data therefrom,

the storing of said data including to download a file from a remote server across a network into the first one of the storage spaces through utilizing download information for the file cached in the first wireless device in response to the user from the first wireless device ~~performed~~performing the operation for downloading the file.

32. (Previously Presented) The server as recited in claim 31, wherein said downloading a file from a remote server further comprises:

the first wireless device obtaining downloading information for the file from the remote server, transmitting the cached downloading information to the server, and causing the server in accordance with the downloading information to download the file into the first one of the storage spaces.

33. (Previously Presented) The server as recited in claim 31, wherein said storage spaces further are configured among a plurality of storage devices.
34. (Previously Presented) The server as recited in claim 31, wherein the data being stored into or retrieved from the first one of the storage spaces, further is a message or multimedia data of video, digital music, or digital picture.
35. (Previously Presented) The server as recited in claim 31, wherein said operation further comprises:
from the first wireless device remotely deleting, moving, copying or renaming a folder in the first one of the storage spaces.
36. (Previously Presented) The server as recited in claim 35, wherein said operation further comprises:
from the first wireless device remotely deleting, moving, copying or renaming a file in the first one of the storage spaces.
37. (Previously Presented) The server as recited in claim 31, wherein said operation further comprises:
from the first wireless device remotely creating a folder or a folder structure in the first one of the storage spaces.
38. (Previously Presented) The server as recited in claim 31, wherein said program instructions further configure the server to cause display of the first one of the storage spaces in a web browser executed on the first wireless device for the user remotely access to the first one of the storage spaces.
39. (Currently Amended) The server as recited in claim 31, wherein the program instructions further cause the server to allocate exclusively a second one of the storage spaces of a predefined capacity to a user of a second wireless device ~~from which for facilitating the user allowed to perform operation for~~ remotely access to the second one of the storage spaces.

40. (Previously Presented) The server as recited in claim 31, wherein the first wireless device further is one of a cell phone or a personal data assistant and management device (“PDA”).
41. (Previously Presented) The server as recited in claim 31, wherein the download information for the file further includes at least the name of the file and the internet protocol (“IP”) address of the remote server.
42. (Currently Amended) A server for delivering storage service, comprising:
a plurality of storage spaces, and a non-transitory computer-readable medium comprising program instructions that, executed by the server, causes the server to deliver the storage service; wherein the program instructions comprises:
program instructions for the server allocating exclusively a first one of the storage spaces of a predefined capacity to a user of a first wireless device;
program instructions for establishing a communication link for the first wireless device remotely access to the first one of the storage spaces;
program instructions for sending information of the first one of the storage spaces to the first wireless device for presenting the first one of the storage spaces to the user; and
program instructions for updating the first one of the storage spaces according to a requested operation for remotely access to the first one of the storage spaces in response to the user from the first wireless device ~~performed~~ performing the operation,
wherein said operation comprises creating from the first wireless device a folder structure of a plurality of folders in the first one of the storage spaces, and comprises to delete or move or copy or rename a first one of the folders in the folder structure, wherein each of the folders being used by the first wireless device for storing data therein or retrieving data therefrom.
43. (Currently Amended) The server as recited in claim 42, wherein said storing data includes to download a file from a remote server across a network into the first one of the storage spaces through utilizing download information for the file cached in the first wireless device in

response to the user from the first wireless device ~~performed~~ performing the operation for downloading the file.

44. (Previously Presented) The server as recited in claim 43, wherein said downloading a file comprises: the first wireless device obtaining download information for the file from the remote server, transmitting the cached download information to the server; and causing the server in accordance with the downloading information to store the file from the remote server into the first one of the storage spaces.
45. (Previously Presented) The server as recited in claim 42, wherein said data being stored into or retrieved from the first one of the storage spaces, further comprises a message, or a multimedia data of video, digital music or photo picture.
46. (Previously Presented) The server as recited in claim 42, wherein said operation further comprises: from the first wireless device to delete, move, copy or rename a file in the folder structure.
47. (Previously Presented) The server as recited in claim 42 wherein said storage spaces further are configured among a plurality of storage devices.
48. (Previously Presented) The server as recited in claim 43, wherein said download information for the file further includes at least the name of the file and the internet protocol (“IP”) address of the remote server.
49. (Currently Amended) The server as recited in claim 42, wherein the program instructions further cause the server to: allocate exclusively a second one of the storage spaces of a predefined capacity to a user of a second wireless device ~~from which~~ for facilitating the user ~~allowed to perform operation for~~ remotely access to the second one of the storage spaces.

50. (Previously Presented) the server as recited in claim 42, wherein said operation further comprises: from the first wireless device to create a folder in the folder structure.

Electronic Acknowledgement Receipt

EFS ID:	24167629
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Method and Apparatus For Wireless Devices Access To External Storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	23-NOV-2015
Filing Date:	25-SEP-2013
Time Stamp:	17:27:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment after Notice of Allowance (Rule 312)	744claims.pdf	50245 <small>de0adaa8cf5af8e9c8ed91d2d400ee76c594bfb</small>	no	6

Warnings:

Information:

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.

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)

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.

77501 7590 11/18/2015
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.

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/036,744	09/25/2013	Sheng Tai (Ted) Tsao		5504

TITLE OF INVENTION: Method and Apparatus For Wireless Devices Access To External Storage

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	02/18/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
ELMORE, REBA I	2131	711-171000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). <input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. <input checked="" type="checkbox"/> "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. #77501	2. For printing on the patent front page, list (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, _____ 1 (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. _____ 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: <input checked="" type="checkbox"/> Issue Fee <input type="checkbox"/> Publication Fee (No small entity discount permitted) <input type="checkbox"/> Advance Order - # of Copies _____	4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above) <input type="checkbox"/> A check is enclosed. <input checked="" type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. <input type="checkbox"/> The director is hereby authorized to charge the required fee(s), any deficiency, or credits 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

Applicant asserting small entity status. See 37 CFR 1.27

Applicant changing to regular undiscounted fee status.

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

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.

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

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature *Sheng Tai Tsao* Date 12/01/2015
 Typed or printed name Sheng Tai Tsao Registration No. _____

Electronic Patent Application Fee Transmittal

Application Number:	14036744			
Filing Date:	25-Sep-2013			
Title of Invention:	Method and Apparatus For Wireless Devices Access To External Storage			
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao			
Filer:	Sheng Tai Tsao			
Attorney Docket Number:				
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
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	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				480

Electronic Acknowledgement Receipt

EFS ID:	24228557
Application Number:	14036744
International Application Number:	
Confirmation Number:	5504
Title of Invention:	Method and Apparatus For Wireless Devices Access To External Storage
First Named Inventor/Applicant Name:	Sheng Tai (Ted) Tsao
Customer Number:	77501
Filer:	Sheng Tai Tsao
Filer Authorized By:	
Attorney Docket Number:	
Receipt Date:	01-DEC-2015
Filing Date:	25-SEP-2013
Time Stamp:	15:09:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$480
RAM confirmation Number	2693
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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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)	744fee-paid.pdf	490900 <small>fe8c44c3cbff8320c919e6db93da6fc58f70d f41</small>	no	1

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30002 <small>0cd47b5b4cdaa737f6da315538ba7f106a5 5eea5</small>	no	2
---	----------------------	--------------	---	----	---

Warnings:

Information:

Total Files Size (in bytes):	520902
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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

Table with 6 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY.DOCKET.NO, TOT CLAIMS, IND CLAIMS. Row 1: 14/036,744, 09/25/2013, 2131, 730, , 20, 3

77501
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

CONFIRMATION NO. 5504
CORRECTED FILING RECEIPT



Date Mailed: 12/03/2015

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

Inventor(s) Sheng Tai (Ted) Tsao, Fremont, CA;

Applicant(s) Sheng Tai (Ted) Tsao, Fremont, CA;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 10/726,897 12/04/2003 PAT 8606880

Foreign Applications for which priority is claimed (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: No

Permission to Access Search Results: No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 10/10/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 14/036,744

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

Method and Apparatus For Wireless Devices Access To External Storage

Preliminary Class

711

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



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

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
14/036,744 09/25/2013 Sheng Tai (Ted) Tsao 5504

77501 7590 12/18/2015
Sheng Tai (Ted) Tsao
3906 Borgo Common.
Fremont, CA 94538

EXAMINER

ELMORE, REBA I

ART UNIT PAPER NUMBER

2131

NOTIFICATION DATE DELIVERY MODE

12/18/2015

ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

- ted.tsao@sttwebos.com
ted.tsao@yahoo.com
ted.tsao@comcast.net

Response to Rule 312 Communication	Application No. 14/036,744	Applicant(s) TSAO, SHENG TAI (TED)
	Examiner REBA I. ELMORE	Art Unit 2131

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

1. The amendment filed on 23 November 2015 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.

	/REBA I. ELMORE/ Primary Examiner Art Unit: 2131
--	--

OK to enter
12/12/2015
RIE

Application No: 14/036,744

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Sheng Tai (Ted) Tsao, et al.
Application Number: 14/036,744 Confirmation No. 5504
Filing Date: 09/25/2013
Title: Method and System For Expand Storage Space For Wireless Devices
Examiner: Reba I. Elmore Phone: 571-272-4192
Art Unit: 2131

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

Rule-312 Amendment For the Allowed Claims

Dear Commissioner:

This communication responds to the allowance of instant application mailed on 11/18/2015.

In the response, please find:

Claim amendments for the claims submitted on 10/21/2015 in compliant with 37CFR 1.132 for correcting the informalities found in the claims. The amendments do not change the patentable subject matters, therefore, a request for entering the amended claims is respectively submitted.

Thanks
11/23//2015

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



APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/036,744	01/19/2016	9239686		5504

77501 7590 12/29/2015
 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 179 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 Tai (Ted) Tsao, Fremont, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

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

source=PATENT ASSIGNMENT AGREEMENT (Tsao & STT)#page1.tif

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

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 BORGIO 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 BORGIO 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

source=TS_Patents-Assgin-2-STT-WEBOS#page2.tif

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.

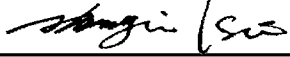
STT has assigned the Patents to TS Patents on January 19, 2017 for good business reasons. Now for other good consideration, TS Patents hereby assigns all the Patents and Applications back to STT (“Assignee”) except the Patent No. **9,280,547, 8,799,473, 8,713,442, and 8,396,891.**

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: 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:	
<i>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.</i>	
Email:	ted.tsao@sttwebos.com
Correspondent Name:	SHENG TAI ("TED") TSAO
Address Line 1:	3906 BORG COMMON
Address Line 4:	FREMONT, CALIFORNIA 94538
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

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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: [Signature]
Name: SHENG ZAI (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.

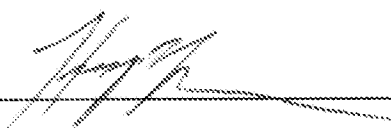
State of California
County of ALAMEDA)

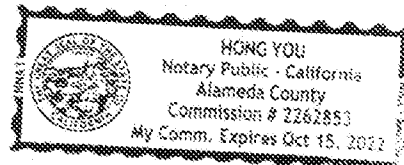
On DEC 17 2018 before me, HONG YOU NOTARY PUBLIC
(insert name and title of the officer)

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.

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

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas - Waco Division on the following

Trademarks or Patents. (the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 6:19-cv-00527	DATE FILED 9/6/2019	U.S. DISTRICT COURT Western District of Texas - Waco Division
PLAINTIFF Synkloud Technologies, LLC		DEFENDANT Adobe, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 SEE ATTACHED		
2 8,606,880		
3 8,856,195		
4 8,868,690		
5 9,219,780		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 9,239,686			
2 10,015,254			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Jeannette J. Clack	(BY) DEPUTY CLERK <i>LDiaz</i>	DATE 9/6/2019
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy