Electronic Acknowledgement Receipt

EFS ID:	7807002
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	Jeffrey J. Rothschild
Customer Number:	37086
Filer:	Tracy Wesley Druce
Filer Authorized By:	
Attorney Docket Number:	18330.0004
Receipt Date:	14-JUN-2010
Filing Date:	
Time Stamp:	19:49:04
Application Type:	Reexam (Third Party)

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	Reexam Certificate of Service	CERTIFICATE_OF_SERVICE_686.pdf	16078 7d34496b67deab4b5b1c60210be605a1de23c9b5	no	1

Warnings:	
Information:	

2	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	PA_B_rfc1459_IRC_66pg.pdf	88827 306d5d7f73807b5d0abc3776032ff38b50168392	no	66
Warnings:					
Information:					
3	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	PA_C_Packing_Messages_Friedman_19pg.pdf	158585 3181a8b60a840c15ea194eb65a5efee944cba682	no	19
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Information:					
4	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	PA_D_Van_Hook_An_Approach_to_DIS_Scaleabilty_9pg.pdf	256867 1735f39aa38a6892a351effed101acb236953e42	no	10
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Information:					
5	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	PA_E_IEEE_1278_1993_65pg_.pdf	8236023 8add3bb3c2d3b869ab95bdc5e984c99f8bd8ae32	no	65
Warnings:					
Information:					
6	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	PA_G_RING_A_Client_Server_System_10pg.pdf	3847316 4393951b51b386f19536a4bd07c905cf3ed4f856	no	10
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Information:					
7	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	PA_F_5736982_Virtual_space_apparatus_with_ava_46pg_.pdf	23110919 52b5269d98cb9b8d57ff14c0dd447076305f7ee7	no	46
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Information:					
8	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	PA_H_History_of_Netrek_McFadden_16pg_.pdf	149424 85f045ab3f6140b992ee94995bfbcc9c78aa66a1	no	16
Warnings:					
Information:					
9	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	PAT_A_6226686_33pg_.pdf	7608104 8a434562b70a29537320d903f985a8f0fa1d59f1	no	33
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Information:					
10	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	PAT_B_6226686_Pro_History_296pg_.pdf	8632310 4e5abde682aee8b87e93c2600caa98f2523f776d	no	296
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Information:					

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12	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	CC_C_686_v_Van_Hook_and_DIS_48pg.pdf	677491 80753a24fe7b0665f97ecb81255f829b84c4aade	no	48
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13	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	CC_D_686_v_Suzuki_12pg.pdf	92357 bf42b2d42665d239a353a9be6b1845403cea556e	no	12
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14	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	CC_E_686_IRCd27h_5_6_7pg.pdf	43226 4160212c279e2eb81a1c5ed5054cad936ade925f	no	7
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15	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	CC_F_686_IRC_RFC_IRCd27h_5_6_5pg.pdf	43007 051e4da3207f1ecccf904c58a2400a72bdeed26e	no	5
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17	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	CC_H_686_v_Ring_in_view_of_Netrek_107pg.pdf	648492 fe400c982e17aab300b6bcd0b26771de7c02ae98	no	107
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Information:					
18	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	CC_I_686_v_Ring_in_view_of_Van_Hook_73pg.pdf	864161 c8a3c813718a1dedcd46a771bb6a0e93e73ef11a	no	73
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19	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_B_Paltalk_Complaint_17pg_.pdf	593315 a063608947fbf69a8021256f75e521c20347ecf0	no	17
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20	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_C_90010093_AhnDecl_11pg_.pdf	8561674 b25b655f1fb4d546d1a973e29535aa2dd0f9762a	no	11
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21	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_D_90010093_Order_Granting_Reexam_19pg_.pdf	12050231 4d73b62773a5edf98f82b0cfce5c07dbf038a99f	no	19
Warnings:					
Information:					
22	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_E_PalTalk_Opening_CC_Brief_34pg_.pdf	328757 86c37d38ad74413d1348cede9bef1a25530b29eb	no	34
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23	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_F_218_Supplemental_Claim_Construction_Order_9pg_.pdf	138199 b5e78e70da513166fc43277285ab4775686ced51	no	9
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Information:					
24	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_G_107_Claim_Construction_Order_44pg_.pdf	304230 9388e736bef70690cf10fa2bfbe6a58beefb2d1f	no	44
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Information:					
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Warnings:					
Information:					
26	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_I_IRCd27h_Server_list_1993_13pg_.pdf	77412 c8b82dfbec98723e24b8993b4d0abcc476ecd2ac	no	13
Warnings:					
Information:					
27	Receipt of Corrected Original Ex Parte Request	686_ex_parte_reexam_145pgs.pdf	404285 0da07407e9afcab9af4f8024ce4989b101528106	no	124
Warnings:					
Information:					
28	Reexam Miscellaneous Incoming Letter	Transmittal_Form_686_3pgs.pdf	778273 21a39e6dd9064ae70a919ea6bda78986db67ac2e	no	3
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Information:					

29	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_A_0113_5_Smith_declaration_20pg.pdf	4644472 7183c751d3c87c71c1a18c5be812e8840c2873dd	no	20
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Information:					
30	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_J_Netgames_your_guide_to_the_games_1_to_139_of_287pgs.pdf	17218449 3629ec58e94f476efc44a174a502033bf5b5809b	no	139
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Information:					
31	Reexam - Affidavit/Decl/Exhibit Filed by 3rd Party	OTH_J_Netgames_your_guide_to_the_games_140_to_287_of_287pgs.pdf	16154802 dc002a2f02cc359848a5f36015ffaa556a8fa684	no	148
Warnings:					
Information:					
32	Reexam Miscellaneous Incoming Letter	686_IDS_3pgs.pdf	33321 a7118c68bca7514bf55616e6106a417e8dc0f452	no	5
Warnings:					
Information:					
		Total Files Size (in bytes):	118579988		

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

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

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

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

Electronic Patent Application Fee Transmittal	
Application Number:	90011036
Filing Date:	
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	Jeffrey J. Rothschild
Filer:	Tracy Wesley Druce/Sonal Dash
Attorney Docket Number:	18330.0004
Filed as Large Entity	

ex parte reexam Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Request for ex parte reexamination	1812	1	2520	2520
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
		Total in USD ($)		**2520**

Electronic Acknowledgement Receipt	
EFS ID:	7811401
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	Jeffrey J. Rothschild
Correspondence Address:	- - - - - - - - - - -
Filer:	Tracy Wesley Druce/Sonal Dash
Filer Authorized By:	Tracy Wesley Druce
Attorney Docket Number:	18330.0004
Receipt Date:	14-JUN-2010
Filing Date:	
Time Stamp:	20:01:42
Application Type:	Reexam (Third Party)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$2520

RAM confirmation Number	5920
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Fee Worksheet (PTO-875)	fee-info.pdf	30322 e7478e319a57f4f0e9904f4f2d1e86d52824bf29	no	2

Warnings:	
Information:	
Total Files Size (in bytes):	30322

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.

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	90/011,036	6226686	
	Examiner	Art Unit	
		3992	

Index of Claims

Application/Control No.	Applicant(s)/Patent under Reexamination
90/011,036	6226686
Examiner	**Art Unit** 3992

√	Rejected	–	(Through numeral) Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claim		Date								
Final	Original									
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Issue Classification	Application/Control No. 90/011,036	Applicant(s)/Patent under Reexamination 6226686
	Examiner	Art Unit 3992

ISSUE CLASSIFICATION

ORIGINAL		INTERNATIONAL CLASSIFICATION	
CLASS	SUBCLASS	CLAIMED	NON-CLAIMED
709	245	/	/

CROSS REFERENCES									
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)								
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(Assistant Examiner) (Date)	(Primary Examiner) (Date)	Total Claims Allowed:	
(Legal Instruments Examiner) (Date)		O.G. Print Claim(s)	O.G. Print Fig.

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

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
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	29		59		89		119		149		179		209
	30		60		90		120		150		180		210

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90/011,036	6226686
	Certificate Date	Certificate Number

Requester Correspondence Address: ☐ **Patent Owner** ☒ **Third Party**

Tracy W. Druce
NOVAK DRUCE & QUIGG, LLP
1000 Louisiana Street, 53rd Floor
Houston, TX 77002

LITIGATION REVIEW ☐	(examiner initials)	(date)
Case Name		Director Initials

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	**NUMBER**
1.	
2.	
3.	
4.	

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination
	90/011,036	6226686
	Examiner	Art Unit: 3992

SEARCHED			
Class	Subclass	Date	Examiner

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

Bib Data Sheet

CONFIRMATION NO. 1071

SERIAL NUMBER	FILING OR 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
90/011,036	06/14/2010 RULE	709	3992	18330.0004

APPLICANTS

6226686, Residence Not Provided;
PALTALK HOLDINGS, INC.(OWNER), New York, NY;
NOVAK DRUCE & QUIGG, LLP(3RD PTY REQ), Houston, TX;
Tracy W. Druce, Houston, TX

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

This application is a REX of 09/407,371 09/28/1999 PAT 6,226,686
which is a CON of 08/896,797 07/18/1997 PAT 6,018,766
which is a CON of 08/595,323 02/01/1996 PAT 5,822,523

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

Foreign Priority claimed	STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ yes ☐ no			19	6
35 USC 119 (a-d) conditions met ☐ yes ☐ no ☐ Met after Allowance				
Verified and Acknowledged Examiner's Signature Initials				

ADDRESS
26137

TITLE

SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS

FILING FEE RECEIVED		
2520	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

ARTIFACT SHEET

Enter artifact number below. Artifact number is application number + artifact type code (see list below) + sequential letter (A, B, C ...). The first artifact folder for an artifact type receives the letter A, the second B, etc.. Examples: 59123456PA, 59123456PB, 59123456ZA, 59123456ZB

C90/011,036 PA)

Indicate quantity of a single type of artifact received but not scanned. Create individual artifact folder/box and artifact number for each Artifact Type.

[2] CD(s) containing:
computer program listing [✓]
Doc Code: Computer Artifact Type Code: P

pages of specification and/or sequence listing and/or table [ ]
Doc Code: Artifact Artifact Type Code: S

content unspecified or combined [ ]
Doc Code: Artifact Artifact Type Code: U

[ ] Stapled Set(s) Color Documents or B/W Photographs
Doc Code: Artifact Artifact Type Code: C

[ ] Microfilm(s)
Doc Code: Artifact Artifact Type Code: F

[ ] Video tape(s)
Doc Code: Artifact Artifact Type Code: V

[ ] Model(s)
Doc Code: Artifact Artifact Type Code: M

[ ] Bound Document(s)
Doc Code: Artifact Artifact Type Code: B

[ ] Confidential Information Disclosure Statement or Other Documents marked Proprietary, Trade Secrets, Subject to Protective Order, Material Submitted under MPEP 724.02, etc.
Doc Code: Artifact Artifact Type Code X

[ ] Other, description: _____
Doc Code: Artifact Artifact Type Code: Z

March 8, 2004

Patent Assignment Abstract of Title

Total Assignments: 6

Application #: 09407371 **Filing Dt:** 09/28/1999 **Patent #:** 6226686 **Issue Dt:** 05/01/2001
PCT #: NONE **Publication #:** NONE **Pub Dt:**
Inventors: JEFFREY J. ROTHSCHILD, DANIEL J. SAMUEL, MARC P. KWIATKOWSKI
Title: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS

Assignment: 1

Reel/Frame: 011035 / 0740 **Received:** 09/07/2000 **Recorded:** 08/09/2000 **Mailed:** 12/05/2000 **Pages:** 7
Conveyance: CHANGE OF NAME (SEE DOCUMENT FOR DETAILS).
Assignor: MPATH INTERACTIVE, INC. **Exec Dt:** 01/07/2000
Assignee: HEARME
665 CLYDE AVENUE
MOUNTAIN VIEW, CALIFORNIA 94043
Correspondent: STERNE, KESSLER, GOLDSTEIN & FOX PLLC
MICHAEL B. RAY
1100 NEW YORK AVE., N.W.
SUITE 600
WASHINGTON, DC 20005-3934

Assignment: 2

Reel/Frame: 012598 / 0506 **Received:** 02/27/2002 **Recorded:** 02/11/2002 **Mailed:** 04/19/2002 **Pages:** 2
Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).
Assignor: HEARME, INC. **Exec Dt:** 12/19/2001
Assignee: PALTALK HOLDINGS, INC.
213 WEST 35TH STREET, 13TH FLOOR
NEW YORK, NEW YORK 10001
Correspondent: FENWICK & WEST LLP
RAJIV P. PATEL, ESQ.
TWO PALO ALTO SQUARE
PALO ALTO, CA 94306

Assignment: 3

Reel/Frame: 015732 / 0121 **Received:** 09/01/2004 **Recorded:** 08/27/2004 **Mailed:** 03/05/2005 **Pages:** 37
Conveyance: SECURITY AGREEMENT
Assignor: LEAP WIRELESS INTERNATIONAL, INC. **Exec Dt:** 08/16/2004
Assignee: WELLS FARGO BANK, N.A., AS COLLATERAL AGENT
SIXTH AND MARQUETTE
MAC N9303-120
MINNEAPOLIS, MINNESOTA 55479
Correspondent: LATHAM & WATKINS
RHONDA DELEON
650 TOWN CENTER DRIVE
SUITE 2000
COSTA MESA, A 92626

Assignment: 4

Reel/Frame: 016290 / 0577 **Received:** 02/28/2005 **Recorded:** 02/17/2005 **Mailed:** 07/22/2005 **Pages:** 12
Conveyance: SECURITY INTEREST (SEE DOCUMENT FOR DETAILS).
Assignors: CRICKET COMMUNICATIONS, INC. **Exec Dt:** 01/10/2005
LEAP WIRELESS INTERNATIONAL, INC. **Exec Dt:** 01/10/2005
BACKWIRE.COM, INC. **Exec Dt:** 01/10/2005
TELEPHONE ENTERTAINMENT NETWORK, INC. **Exec Dt:** 01/10/2005
CHASETEL LICENSEE CORP. **Exec Dt:** 01/10/2005
CRICKET LICENSEE (ALBANY), INC. **Exec Dt:** 01/10/2005
CRICKET LICENSEE (COLUMBUS), INC. **Exec Dt:** 01/10/2005

CRICKET LICENSEE (DENVER), INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE (LAKELAND), INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE (MACON), INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE (NORTH CAROLINA), INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE (PITTSBURGH), INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE (RECAUCTION), INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE I, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE II, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE III, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE IV, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE V, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE VI, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE VII, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE VIII, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE IX, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE X, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE XII, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE XIII, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE XIV, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE XV, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE XVI, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE XVII, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE XVIII, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE XIX, INC.	**Exec Dt:** 01/10/2005
CRICKET LICENSEE XX, INC.	**Exec Dt:** 01/10/2005
CRICKET HOLDINGS DAYTON, INC.	**Exec Dt:** 01/10/2005
MCG PCS LICENSEE CORPORATION, INC.	**Exec Dt:** 01/10/2005
CHASETEL REAL ESTATE HOLDING COMPANY, INC.	**Exec Dt:** 01/10/2005
CRICKET ALABAMA PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET ARIZONA PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET ARKANSAS PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET CALIFORNIA PROPERTY COMPANY	**Exec Dt:** 01/10/2005
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CRICKET FLORIDA PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET GEORGIA PROPERTY COMPANY, INC.	**Exec Dt:** 01/10/2005
CRICKET IDAHO PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET ILLINOIS PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET INDIANA PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET KANSAS PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET KENTUCKY PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET MICHIGAN PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET MINNESOTA PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET MISSISSIPPI PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET NEBRASKA PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET NEVADA PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET NEW MEXICO PROPERTY COMPANY	**Exec Dt:** 01/10/2005
CRICKET NEW YORK PROPERTY COMPANY, INC.	**Exec Dt:** 01/10/2005
CRICKET NORTH CAROLINA PROPERTY COMPANY	**Exec Dt:** 01/10/2005

CRICKET OHIO PROPERTY COMPANY **Exec Dt:** 01/10/2005
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CRICKET TEXAS PROPERTY COMPANY **Exec Dt:** 01/10/2005
CRICKET UTAH PROPERTY COMPANY **Exec Dt:** 01/10/2005
CRICKET WASHINGTON PROPERTY COMPANY **Exec Dt:** 01/10/2005
CRICKET WISCONSIN PROPERTY COMPANY **Exec Dt:** 01/10/2005
LEAP PCS MEXICO, INC. **Exec Dt:** 01/10/2005

Assignee: BANK OF AMERICA N.A.
100 NORTH TYRON STREET
CHARLOTTE, NORTH CAROLINA 28255

Correspondent: INTELLECTUAL PROPERTY DOCKETING
SHEARMAN & STERLING LLP
599 LEXINGTON AVENUE
NEW YORK, NY 10022

Assignment: 5

Reel/Frame: 022793 / 0850 **Received:** 06/09/2009 **Recorded:** 06/09/2009 **Mailed:** 06/11/2009 **Pages:** 13

Conveyance: SECURITY AGREEMENT

Assignors: CRICKET COMMUNICATIONS, INC. **Exec Dt:** 06/05/2009
LEAP WIRELESS INTERNATIONAL, INC. **Exec Dt:** 06/05/2009
CRICKET LICENSEE (REAUCTION), LLC **Exec Dt:** 06/05/2009
CRICKET LICENSEE I, LLC **Exec Dt:** 06/05/2009
CRICKET LICENSEE 2007, LLC **Exec Dt:** 06/05/2009

Assignee: WILMINGTON TRUST FSB
1100 NORTH MARKET ST. C/O WILMINGTON TRUST COMPANY
ATTN.: CORPORATE CAPITAL MARKETS
WILMINGTON, DELAWARE 19890

Correspondent: JORDAN ALTMAN
599 LEXINGTON AVENUE
SHEARMAN & STERLING LLP - IP DOCKETING
NEW YORK, NY 10022

Assignment: 6

Reel/Frame: 022804 / 0745 **Received:** 06/09/2009 **Recorded:** 06/09/2009 **Mailed:** 06/11/2009 **Pages:** 23

Conveyance: RELEASE BY SECURED PARTY (SEE DOCUMENT FOR DETAILS).

Assignor: BANK OF AMERICA, N.A. **Exec Dt:** 06/05/2009

Assignees: CRICKET COMMUNICATIONS, INC.
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121
LEAP WIRELESS INTERNATIONAL, INC.
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121
TELEPHONE ENTERTAINMENT NETWORK, INC.
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121
CHASETEL LICENSEE CORP.
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121
CRICKET LICESNSEE (ALBANY), INC.
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121
CRICKET LICENSEE (COLUMBUS), INC.
1307 PACIFIC CENTER COURT

SAN DIEGO, CALIFORNIA 92121

CRICKET LICENSEE (DENVER) INC.
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121

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1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121

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1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121

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1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121

CRICKET LICENSEE (PITTSBURGH) INC.
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121

CRICKET LICENSEE (REAUCTION), INC.
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121

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SAN DIEGO, CALIFORNIA 92121

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SAN DIEGO, CALIFORNIA 92121

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CRICKET LICENSEE X, INC.
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CRICKET LICENSEE XI, INC.
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CRICKET WASHINGTON PROPERTY COMPANY
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CRICKET WISCONSIN PROPERTY COMPANY
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121
LEAP PCS MEXICO, INC.
1307 PACIFIC CENTER COURT
SAN DIEGO, CALIFORNIA 92121

Correspondent: JORDAN ALTMAN
599 LEXINGTON AVENUE
SHEARMAN & STERLING LLP - IP DOCKETING
NEW YORK, NY 10022

Search Results as of: 06/19/2010 11:36 AM

If you have any comments or questions concerning the data displayed, contact PRD / Assignments at 571-272-3350.
Web interface last modified: October 18, 2008 v.2.0.1

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

REEXAM CONTROL NUMBER	FILING OR 371 (c) DATE	PATENT NUMBER
90/011,036	06/14/2010	6226686

CONFIRMATION NO. 1071
REEXAMINATION REQUEST NOTICE

Tracy W. Druce
NOVAK DRUCE & QUIGG, LLP
1000 Louisiana Street, 53rd FLoor
Houston, TX 77002

OC000000042193833

Date Mailed: 06/21/2010

NOTICE OF REEXAMINATION REQUEST FILING DATE

(Third Party Requester)

Requester is hereby notified that the filing date of the request for reexamination is 06/14/2010, the date that the filing requirements of 37 CFR § 1.510 were received.

A decision on the request for reexamination will be mailed within three months from the filing date of the request for reexamination. (See 37 CFR 1.515(a)).

A copy of the Notice is being sent to the person identified by the requester as the patent owner. Further patent owner correspondence will be the latest attorney or agent of record in the patent file. (See 37 CFR 1.33). Any paper filed should include a reference to the present request for reexamination (by Reexamination Control Number).

cc: Patent Owner
26137
PATENT DEPARTMENT
SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP
FOUR TIMES SQUARE
NEW YORK, NY 10036

/jcmcdougald/

Legal Instruments Examiner
Central Reexamination Unit 571-272-7705; FAX No. 571-273-9900

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

REEXAM CONTROL NUMBER	FILING OR 371 (c) DATE	PATENT NUMBER
90/011,036	06/14/2010	6226686

CONFIRMATION NO. 1071

REEXAM ASSIGNMENT NOTICE

26137
PATENT DEPARTMENT
SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP
FOUR TIMES SQUARE
NEW YORK, NY 10036

OC000000042193834

Date Mailed: 06/21/2010

NOTICE OF ASSIGNMENT OF REEXAMINATION REQUEST

The above-identified request for reexamination has been assigned to Art Unit 3992. All future correspondence to the proceeding should be identified by the control number listed above and directed to the assigned Art Unit.

A copy of this Notice is being sent to the latest attorney or agent of record in the patent file or to all owners of record. (See 37 CFR 1.33(c)). If the addressee is not, or does not represent, the current owner, he or she is required to forward all communications regarding this proceeding to the current owner(s). An attorney or agent receiving this communication who does not represent the current owner(s) may wish to seek to withdraw pursuant to 37 CFR 1.36 in order to avoid receiving future communications. If the address of the current owner(s) is unknown, this communication should be returned within the request to withdraw pursuant to Section 1.36.

cc: Third Party Requester(if any)
Tracy W. Druce
NOVAK DRUCE & QUIGG, LLP
1000 Louisiana Street, 53rd FLoor
Houston, TX 77002

/jcmcdougald/

Legal Instruments Examiner
Central Reexamination Unit 571-272-7705; FAX No. 571-273-9900

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/011,036	06/14/2010	6226686	18330.0004	1071

26137 7590 07/29/2010

PATENT DEPARTMENT
SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP
FOUR TIMES SQUARE
NEW YORK, NY 10036

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 07/29/2010

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

NOVAK DRUCE & QUIGG, LLP

(NDQ REEXAMINATION GROUP)

1000 LOUISIANA STREET

FIFTY-THIRD FLOOR

HOUSTON, TX 77002

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/011,036*.

PATENT NO. *6226686*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Order Granting / Denying Request For Ex Parte Reexamination	Control No. 90/011,036	Patent Under Reexamination 6226686	
	Examiner ANDREW L. NALVEN	Art Unit 3992	

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

The request for *ex parte* reexamination filed *14 June 2010* has been considered and a determination has been made. An identification of the claims, the references relied upon, and the rationale supporting the determination are attached.

Attachments: a)☐ PTO-892, b)☒ PTO/SB/08, c)☒ Other: *Decision on Request*

1. ☒ The request for *ex parte* reexamination is GRANTED.

RESPONSE TIMES ARE SET AS FOLLOWS:

For Patent Owner's Statement (Optional): TWO MONTHS from the mailing date of this communication (37 CFR 1.530 (b)). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

For Requester's Reply (optional): TWO MONTHS from the **date of service** of any timely filed Patent Owner's Statement (37 CFR 1.535). **NO EXTENSION OF THIS TIME PERIOD IS PERMITTED.** If Patent Owner does not file a timely statement under 37 CFR 1.530(b), then no reply by requester is permitted.

2. ☐ The request for *ex parte* reexamination is DENIED.

This decision is not appealable (35 U.S.C. 303(c)). Requester may seek review by petition to the Commissioner under 37 CFR 1.181 within ONE MONTH from the mailing date of this communication (37 CFR 1.515(c)). **EXTENSION OF TIME TO FILE SUCH A PETITION UNDER 37 CFR 1.181 ARE AVAILABLE ONLY BY PETITION TO SUSPEND OR WAIVE THE REGULATIONS UNDER 37 CFR 1.183.**

In due course, a refund under 37 CFR 1.26 (c) will be made to requester:

a) ☐ by Treasury check or,

b) ☐ by credit to Deposit Account No. _____, or

c) ☐ by credit to a credit card account, unless otherwise notified (35 U.S.C. 303(c)).

cc:Requester (if third party requester)

DECISION GRANTING EX PARTE REEXAMINATION

A substantial new question of patentability affecting claims 1-19 of United States Patent Number 6,226,686 (hereafter "the '686 patent") is raised by the request for *ex parte* reexamination submitted on June 14, 2010.

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that *ex parte* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extensions of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

Notification of Concurrent Proceedings

The patent owner is reminded of the continuing responsibility under 37 CFR 1.985 to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the '686 patent throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP § 2686 and 2686.04.

PROSECUTION HISTORY

The '686 patent was issued on May 1, 2001 from an application filed September 28, 1999. On December 5, 2000, a notice of allowance was issued that stated reasons for allowance as:

> "None of the prior art of record teaches or suggests the method for facilitating communications among a plurality of host computers over a network, wherein said method comprises the steps of receiving a create message from said host computers, receiving join messages from a first subset of said computers, receiving host messages from a second subset of said first subset of computers belonging to said message group, wherein each of said messages contains a payload portion and a portion that is used to identify said message group, aggregating said payload portions of said messages received from said second subset of computers, forming an aggregated message using said aggregated payload, and transmitting said aggregated message to said first set of computers as set forth in the claims and specification." *'686 Patent Prosecution, Notice of Allowance mailed December 8, 2000.*

This statement of reasons for allowance notes that the prior art of record fails to teach the entire claim. However, the '686 patent is related to parent patent 5,822,523 ("the '523 patent") that contains similar claim limitations. In the '523 patent, the claims were allowed because the prior art did not teach the aggregating of messages sent from a plurality of host computers into a single message. Thus, the record suggests that the '686 patent was allowed for reasons similar to that of the parent '523 patent at least with regards to claims 1-4 and 7-18. Claims 5 and 6 do not recite the aggregation limitations and were not specifically mentioned in the notice of allowance. Thus the record is unclear as the reasons for allowance of claims 5 and 6.

PROPOSED SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY

Third Party Requester ("Requester") requested reexamination of claims 1-6 of the '686 patent based upon the following prior art patents and publications:

1. Source Code including Server2.5pl4.tar.gz and BRHM-1.3.tar.gz (hereafter "Netrek").
2. RFC 1459 – Internet Relay Chat Protocol by J. Oikarinen, published May 1993 (hereafter "IRC RFC").
3. "Packing Messages as a Tool for Boosting the Performance of Total Ordering Protocols by R. Friedman and published July 7, 1995 (hereafter "Friedman").
4. "An Approach to DIS Scalability" by Van Hook et al and published on September 26-30, 1994 (hereafter "Van Hook").
5. IEEE 1278-1993 IEEE Standard for Information Technology- Protocols for Distributed Interactive Simulation Applications, approved March 18, 1993, and published in 1993 (hereafter "DIS")
6. US Patent No. 5,736,982 issued to Suzuki on April 7, 1998 (hereafter "Suzuki") that was not cited in earlier examination. Suzuki qualifies as prior art under §102(e).
7. "RING: A Client-Server System for Multi-User Virtual Environments" by Funkhouser and published April 9-12, 1995 (hereafter "Ring").

8. Andy McFadden, "The History of Netrek", published January 1, 1994 (hereafter "McFadden").
9. Internet Relay Chat Daemon (IRCD) version 2.7h, published January 5, 1992 (hereafter "IRDC 2.7h").

Requestor has alleged a substantial new question of patentability in light of the proposed rejections:

Issue 1 - Claims 1-4, 7-10, 12-15, 18-19 are anticipated by Netrek under 35 U.S.C. §102(b).

Issue 2 - Claims 1-4, 7-10, 12-15, 18-19 are rendered obvious by the combination of Netrek in view of McFadden under 35 U.S.C. 103(a).

Issue 3 - Claims 7-9, 11-15, 17-19 are rendered obvious by the combination of Van Hook in view of DIS under 35 U.S.C. 103(a).

Issue 4 - Claims 5 and 6 are anticipated by Suzuki under 35 U.S.C. §102(e).

Issue 5 - Claims 5 and 6 are anticipated by IRC 2.7h under 35 U.S.C. §102(b).

Issue 6 - Claims 5 and 6 are rendered obvious by the combination of IRC RFC in view of IRCD 2.7 under 35 U.S.C. 103(a).

Issue 7 - Claims 5 and 6 are anticipated by Ring under 35 U.S.C. §102(b).

Issue 8 - Claims 1-4, 7-10, 12-15, 18-19 are rendered obvious by the combination of Ring in view of Netrek under 35 U.S.C. 103(a).

Issue 9 - Claims 1-4, 7-9, 11-15, 18-19 are rendered obvious by the combination of Ring in view of Van Hook under 35 U.S.C. 103(a).

ANALYSIS OF SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY

Summary

Requestor has shown a substantial new question of patentability with regards to claims 1-6 as presented in Issues 1-6.

Analysis

A substantial new question of patentability is raised by a cited patent or printed publication when there is a substantial likelihood that a reasonable examiner would consider the prior art patent or printed publication important in deciding whether or not the claim is patentable. A substantial new question of patentability is not raised by prior art presented in a reexamination request if the Office has previously considered (in an earlier examination of the patent) the same question of patentability as to a patent claim favorable to the patent owner based on the same prior art patents or printed publications. In re Recreative Technologies, 83 F.3d 1394, 38 USPQ2d 1776 (Fed. Cir. 1996).

Netrek Reference.

The Netrek reference is composed of a client and a server software code that is used to play the Netrek game. The Ahn Declaration attests that both the client and the server code were publicly available on the Internet. Accordingly, Netrek is a printed publication.

Netrek raises a substantial new question of patentability regarding claims 1-4, 7-10, 12-15, 18-19 as presented in Issues 1, 2, and 8. Netrek raises a substantial new question by providing new and non-cumulative teachings that a reasonable examiner would consider important in determining patentability of the claims.

Netrek discloses a server and client code for playing an online based multiplayer game. Netrek provides teachings relevant to the distinguishing features of the '686 patent. For example, Netrek teaches forming an aggregated message using said aggregated payload (*Netrek, Server/ntserv/socket.c at lines 1603-1744 and lines 603-690*). Netrek operates by allowing clients to send messages to the server and the server places the messages into a shared memory (*Server/ntserv/socket.c, lines 1825-2044).* Next, the server will send out a message that aggregates the received client messages to the clients (*Server/ntserv/socket.c, lines 603-90).*

These teachings would be important to a reasonable examiner in deciding patentability because the prosecution history suggests that these features were the reason for allowance of the claims. Thus, there is a substantial likelihood that a reasonable examiner would consider Netrek important in deciding whether or not the claims are patentable. Accordingly, Netrek raises a substantial new question of patentability as to claims 1-4, 7-10, 12-15, 18-19 that has not been decided in a previous examination.

Requestor proposed Issue 2 as an additional substantial new question based upon Netrek in combination with McFadden. As noted above, Netrek alone raises a substantial new question sufficient to grant reexamination of claims 1-4, 7-10, 12-15, 18-19. Thus, Issue 2 raises a substantial new question in light of the discussion above and a discussion of McFadden is omitted.

Van Hook Reference

Van Hook raises a substantial new question of patentability regarding claims 1-4, 7-9, 11-15, and 18-19 as presented in Issues 3 and 9. Van Hook raises a substantial new question by providing new and non-cumulative teachings that a reasonable examiner would consider important in determining patentability of the claims.

For example, Van Hook discloses the receiving of packets in the form of PDUs and the bundling of those packets into a bundled packet for transmission (*Van Hook, pages 1-2*). Van Hook discloses a battlefield simulation system that simulates battlefield conditions. Host computers that participate in the simulation send the server state information and the server bundles the state information into a larger packet that is distributed to the host computers.

Van Hook's teaching is relevant to the claimed "aggregating" step and would be important to a reasonable examiner in deciding patentability because the prosecution history suggests that these features were the reason for allowance of the claims. Thus, there is a substantial likelihood that a reasonable examiner would consider Van Hook important in deciding whether or not the claims are patentable. Accordingly, Van Hook raises a substantial new question of patentability as to claims 1-4, 7-9, 11-15, and 18-19 that has not been decided in a previous examination.

Suzuki Reference

Suzuki raises a substantial new question of patentability regarding claims 5 and 6 as presented in Issue 4. Suzuki raises a substantial new question by providing new and non-

cumulative teachings that a reasonable examiner would consider important in determining patentability of the claims.

Suzuki discloses a system for controlling the interaction of a plurality of users representing by avatars that are acting in a virtual space (*Suzuki, Abstract*). Suzuki discloses many of the features of claims 5 and 6 such that a reasonable Examiner would consider Suzuki important in deciding patentability. For example, Suzuki teaches receiving a host message from one of the plurality of host computers belonging to a group (*Suzuki, column 8 lines 16-65; column 12; column 2 lines 20-24 - conversation/voices are sent to the server and the server then sends the conversation/voices to all members of the group*) and forming a server message using the payload portion of said host message (*Suzuki, column 8 lines 16-65; column 12; column 2 lines 20-24 - conversation/voices are sent to the server and the server then sends the conversation/voices to all members of the group*). Suzuki further teaches the suppressing a server message such that the host computer that originated the message does not receive the server message (*Suzuki, column 5 lines 52-60 and column 6 lines 22-25).*

These teachings would be important to a reasonable examiner in deciding patentability because the prosecution history suggests that these features were the reason for allowance of the claims. Thus, there is a substantial likelihood that a reasonable examiner would consider Suzuki important in deciding whether or not the claims are patentable. Accordingly, Suzuki raises a substantial new question of patentability as to claims 5 and 6 that has not been decided in a previous examination.

DIS Reference

DIS does not raise a substantial new question of patentability regarding claims 7-9, 11-15, and 17-19 as presented in Issue 3 because DIS does not provide new and non-cumulative teachings that a reasonable examiner would consider important in determining patentability of the claims. DIS discloses an environment whereby distributed computer systems exchange messages in either a broadcast, unicast, or multicast environment (*DIS, Page 10)*. DIS discloses the sending of a message in a multicast procedure to members of a group (*DIS, Pages 10 and 40-41)*; however, DIS does not teach the distinguishing feature of aggregating the messages of clients into a single group message. Accordingly, DIS does not independently raise a substantial new question of patentability over claims 7-9, 11-15, and 17-19. However, as noted above, Van Hook alone raises a substantial new question sufficient to grant reexamination of claims 7-9, 11-15, and 17-19. Thus, Issue 3 raises a substantial new question in light of the discussion above.

RING Reference

RING does not raise a substantial new question of patentability regarding claims 1-4, 7-9, 11-15, and 18-19 as presented in Issues 9 because RING does not provide new and non-cumulative teachings that a reasonable examiner would consider important in determining patentability of the claims. RING discloses a system for supporting real-time visual interaction between users in a shared 3-D environment (*RING, Abstract)*. RING discloses a client sending a message informing a user of the client's status and the server reporting that status to a group of other users (*RING, Pages 87-91)*; however, RING does not teach the distinguishing feature of aggregating the messages of clients into a single group message. Ring's teaching of determining which clients will receive server messages from is not the same as the distinguishing feature of

aggregating client messages into a single server message. Accordingly, RING does not independently raise a substantial new question of patentability over claims 1-4, 7-9, 11-15, and 18-19.

However, RING does raise a substantial new question of patentability regarding claims 5 and 6 as presented in Issues 7 because RING does provide new and non-cumulative teachings that a reasonable examiner would consider important in determining patentability of the claims. For example, RING discloses receiving a host message from one of the plurality of host computers belonging to a group (*RING, Page 87 – clients send messages to servers which forward them to other clients if the message is relevant to them*) and forming a server message using the payload portion of said host message (*RING, Page 87*).

These teachings would be important to a reasonable examiner in deciding patentability because the prosecution history suggests that these features were the reason for allowance of the claims. Thus, there is a substantial likelihood that a reasonable examiner would consider RING important in deciding whether or not the claims are patentable. Accordingly, RING raises a substantial new question of patentability as to claims 5 and 6 that has not been decided in a previous examination.

IRC RFC Reference

IRC RFC does not raise a substantial new question of patentability regarding claims 1, 2, 4, and 6 as presented in Issue 4 because IRC RFC does not provide new and non-cumulative teachings that a reasonable examiner would consider important in determining patentability of the claims. IRC RFC discloses a system for providing efficient conferencing between clients in

the form of a one-to-many conversation (*IRC RFC, Page 11)*. IRC RFC discloses a client sending a message to a server where the server will then distribute to the message to other clients who have joined a channel (*IRC RFC, Page 11)*; however, IRC RFC does not teach the distinguishing feature of aggregating the messages of clients into a single group message. Accordingly, IRC RFC does not independently raise a substantial new question of patentability over claims 1, 2, 4, and 6.

Friedman Reference

Friedman raises a substantial new question of patentability regarding claims 1, 2, 4, and 6 as presented in Issues 4. Friedman raises a substantial new question by providing new and non-cumulative teachings that a reasonable examiner would consider important in determining patentability of the claims.

For example, Friedman discloses a system for packing messages in order to improve system performance (*Friedman, Abstract)*. Friedman discloses a server packing messages destined for a client into a single packed message utilizing several different protocols (*Friedman, Pages 1 and 5)*. For example, messages destined for a particular client are aggregated for a particular period of time and then packed into a single message for transmission (*Friedman, Page 5)*. While Friedman does not disclose the aggregation of messages destined for a group, Friedman's aggregation techniques would be important to a reasonable examiner in deciding patentability.

These teachings would be important to a reasonable examiner in deciding patentability because the prosecution history suggests that these features were the reason for allowance of the

claims. Thus, there is a substantial likelihood that a reasonable examiner would consider Friedman important in deciding whether or not the claims are patentable. Accordingly, Friedman raises a substantial new question of patentability as to claims 1, 2, 4, and 6 that has not been decided in a previous examination.

IRCD 2.7h Reference

IRCD 2.7h raises a substantial new question of patentability regarding claims 5 and 6 as presented in Issues 5 and 6. IRCD 2.7h raises a substantial new question by providing new and non-cumulative teachings that a reasonable examiner would consider important in determining patentability of the claims.

IRCD 2.7h discloses a system for controlling the interaction of a plurality of users representing by avatars that are acting in a virtual space (*IRCD 2.7h, Abstract*). IRCD 2.7h discloses many of the features of claims 5 and 6 such that a reasonable Examiner would consider IRCD 2.7h important in deciding patentability. For example, IRCD 2.7h teaches receiving a host message from one of the plurality of host computers belonging to a group (*IRCD 2.7h, column 8 lines 16-65; column 12; column 2 lines 20-24 - conversation/voices are sent to the server and the server then sends the conversation/voices to all members of the group*) and forming a server message using the payload portion of said host message (*IRCD 2.7h, column 8 lines 16-65; column 12; column 2 lines 20-24 - conversation/voices are sent to the server and the server then sends the conversation/voices to all members of the group*). IRCD 2.7h further teaches the suppressing a server message such that the host computer that originated the message does not receive the server message (*IRCD 2.7h, column 5 lines 52-60 and column 6 lines 22-25).*

These teachings would be important to a reasonable examiner in deciding patentability because the prosecution history suggests that these features were the reason for allowance of the claims. Thus, there is a substantial likelihood that a reasonable examiner would consider IRCD 2.7h important in deciding whether or not the claims are patentable. Accordingly, IRCD 2.7h raises a substantial new question of patentability as to claims 5 and 6 that has not been decided in a previous examination.

CORRESPONDENCE

All correspondence relating to this ex parte reexamination proceeding should be directed:

By EFS: Registered users may submit via the electronic filing system EFS-Web, at https://sportal.uspto.gov/authenticate/authenticateuserlocalepf.html.

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Any inquiry concerning this communication or earlier communications from the Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Andrew Nalven/

Andrew Nalven
CRU Examiner
GAU 3992
(571) 272-3839

Conferee: ESK

Conferee: AJR

PTO/SB/08a (05-07)
Approved for use through 09/30/2007. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)		
	Application Number	90/011,036
	Filing Date	
	First Named Inventor	JEFFREY J. ROTHSCHILD
	Art Unit	
	Examiner Name	
	Attorney Docket Number	

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
AW	1	5736982		1998-04-07	Suzuki et al.	
	2					
	3					
	4					
	5					
If you wish to add additional U.S. Patent citation information please click the Add button.						
U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
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	First Named Inventor	JEFFREY J. ROTHSCHILD
	Art Unit	
	Examiner Name	
	Attorney Docket Number	

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
ALP	1	Server2.5pl4.tar.gz ("Server Code") and BRMH-1.7.tar.gz ("Client Code") (source code dated no later than August 19941) ("Netrek")	☐
	2	J. OIKARINEN ET AL. RFC 1459, "Internet Relay Chat Protocol", published May 1993 ("IRC RFC").	☐
	3	R. FRIEDMAN ET AL. "Packing Messages as a Tool for Boosting the Performance of Total Ordering Protocols", Dept. of Science of Cornell University, published July 7, 1995 ("Friedman").	☐
	4	DANIEL J. VAN HOOK, JAMES O. CALVIN, MICHAEL K. NEWTON, and DAVID A. FUSCO, "An Approach to DIS Scaleability," 11th DIS Workshop, 26-30 Sept.1994 ("Van Hook").	☐
	5	IEEE 1278-1993 "IEEE Standard for Information Technology- Protocols for Distributed Interactive Simulation Applications", approved March 18, 1993, and published in 1993 ("DIS")	☐
	6	T. A. FUNKHOUSER, "RING: A Client-Server System for Multi-User Virtual Environments," Association of Computing Machinery, 1995 Symposium on Interactive 3D Graphics, Monterey CA, April 9-12, 19952 ("RING").	☐
	7	ANDY MCFADDEN, "The History of Netrek", published January 1, 1994 ("McFadden").	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	JEFFREY J. ROTHSCHILD
	Art Unit	
	Examiner Name	
	Attorney Docket Number	

AW	8	Internet Relay Chat daemon (IRCD) version 2.7h, published January 5, 1992 ("IRCD 2.7h")	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	7/20/10

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90011036	6226686
	Examiner	Art Unit
	ANDREW L NALVEN	3992

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Reviewed Patented File's Prosecution History	7/20/2010	aln

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90/011,036	6226686
	Certificate Date	Certificate Number

Requester Correspondence Address: ☐ Patent Owner ☒ Third Party
NOVAK DRUCE & QUIGG, LLP (NDQ REEXAMINATION GROUP) 1000 LOUISIANA STREET FIFTY-THIRD FLOOR HOUSTON, TX 77002

LITIGATION REVIEW ☒	aln (examiner initials)	7/28/10 (date)
Case Name		Director Initials
Status (OPEN) 2:09cv274 Paltalk Holdings, Inc v. Sony Computer Entertainment America, Inc		Lui Read as JGM
Status (CLOSED) 2:06cv367 Paltalk Holdings, Inc v. Microsoft Corporation		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	NUMBER
1. none	
2.	
3.	
4.	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Ex Parte* Reexamination of U.S. Patent of Jeffrey J. Rothschild et al.	**MAIL STOP *EX PARTE* REEXAM**
U.S. Patent No.: 6,226,686	Art Unit: 3992
Filed: June 14, 2010	Examiner: Andrew L. Nalven
Control No.: 90/011,036	Confirmation No.: 1071
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

APPOINTMENT OF POWER OF ATTORNEY BY ASSIGNEE OF ENTIRE INTEREST AND CHANGE OF CORRESPONDENCE ADDRESS

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

Sir:

The assignee of record of the entire interest of the above-identified U.S. patent hereby appoints the following attorneys to prosecute and transact all business in the U.S. Patent and Trademark Office in connection therewith:

Robert G. Mukai, Registration No. 28,531

Charles F. Wieland III, Registration No. 33,096

Please recognize the correspondence address for the above-identified U.S. patent to the address associated with Customer Number 21839 and direct all calls to Robert G. Mukai at 703-836-6620.

ASSIGNEE STATEMENT UNDER 37 C.F.R. § 3.73(b)

PalTalk Holdings, Inc. hereby states that it is the assignee of the entire right, title and interest in U.S. Patent No. 6,226,686 by virtue of the assignment document recorded on February 11, 2002, at Reel 012598, Frame 0506.

The undersigned, whose title is supplied below, is empowered to sign this statement on behalf of the assignee.

PalTalk Holdings, Inc.

Date: September 1, 2010

By: _____

Jason Katz
Chief Executive Officer
500 North Broadway
Jericho, N.Y. 11753

Electronic Acknowledgement Receipt	
EFS ID:	8518362
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	26137
Filer:	Charles F. Wieland III/Christine Becker
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	18330.0004
Receipt Date:	28-SEP-2010
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Application Type:	Reexam (Patent Owner)

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1	Reexam Change in Pwr Atty for Third Party Requester	002_PowerofAttorney.pdf	41101 b88fdcea89bf96e1ba5c938591a457c46b7b8d53	no	1

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National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

Sheet 1 of 6

U.S. PATENT DOCUMENTS

Exmr. Initials	Ref. No.	Document Number-Kind Code	Publication/Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	1	4,479,195	10-23-1984	HERR et al.	
	2	4,558,180	12-10-1985	SCORDO	
	3	5,079,767	01-07-1992	PERLMAN	
	4	5,247,615	09-21-1993	MORI et al.	
	5	5,260,942	11-09-1993	AUERACH et al.	
	6	5,329,619	07-12-1994	PAGÉ et al.	
	7	5,436,896	07-25-1995	ANDERSON et al.	
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	15	5,787,085	07-28-1998	FOX	
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	17	6,041,166	03-21-2000	HART et al.	
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	137	6,304,550	10-16-2001	FOX	

Examiner Signature		Date Considered	

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Sheet 2 of 6

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In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

FOREIGN PATENT DOCUMENTS

Exmr. Initials	Ref. No.	Foreign Patent Document: Country Code[1], Number, Kind Code	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant of Cited Document	STATUS: Translation	Partial Translation	Eng. Lang. Summary	Search Report	IPER	Abstract	Cited in Spec. / Pg. No(s).	
	23	EP 0598969 A1	06-01-1994	IBM CORPORATION						X		
	24	EP 0687088 A2	12-13-1995	MOTOROLA, INC.						X		
	25	EP 0714684 A1	06-05-1996	NET GAME LIMITED						X		
	26	WO 94/24803	10-27-1994	AT&T CORP.								
	27	WO 97/04386	02-06-1997	3COM CORPORATION								
	97	JP 2-2262	01-08-1990	FUJI FACOM CORP.		X				X		
	98	JP 2-192344	07-30-1990	FUJITSU LTD.		X				X		
	99	JP 4-249938	09-04-1992	FUJITSU LTD.		X				X		
	100	JP 5-199257	08-20-1993	NEC CORP.		X				X		
	101	JP 5-219096	08-27-1993	NEC CORP.		X				X		
	102	JP 5-336155	12-17-1993	NEC CORP.		X				X		
	103	JP 6-30041	02-04-1994	ALCATEL NV		X				X		
	104	JP 6-152601	05-31-1994	MATSUSHITA ELECTRIC IND CO. LTD.		X				X		
	105	JP 7-254900	10-03-1995	FUJITSU LTD.		X				X		
	118	EP 0 384 876 B1	08-29-1990	IBM CORPORATION								

[1]Enter Office that issued the document, by the two-letter code.

NON-PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Exmr. Initials	Ref. No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	28	MACEDONIA, Michael R. et al., "A Taxonomy for Networked Virtual Environments", Immersive Telepresence, pp. 48-56
	29	FUNKHOUSER, Thomas A., "RING: A Client-Server System for Multi-User Virtual Environments", 1995 Symposium on Interactive 3D Graphics, pp. 85-209, Monterey, CA
	30	VAN HOOK, Daniel J. et al., "An Approach to DIS Scaleability", 11th DIS Workshop, pp. 1-9, September 26-30, 1994
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Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 6

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In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

NON-PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

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EFS ID:	8518810
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	26137
Filer:	Charles F. Wieland III/Christine Becker
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	**MAIL STOP REEXAMINATION**
U.S. Patent No. 6,226,686	Group Art Unit: 3992
Jeffrey J. Rothschild et al.	Examiner:
Issued: September 28, 1999	Confirmation No.: 1071
Reexamination Control No.: 90/011,036	Information Disclosure Statement Under 37 C.F.R. § § 1.97, 1.98 and 1.555
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

FIRST INFORMATION DISCLOSURE STATEMENT

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

Sir:

The documents cited on the attached form, PTO-1449, are being called to the attention of the Examiner. They were identified during litigation concerning the above-captioned patent or a related patent. Copies of the documents are being submitted herewith, except copies of U.S. patents are not included because they are not required under 37 C.F.R. § 1.98(a). It is respectfully requested that the cited documents be expressly considered during the prosecution of this reexamination proceeding, and the documents be made of record therein and appear among the "references cited" on any reexamination certificate to issue therefrom.

Applicant believes that no fee is required for submission of this statement. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 02-4800. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: September 28, 2010

By: _____
Charles F. Wieland III
Registration No. 33096

Customer No. 21839
703 836 6620

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

CERTIFICATE OF SERVICE

It is hereby certified by the undersigned that a true copy of the foregoing First Information Disclosure Statement, PTO-1449 Form(s) and copies of the cited documents were sent via courier to:

NOVAK DRUCE + QUIGG, LLP
1000 Louisiana Street
53rd Floor
Houston, Texas 77002

on this 28th day of September, 2010.

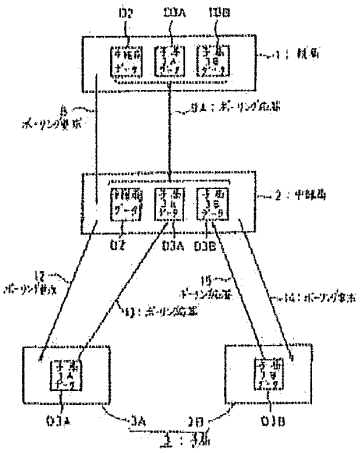
Charles F. Wieland III
Registration No. 33096

POLLING METHOD FOR LAYER TYPE DATA TRANSMISSION SYSTEM

Publication number: JP2002262 (A)
Publication date: 1990-01-08
Inventor(s): HINO NORIAKI +
Applicant(s): FUJI FACOM CORP +
Classification:
- International: ***H04L12/44; H04Q9/00;*** **H04L12/44; H04Q9/00;** (IPC1-7): H04L11/00; H04L12/44; H04Q9/00
- European:
Application number: JP19880147106 19880615
Priority number(s): JP19880147106 19880615

Abstract of **JP 2002262 (A)**

PURPOSE:To improve the efficiency of data collection by dividing station numbers at polling request into specific number to stations and a group number in common to plural stations so as to allow the polling in the layer type data transmission system to apply in the unit of one and plural stations. CONSTITUTION:A master station 1 uses a group station number and sends a polling request 8 to a relay station 2. In addition to each specific station number, the same group station number is assigned to the relay station 2 and slave stations 3A, 3B. Then the relay station 2 applies in advance polling to collect data D3A, D3B of slave stations 3A, 3B having the group station number and stores them. Then the relay station 2 transmits the data D2 of the relay station 2 and the data D3A of the slave station 3A and the data D3B of the slave station 3B together with polling reply 9A in response to the polling request 8 sequentially to the master station 1. Thus, the polling is applied with a required minimum number of times and in the unit of required minimum stations.



⑲日本国特許庁(JP)　⑪特許出願公開

⑫公開特許公報(A)　平2−2262

⑤1Int.Cl.⁵	識別記号	庁内整理番号	⑬公開　平成2年(1990)1月8日
H 04 L 12/44			
H 04 Q 9/00	3 1 1 B	6945−5K	
	3 2 1 D	6945−5K	
		7830−5K	H 04 L 11/00　3 4 0

審査請求　未請求　請求項の数 1　(全4頁)

⑤4発明の名称　階層型データ伝送システムのポーリング方法

⑳特　願　昭63−147106
㉒出　願　昭63(1988)6月15日

⑦2発明者　日野　範明　東京都日野市富士町1番地　富士フアコム制御株式会社内
⑦1出願人　富士フアコム制御株式会社　東京都日野市富士町1番地
⑦4代理人　弁理士　山口　巖

明　細　書

1．発明の名称　階層型データ伝送システムのポーリング方法

2．特許請求の範囲

1）親局、この親局の下位局としての複数の中継局、この中継局の下位局としての複数の子局を備えた階層型データ伝送システムにおいて、

所定の前記中継局および該中継局に属する所定の1または複数の前記子局を、またはこの中継局に属する所定の複数の子局を、一括指定するグループアドレスを設け、

前記中継局は予め少なくとも自局が関わる前記グループアドレスに属する前記子局を順次指定して各当該の子局からそのデータを収集し、

前記親局は前記グループアドレスを用い、このグループアドレスに関わる前記中継局を指定してデータ送信を要求し、

当該の中継局はこの要求に応じて、このグループアドレスで指定される各局のデータとしての、自局の本来のデータまたは(および)前記の収集で得た子局のデータを、前記親局へ一括送信するようにしたことを特徴とする階層型データ伝送システムのポーリング方法。

3．発明の詳細な説明

【産業上の利用分野】

本発明は親局、この親局の下位局としての複数の中継局、この中継局の下位局としての複数の子局、を備えた階層型データ伝送システムであって、

前記中継局は自局に属する子局にポーリング要求を発してその子局のデータを収集し、前記親局は前記中継局にポーリング要求を発してその中継局または(および)その中継局に属する子局のデータを収集するものであるような階層型データ伝送システムのポーリング方法に関するもので、

特にポーリングの回数を極力少なくしながら、必要なデータの収集を行い得るようにしたポーリング方法に関する。

なお以下各図において同一の符号は同一もしくは相当部分を示す。

【従来の技術】

この種の階層型データ伝送システムにおいて上位局が下位局のデータを収集する方式として、上位局より目的の下位局に対してデータの送信を要求し、当該の下位局はこれに応答してデータを伝送するポーリング方式がある。

この場合、上位局が1回のポーリングで、データ送信要求時に指定した特定の1局のデータのみを収集するのが一般的である。

【発明が解決しようとする課題】

ところが階層的にデータ伝送システムが構成されている場合、ある局に対してポーリングを行なったとき、その局のデータだけしか収集できないとすれば、その局に接続された下位局のデータを収集するためには、下位局のデータをその局のデータの中に包含させるか、もしくはその局を中継して下位局に対してポーリングを行なわせる等の処置をとらなければならない。

前者の場合は自局のデータの中に下位局のデータを組込むための編集処理が必要な上、上位局になるに従って編集されるデータ量が増大することになる。また後者の場合は局数分のポーリング手順を実行しなければならない。

即ち第2図は従来技術による階層型データ伝送システムの構成例である。同図において親局1が中継局2のデータD2と子局3(3A)のデータD3Aおよび子局3(3B)のデータD3Bを収集するには、前記の後者の場合、まず親局1から中継局2に対して中継局2の局番，子局3Aの局番，子局3Bの局番を1回ずつ指定してポーリング要求8を発し、また中継局2は子局3に対し子局3Aの局番，子局3Bの局番をそれぞれ指定してポーリング要求12,14を発する。

この要求に応じて子局3A,3Bは中継局2へそれぞれポーリング応答13,15と共に自局のデータD3A，D3Bを送信し、さらに中継局2は親局1へそれぞれポーリング応答91,92,93と共に自局のデータD2,子局3Aのデータ D3A，子局3Bのデータ D3Bを送信する。

なおこの場合、親局1から中継局2へのポーリングと、中継局2から子局3Aおよび子局3Bへのポーリングとは同期させてもよいし、非同期で行なってもよい。この方式では親局1から中継局2へのポーリング手順は3回行わなければならない。

また前記の前者の場合、中継局2のデータD2に子局3Aのデータ D3Aおよび子局3Bのデータ D3Bを編集して含めるものである。このようにすれば1回のポーリングで処理できるが、子局3Aのデータ D3Aと子局3Bのデータ D3Bとを予め中継局2のデータD2に組込む処理が必要である。また，この方式ではいずれかの局のデータだけを収集したい場合にも全局のデータを収集することになり、合理的ではない。

そこでこの発明の課題は階層型データ伝送システムにおけるポーリングにおいて、親局が中継局を介し、従来のように一回のポーリングで特定の局のデータだけを収集するほかに、親局が中継局へ、中継局および（または）子局の複数局を一括指定るすグループアドレスを用いてポーリング要求を行い、複数の局のデータを一括して収集するポーリング方法を提供することによって、効率的にデータ収集を行うことにある。

【課題を解決するための手段】

前記の課題を解決するために本発明の方法は、『親局（1など）、この親局の下位局としての複数の中継局（2など）、この中継局の下位局としての複数の子局（3など）を備えた階層型データ伝送システムにおいて、

所定の前記中継局および該中継局に属する所定の1または複数の前記子局を、またはこの中継局に属する所定の複数の子局を、一括指定するグループアドレスを設け、

前記中継局は予め少なくとも自局が関わる前記グループアドレスに属する前記子局を（ポーリング要求12,14などにより）順次指定して各当該の子局から（ポーリング応答13,15などにより）そのデータを収集し、

前記親局は（ポーリング要求8などにより）前記グループアドレスを用い、このグループアドレスに関わる前記中継局を指定してデータ送信を要

求し、

当該の中継局はこの要求に応じて（ポーリング応答9Aなどにより）、このグループアドレスで指定される各局のデータとしての、自局の本来のデータまたは（および）前記の収集で得た子局のデータを、前記親局へ一括送信するようにする。

【作　用】

この発明は、ポーリング要求時の局番を局によって個有の番号と複数の局に共通なグループ番号（グループアドレス）に分けることによって階層型データ伝送システムにおけるポーリングを1局単位および複数局単位で行えるようにし、効率的なデータ収集を可能にするものである。

【実施例】

第1図はこの発明による階層システムの構成例を示す。親局1はグループ局番（グループアドレス）を用いて中継局2に対しポーリング要求8を送信する。

この例では中継局2，子局3Aおよび3Bはそれぞれの固有の局番のほかに、同一の前記グループ局番（グループアドレス）を割当てられているものとする。そして中継局2は予めポーリングによってこのグループ局番を持つ子局3Aと3Bとのデータ D3AとD3Bとを収集し保持しているものとする。

さて中継局2は前記のポーリング要求8に応じてポーリング応答9Aと共に中継局2のデータD2，子局3Aのデータ D3A，子局3Bのデータ D3Bを順次親局1に伝送する。

親局1は特定の局のデータのみを収集したい場合には、従来と同様に個有の局番によってポーリングすることもできる。

【発明の効果】

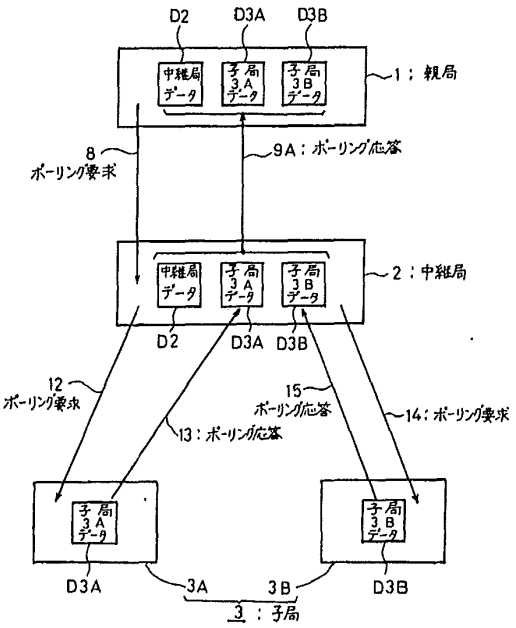
本発明によれば階層型データ伝送システムにおいて、親局が中継局へ、中継局または（および）子局の複数局を一括指定するグループ局番を用いてポーリングを行い、このグループ局番に属する局のデータを一括収集するようにしたので、ポーリング動作を必要最小限の回数で、かつ必要最小限の局の単位で行うことができるため、効率的なデータ伝送を行うことができる。またその実現のために複雑な手順を必要としない。

4．図面の簡単な説明

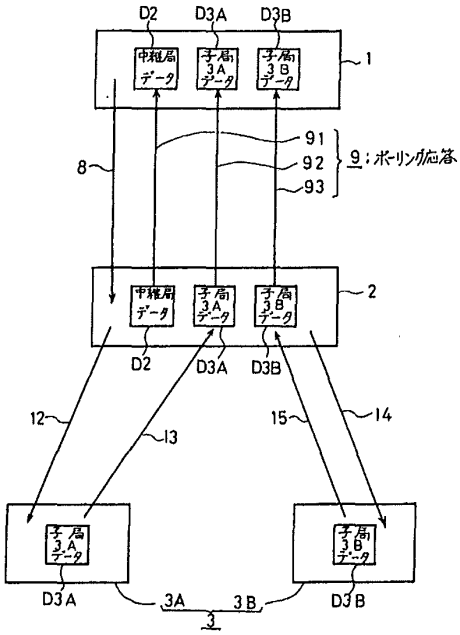
第1図は本発明の一実施例としての階層型データ伝送システムの構成を示す図、第2図は第1図に対応する従来の階層型データ伝送システムの構成例を示す図である。

1……親局、2……中継局、3（3A，3B）……子局、D2 ……中継局データ、D3A……子局3Aのデータ、D3B……子局3Bのデータ、8……中継局へのポーリング要求、9A ……中継局のポーリング応答、12……子局3Aへのポーリング要求、13……子局3Aのポーリング応答、14……子局3Bへのポーリング要求、15……子局3Bのポーリング応答。

代理人弁理士　山　口　巖



第1図



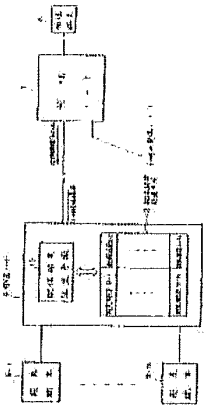
第2図

MULTIPLE ADDRESS ELECTRONIC MAIL DISTRIBUTION RESULT INFORMING SYSTEM

Publication number: JP2192344 (A)
Publication date: 1990-07-30
Inventor(s): SHINAGAWA ICHIRO +
Applicant(s): FUJITSU LTD; FUJITSU DAIICHI TSUSHIN SOFT +
Classification:
- International: ***G06F13/00; H04L12/54; H04L12/58;*** **G06F13/00; H04L12/54; H04L12/58;** (IPC1-7): H04L12/54; H04L12/58
- European:
Application number: JP19890009910 19890120
Priority number(s): JP19890009910 19890120

Abstract of **JP 2192344 (A)**

PURPOSE:To reduce the number of times of a return processing and to suppress traffic between nodes from being increased by sending a distribution result from a reception node comprehensively starting from the one for which a processing is finished at every prescribed term sequentially. CONSTITUTION:In the case of returning the distribution result of a multiple address electronic mail 10 to destination terminals 9-1 to 9-N in the reception node 8 from the node 8 to an outgoing node 7 after transferring the mail 10 in which plural destination terminals 9-1 to 9-N housed in the reception node are simultaneously designated from the outgoing node 7 housing an outgoing terminal 6 to the reception node 8, a distribution result return means 13 in the node 8 returns the distribution result generated within the prescribed term out of the distribution results 11-1 to 11-N addressed for the destination terminals 9-1 to 9-N to the node 7 comprehensively. In such a case, trade-off between return time to the node 8 and the increment of a traffic quantity due to each return operation can be set at a desired state by adjusting the above stated term.



⑲日本国特許庁(JP)　⑪特許出願公開

⑫公開特許公報(A)　平2−192344

⑤Int.Cl.[5]　識別記号　庁内整理番号　⑬公開　平成2年(1990)7月30日

H 04 L 12/54
12/58

7830−5K　H 04 L 11/20　101 B

審査請求　未請求　請求項の数 1　(全10頁)

⑭発明の名称　同報電子メール配信結果通知方式

⑳特　願　平1−9910
㉒出　願　平1(1989)1月20日

⑫発明者　品川　一郎　神奈川県横浜市港北区新横浜3丁目9番18号　富士通第一通信ソフトウエア株式会社内
⑪出願人　富士通株式会社　神奈川県川崎市中原区上小田中1015番地
⑪出願人　富士通第一通信ソフトウエア株式会社　神奈川県横浜市港北区新横浜3丁目9番18号
⑭代理人　弁理士　大菅　義之　外1名

明　細　書

1．発明の名称

同報電子メール配信結果通知方式

2．特許請求の範囲

発信端末(6)を収容する発信ノード(7)から受信ノード(8)に、該受信ノードが収容する複数の宛先端末(9-1〜9-N)を同時指定した同報電子メール(10)を転送した後、前記受信ノード(8)における前記各宛先端末(9-1〜9-N)への前記同報電子メール(10)の配信結果(11)を前記受信ノード(8)から前記発信ノード(7)へ返送する場合の同報電子メール配信結果通知方式において、

前記受信ノード内(8)に、

前記同報電子メール(10)に対応する前記各宛先端末(9-1〜9-N)の配信結果(11-1 〜11-N)を判明したものから記憶する配信結果記憶手段(12)と、

所定期間毎に、前記同報電子メール(10)に対応して該所定期間内に前記配信結果記憶手段(12)に新たに記憶された各配信結果(11)を前記発信ノード(7)に一括して返送する配信結果返送手段(13)とを有することを特徴とする同報電子メール配信結果通知方式。

3．発明の詳細な説明

〔概　要〕

蓄積交換方式による電子メールサービスを提供するノードを、複数相互に接続して構成されるメールネットワークにおいて、発信端末を収容する発信ノードから受信ノードに該受信ノードが収容する複数の宛先端末を同時指定した同報電子メールを転送した後、受信ノードにおける各宛先端末への同報電子メールの配信結果を受信ノードから発信ノードへ返送する場合の同報電子メール配信結果通知方式に関し、

受信ノードから発信ノードに配信結果を順次転送できるようにすると共に、ノード間のトラヒック量の増大を抑えることを目的とし、

受信ノード内に、同報電子メールに対応する各

宛先端末の配信結果を生起したものから記憶する配信結果記憶手段と、所定期間毎に、同報電子メールに対応して該所定期間内に配信結果記憶手段に新たに記憶された各配信結果を発信ノードに一括して返送する配信結果返送手段とを有するように構成する。

〔産業上の利用分野〕

本発明は、蓄積交換方式による電子メールサービスを提供するノードを、複数相互に接続して構成されるメールネットワークにおいて、発信端末を収容する発信ノードから受信ノードに、該受信ノードが収容する複数の宛先端末を同時指定した同報電子メールを転送した後、受信ノードにおける各宛先端末への同報電子メールの配信結果を受信ノードから発信ノードへ返送する場合の同報電子メール配信結果通知方式に関する。

〔従来の技術〕

電子メールサービスは、メッセージを蓄積交換方式（パケット交換等）のデータ伝送サービス網を利用してユーザ間に送配信するサービスであり、データ、ファクシミリ、音声といったメディアに関係なく適用できるという特徴を有する。そして、ユーザの発信端末からのメッセージは、その発信端末が収容される発信ノード（局）内のメッセージ転送機能により、相手の宛先端末が収容される受信ノードに転送される。受信ノードでは、受け取ったメッセージを対応する宛先端末に配信する。この場合の宛先端末としては、受信ノードからの配信に対して自動応答ができるものもあるが、自動応答ができない端末の場合には、配信されたメッセージを一時蓄積するメールボックスを有し、ここに蓄積されたメッセージを宛先端末が取り出す方式で電子メールサービスが提供される。

上記電子メールサービスにおいて、宛先として複数の宛先端末が指定された同報電子メール（以下、同報メッセージと呼ぶ）がある場合を考える。これを第8図に示す。例えば、発信端末1からのメッセージは、発信ノード2を介して受信ノード3。に転送され、それが収容する宛先端末4。－1～4。－nに配信される。なお、同時に受信ノード3、に転送され、それが収容する宛先端末4、－1～4、－mに配信されるようにしてもよい。この場合発信ノードは、宛先端末を収容する受信ノード別に同報メッセージを転送することになる。また、発信ノード2、受信ノード3。、3、の他にも他ノード5等がネットワークとして接続される。更に、発信ノード2は受信ノードとなり得、受信ノード3。、3、は発信ノードとなり得る。

ここで、各受信ノード例えば受信ノード3。では、配下の各宛先端末4。－1～4。－nへの正常な配信が完了したか又は何らかの原因で正常な配信ができず配信が不完了であったかを示す各宛先毎の配信結果を、発信ノード2に通知する必要があるが、配信の完了／不完了の事象の生起は、各端末の運用状況等の影響で、一般にはランダムとなる。

この場合、あるメッセージについての1つの受信ノードでの配信結果を発信ノードへ通知する契機としては、第1の従来例として、受信ノード内の全宛先端末についての配信結果が判明した時点で行う方式があり、第2の従来例として、受信ノード内の宛先端末毎に、配信結果が判明した時点で個々に行う方式がある。

〔発明が解決しようとする課題〕

しかし、上記第1の従来例の場合、1つの受信ノードに対する宛先端末数が多い場合、受信ノード側で全ての宛先端末に対する配信結果が得られるまで待たなければならないため、発信ノード側で配信結果を得るまでに時間がかかりすぎるという問題点を有している。

また、第2の従来例の場合、各宛先端末毎に受信ノードから発信ノードに配信結果の返送動作を行うため、配信結果通知のためのトラヒックが増大してしまうという問題点を有している。

本発明は、受信ノードから発信ノードに配信結果を順次転送できるようにすると共に、ノード間のトラヒック量の増大を抑えることを目的とする。

〔課題を解決するための手段〕

第１図に、本発明のブロック図を示す。本発明は、発信端末６を収容する発信ノード７から受信ノード８に、該受信ノードが収容する複数の宛先端末９－１～９－Ｎを同時指定した同報電子メール１０を転送した後、受信ノード８における各宛先端末９－１～９－Ｎへの同報電子メール１０の配信結果を受信ノード８から発信ノード７へ返送する場合を対象とする。なお、発信ノード７から転送される同報電子メール１０は、他の特には図示しない受信ノードが収容する宛先端末にも同時に転送されるようにしてもよい。

第１図において、受信ノード８内に設けられる配信結果記憶手段１２は、同報電子メール１０に対応する各宛先端末９－１～９－Ｎの配信結果１１－１～１１－Ｎを記憶する手段である。配信結果１１－１～１１－Ｎは、例えば各宛先端末９－１～９－Ｎへの正常な配信が完了したか又は何らかの原因で正常な配信ができず配信が不完了であったかを示す情報であり、その生起は、各端末の運用状況等の影響で一般にはランダムとなり、従って、各宛先端末９－１～９－Ｎ毎の配信結果１１－１～１１－Ｎは、判明したものから配信結果記憶手段１２へ記憶され、宛先端末間で時間的ずれを生じ得ることになる。

次に、配信結果返送手段１３は、所定期間毎に、同報電子メール１０に対応して該所定期間内に配信結果記憶手段１２に新たに記憶された各配信結果１１（１１－１～１１－Ｎのうちいずれか）を発信ノード７に一括して返送する手段である。この場合、配信結果記憶手段１２への配信結果１１の記憶動作時に、例えば返送要求を発生させて特には図示しない待ちキューにつないでおき、前記所定期間毎にこの待ちキューの内容を参照し、返送要求が発生している場合に配信結果記憶手段１２内の配信結果１１をアクセスするようにすれば効率的な処理を行える。なお、配信結果記憶手段１２への配信結果１１の記憶動作及び配信結果返送手段１３による返送処理は、例えば同報電子メール１０が複数受信された場合の各々で行われる。

〔作　　用〕

発信端末６を収容する発信ノード７から受信ノード８に、該受信ノードが収容する複数の宛先端末９－１～９－Ｎを同時指定した同報電子メール１０を転送した後、受信ノード８における各宛先端末９－１～９－Ｎへの同報電子メール１０の配信結果を受信ノード８から発信ノード７へ返送する場合、受信ノード８内の配信結果返送手段１３が所定期間毎に、各宛先端末９－１～９－Ｎに対する配信結果１１－１～１１－Ｎのうち、上記所定期間内に生起した配信結果を発信ノード７に一括して返送する。

この場合、発信ノード８への返送時間と、各返送動作によるトラヒック量の増大とのトレードオフは、配信結果返送手段１３が配信結果１１の返送を行う場合の前記所定期間を調整することにより、所望の状態に設定することができる。

従って、発信ノード７から見た場合、受信ノード８からの配信結果１１は、所定期間毎に判明した配信結果から順に一括して送られてくることになり、受信ノード８側で全ての宛先端末９－１～９－Ｎに対する配信結果１１－１～１１－Ｎが揃うまで待つ必要がなくなる。

一方、ネットワークとして見た場合、配信結果１１を所定期間毎に一括して送ることにより、個別に送る場合に比較してトラヒック量の増大を抑えることができる。

〔実　　施　　例〕

以下、図面を参照しながら本発明の実施例を説明する。

まず、本実施例の対象とする電子メールネットワークのシステム構成は、既に説明した第８図と同様であるため、その説明は省略する。

第２図は、第８図の受信ノード３。の構成を示した図である。なお、受信ノード３、も同様の構成である。

第８図の発信ノード２等の他のノードとの間を結ぶ回線は、回線対応部１４に収容され、一方、宛先端末４。－１～４。－ｎとの間を結ぶ回線は、

回線対応部１５に収容され、共に多重化回路１６を介して中央制御装置（以下、ＣＰＵ）１７に入力する。

ＣＰＵ１７には、記憶装置（以下、ＭＭ）１８が接続され、ＭＭ１８上には受信メッセージ管理ブロック１９、キューターミナル２０及びメッセージ識別ブロック２１が設けられる。これらについては、後述する。

上記受信ノード３。（第８図）を中心とする本実施例の動作につき以下に説明する。

まず、第８図の発信ノード２は、それが収容する発信端末１からの一つのメッセージ（メール）の発信依頼を受ける毎に、そのメッセージの宛先（本発明に特に関連する同報メッセージの場合は複数の宛先となる）やその他のメッセージ属性情報等を、第３図に示すように発信メッセージ管理ブロック２２として記憶する。なお、これは特には図示しない発信ノード２内の記憶装置に記憶される。その後に、発信ノード２は各宛先に対応する宛先端末の収容ノードを識別し、自ノード以外の場合には、メッセージの本体と、発信メッセージ管理ブロック２２の内容（後述する）の写しを対応する受信ノード（第８図３。又は３、等）に転送し、各受信ノードから配信結果が返送されてくるのを待つ。

ここで、発信ノード２での発信メッセージ管理ブロック２２において、Ｍ。はメッセージ番号及びそのメッセージをいつ発信したか等の他のメッセージと区別するためのメッセージ属性情報を示し、Ｏ。は発信端末６の発信者識別子を示し、d_i（i=1～N;N は全宛先数）は第８図の宛先端末４。－１～４。－ｎ及び４、－１～４、－ｍを識別するための宛先識別子を示す。更に、s_i（i=1～N）は、上記各宛先端末からそれを収容する受信ノードを介して返送されてくる配信結果を示す。配信結果としては、後述するように完了又は不完了がある。

次に、第３図のように発信ノード２から例えば受信ノード３。に同報メッセージ２３として上記メッセージの転送が行われる場合について考える。

なお、以下では他の受信ノード３、等においても同様の動作を行うため、受信ノード３。のみの動作につき説明する。

受信ノード３。において、発信ノード２からメッセージの本体及び発信メッセージ管理ブロック２２が同報メッセージ２３として転送されてくると、まず、発信メッセージ管理ブロック２２を第２図に示すようにＭＭ１８に受信メッセージ管理ブロック１９として記憶し（第３図も参照）、また、メッセージ本体を発信メッセージ管理ブロック２２内の宛先識別子d_iで示される各宛先端末４。－１～４。－ｎに配信する。この配信動作は、各宛先端末に対して自動的に行っても、各宛先端末からのアクセスに基づいて行ってもよい。

上記配信動作の結果、各宛先端末４。－１～４。－ｎに対する各配信結果が完了（正常に宛先端末に配信された）又は不完了（何らかの原因で宛先端末に対して正常に配信できなかった）と判明した時点で、その状態を第４図に示すように、第２図ＭＭ１８内の受信メッセージ管理ブロック１９の各宛先識別子d_iに対応する部分に配信結果s_iとして記憶させる。

これと共に、受信ノード３。では、受信メッセージ管理ブロック１９の上記配信結果s_iを書き込んだ宛先端末に対応して、配信結果の発信ノード２に対する返送要求を生成し、この返送要求に基づいて、配信結果s_iを配信結果２４（第４図）として発信ノード２に返送する。

上記返送要求処理及び返送処理の詳細を以下に説明する。なお、第５図にメッセージ配信結果返送要求処理の動作フローチャート、第６図にメッセージ配信結果返送処理の動作フローチャートを示し、第７図に受信ノードにおけるメッセージ配信結果返送処理の状態図を示す。以下、これらの図に基づいて説明を行ってゆく。

まず、第２図の受信ノード３。に収容される宛先端末４。－１～４。－ｎのうち何れかに対応する配信結果が判明する毎に、第５図の動作フローチャートがスタートする。なお、本動作フローチャートは、第２図のＣＰＵ１７が特には図示しな

いプログラムを動作させることにより実行される。

第5図S1では、判明したメッセージの配信結果を、第7図に示すように受信ノード3。内の受信メッセージ管理ブロック19の宛先識別子d_1に対応する部分にs_1として書き込む。同図の例では、宛先端末4。－1に対して配信が完了し、受信メッセージ管理ブロック19内の宛先識別子d_1に対応する部分に、完了を示す配信結果s_1が書き込まれる。また、それにほぼ続いて、宛先端末4。－2に対して配信が不完了となり、受信メッセージ管理ブロック19内の宛先識別子d_2に対応する部分に、不完了を示す配信結果s_2が書き込まれる。なお、宛先端末4。－nに対しては、現在配信中であるため、s_nはまだ書き込まれていない。

上記動作により、配信結果s_1が書き込まれると、次に第5図S2で、それに対応する返送要求を生成すると共に、受信メッセージ管理ブロック19内の対応する宛先識別子d_1の部分に、返送要求が生起して、かつ、未返送である旨の表示r_1（以下、便宜的にこれも返送要求と呼ぶ）を書き込む。第7図の例では、宛先識別子d_1及びd_2に対応する返送要求r_1及びr_2が続けて書き込まれる。

続いて、第5図S3で、返送要求の待ち合わせを行うための第2図MM18内に設けられているキューターミナル20（以下、これを待ち合わせキューQ_Wと呼ぶ）へ返送要求のキューイングを要求する。これに対して、第5図S4で待ち合わせキューQ_Wに同一メッセージに関する返送要求が既にキューイングされているか否かを判定し、キューイングされていなければ、第5図S5で待ち合わせキューQ_Wに対してキューの割り当てを行うと共に、割り当てられたキューに対応して第2図MM18内にメッセージ識別ブロック21を生成する。これは、第7図に示すようにそのキューに対応する受信メッセージ管理ブロック19のメッセージ番号を記憶しており、後述するようにそのキューを実行するときに、受信メッセージ管理ブロック19を参照できるようにするためのポインタである。以上、第7図の例では、まず、宛先識別子d_1に対する返送要求r_1に基づいて破線28のようにキューイングが実行される。

一方、第5図S3のキューイング要求の後、第5図S4で待ち合わせキューQ_W内に同一メッセージに関する返送要求が既にキューイングされていると判定された場合は、何もせずに第5図の返送要求処理を終了する。第7図の例では、前記宛先識別子d_1に対する返送要求r_1に基づいて破線25のようにキューイングが実行された後、宛先識別子d_2に対する返送要求r_2に基づいて破線26のようにキューイングを行おうとするが、既に同一メッセージに関するキューが存在するため、キューイングは行わない。

次に、以上のメッセージ配信結果返送要求処理に対して、第2図のCPU17は、一定時間毎に発生する割り込みにより、第6図のメッセージ配信結果返送処理を実行する。

すなわち、一定時間毎に割り込みが発生すると、まず、第6図S6で、待ち合わせキューQ_W（第2図MM18内のキューターミナル20）に返送要求がキューイングされているか否かを判定し、キューイングされていれば、第6図S7で、対応するメッセージ識別ブロック21（第7図参照）を参照して、そのメッセージ番号に対応する受信メッセージ管理ブロック19をアクセスし、受信メッセージ管理ブロック19内の返送要求r_1を検索し、返送要求表示がある部分を認識する。第7図の例では、宛先端末4。－1及び4。－2に対応する部分に、返送要求r_1及びr_2に返送要求表示がなされていることが認識される。

続いて、第6図S8で、その返送要求表示のある宛先識別子d_1に関するメッセージの配信結果s_1を抽出し、1つのデータに編集する。第7図の例では、配信結果s_1及びs_2が1つのデータに編集される。具体的には、パケットデータ等を作成する処理をいう。この場合、配信結果s_1は前記したように完了／不完了の何れかであるため、配信結果が判明した各宛先端末において、配信結果が同じ宛先端末に対応する宛先識別子d_1をま

とめて転送すれば、1回の転送量を減らすことができる。

上記動作の後、第6図S9で返送動作が実行され、第7図又は第4図の配信結果24として第2図の発信ノード2への転送動作が行われる。この配信結果24は、第4図の発信メッセージ管理ブロック22内の対応する部分に配信結果s_1として書き込まれる。これにより、発信ノード2は、転送したメッセージに対する配信結果を知ることができる。

上記動作の後、第6図S6に戻り、待ち合わせキューQ_wに他の返送要求が存在するか否かが判定され、存在すれば上記S7～S9の処理が繰り返され、待ち合わせキューQ_wに返送要求がなくなったらS6の判定がNOとなって返送処理を終了する。

以上に示した処理により、第7図の例では、始めの一定時間内に判明した宛先端末4.-1及び4.-2に対応する配信結果s_1及びs_2のみが、最初に配信結果24として発信ノード2に返送されるが、他の宛先端末に対応する配信結果s_iは、それが判明した時点が含まれる一定時間周期の終了毎に配信結果24として発信ノード2に返送される。従って、配信結果を宛先端末毎に発信ノードに返送する従来方式に比較して、配信結果の返送処理の回数を削減することができ、ノード間のトラヒックの増大を抑えることができる。一方、その受信ノードの全宛先端末に対応する配信結果が揃ってから発信ノードに返送する従来方式に比較して、一定時間毎に配信結果を返送できるため、発信ノード側での処理遅延を減らすことができる。

〔発明の効果〕

本発明によれば、発信ノードへの返送時間と、各返送動作によるトラヒック量の増大とのトレードオフは、配信結果返送手段が配信結果の返送を行う場合の所定期間を調整することにより、所望の状態に設定することができる。

従って、ネットワークとして見た場合、受信ノードからの配信結果は、所定期間毎に判明したものから順に一括して送ることにより、配信結果を宛先端末毎に発信ノードに返送する従来方式に比較して、その返送処理の回数を削減することができ、ノード間のトラヒックの増大を抑えることが可能となる。

一方、発信ノードから見た場合、受信ノードからは所定期間毎に判明した配信結果から順に一括して送られてくることになり、受信ノードの全宛先端末に対応する配信結果が揃ってから発信ノードに返送する従来方式に比較して、発信ノード側での配信結果に対する処理遅延を減らすことが可能となる。

更に、判明した配信結果を一括して送る場合、配信結果が共通なものをまとめて1つのデータに編集する等の操作が行えるため、効率の良いデータ転送が可能となり、これによるトラヒックの減少も可能となる。

4. 図面の簡単な説明

第1図は、本発明のブロック図、

第2図は、本発明による受信ノードの構成図、

第3図は、発信ノードから受信ノードへメッセージ転送を行った直後の状態説明図、

第4図は、受信ノードでのメッセージ配信状態説明図、

第5図は、メッセージ配信結果返送要求処理の動作フローチャート、

第6図は、メッセージ配信結果返送処理の動作フローチャート、

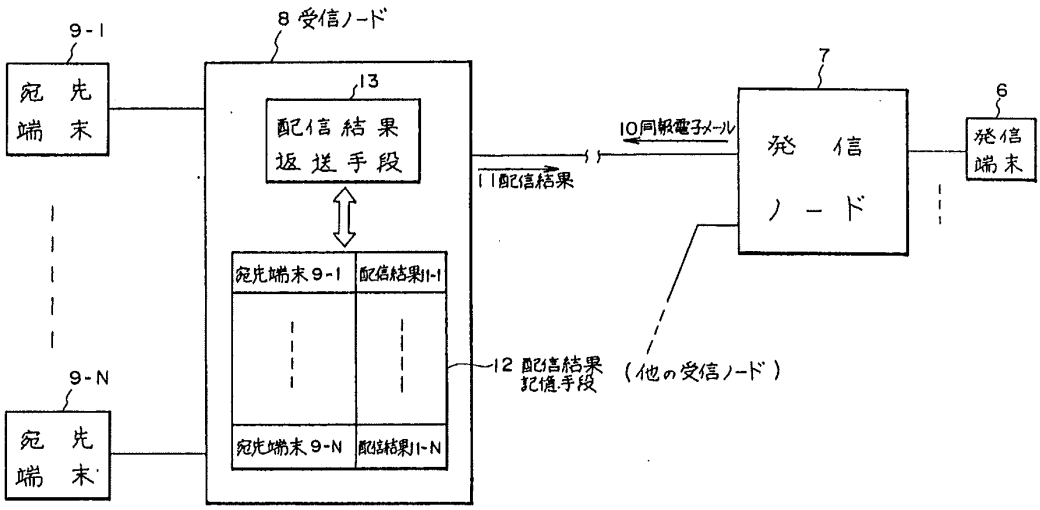
第7図は、受信ノードにおけるメッセージ配信結果返送処理の状態図、

第8図は、電子メールネットワークのシステム構成図である。

6・・・発信端末、
7・・・発信ノード、
8・・・受信ノード、
9-1～9-N・・・宛先端末、
10・・・同報電子メール、
11・・・配信結果、
12・・・配信結果記憶手段、

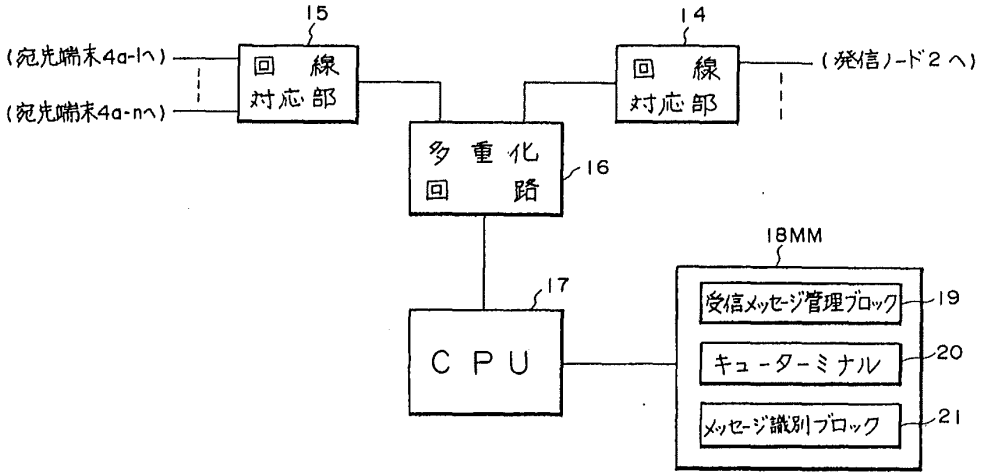
１３・・・配信結果返送手段，

特許出願人　　富士通株式会社
同　　上　　富士通第一通信ソフトウェア
株式会社



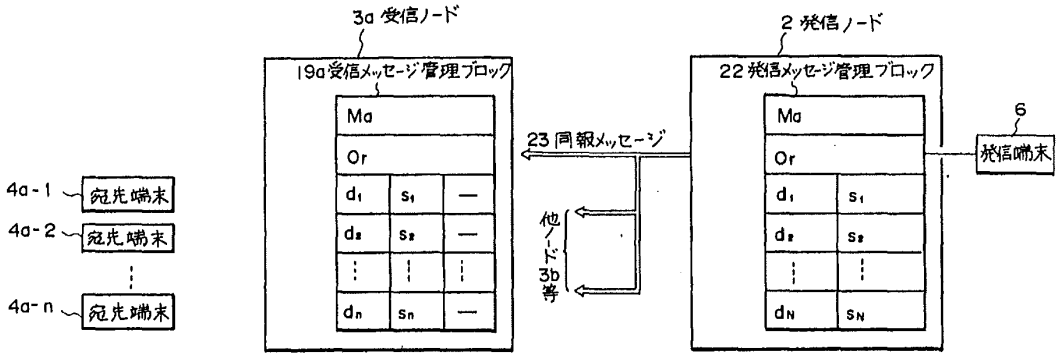
本発明のブロック図

第１図



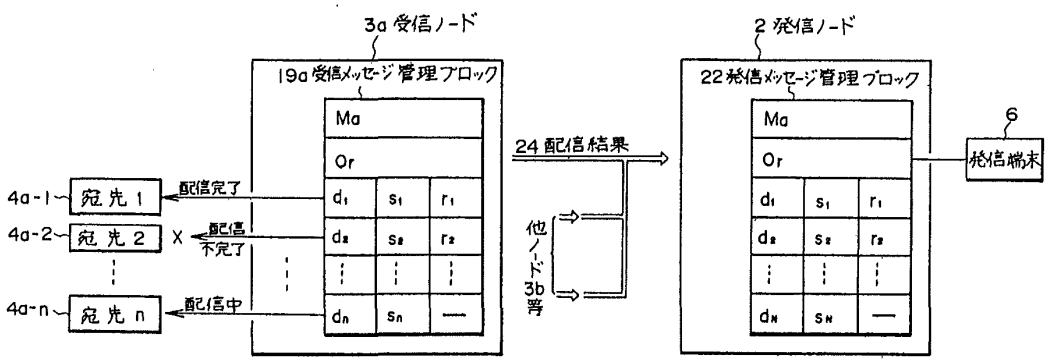
本発明による受信ノードの構成図

第 2 図



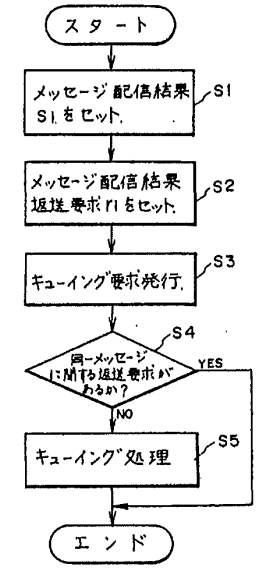
発信ノードから受信ノードへメッセージ転送を行った直後の状態説明図

第 3 図



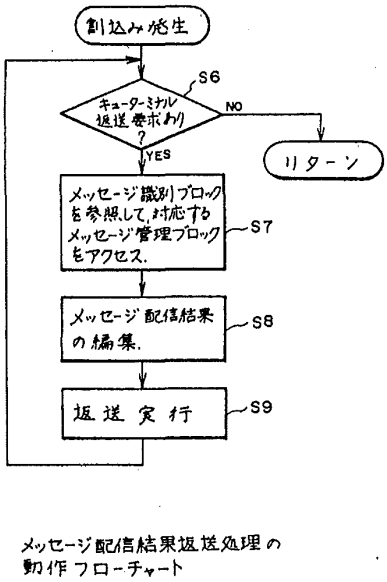
受信ノードでのメッセージ配信状態説明図

第 4 図



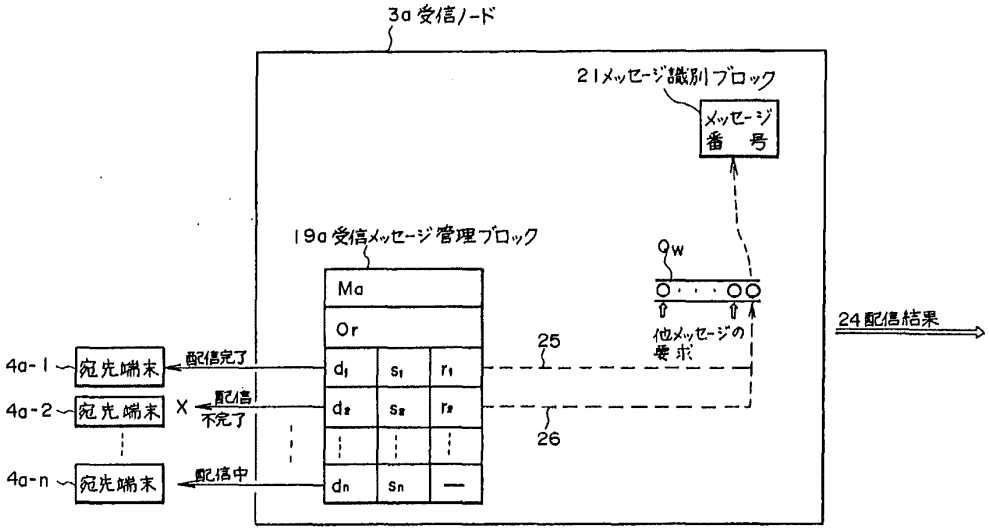
メッセージ配信結果返送要求処理の動作フローチャート

第 5 図



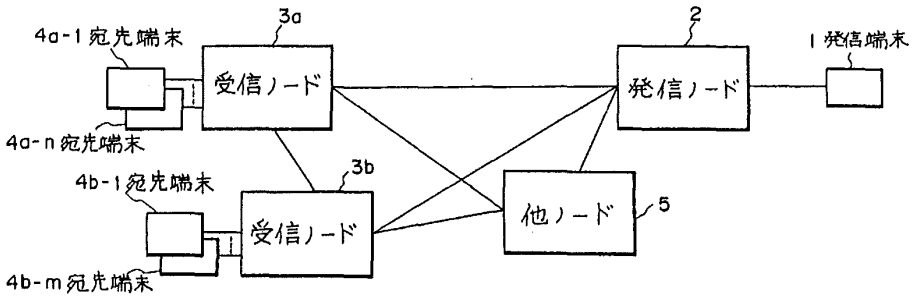
メッセージ配信結果返送処理の動作フローチャート

第 6 図



受信ノードにおけるメッセージ配信結果返送処理の状態図

第 7 図



電子メールネットワークのシステム構成図

第 8 図

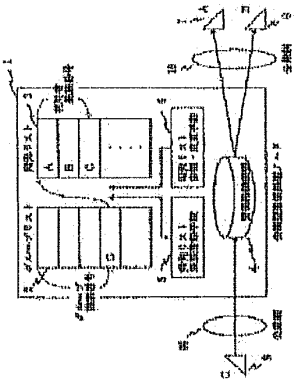
CONFERENCE TYPE DATA COMMUNICATION SYSTEM

Publication number: JP4249938 (A)
Publication date: 1992-09-04
Inventor(s): MAKINO ATSUHIRO; MAEYAMA YASUSHI +
Applicant(s): FUJITSU LTD +
Classification:
- International: ***H04L12/18;*** **H04L12/18;** (IPC1-7): H04L12/18
- European:
Application number: JP19910000454 19910108
Priority number(s): JP19910000454 19910108

Also published as:
JP3125305 (B2)

Abstract of **JP 4249938 (A)**

PURPOSE:To offer a means capable of performing the transmission/reception of information by using a destination list by plural users commonly and without cutting off a communication pass in a conference type data communication system by a text or image communication processing system. CONSTITUTION:A conference type communication processing node 1 is equipped with a group list 2 which stores the destination list in accordance with a group and the information to designate the storage area of the information, the destination list 3 which stores the network housing position information of the user comprising the group in accordance with the group, and an information accumulation device 4 to store the information transferred from a conference participating user once.; Also, it is equipped with a new registration means 5 for the destination list in accordance with the group, and a means 6 which refers to and changes the destination list in accordance with a group identification number designated by the user, and one group is comprised of the plural users, and an arbitrary user can perform bidirectional communication with another plural users.



(19)日本国特許庁（ＪＰ）　(12) **公開特許公報（A）**　(11)特許出願公開番号

特開平4－249938

(43)公開日　平成４年(1992)９月４日

(51)Int.Cl.[5]	識別記号	庁内整理番号	ＦＩ	技術表示箇所
Ｈ０４Ｌ　12/18				
		8529－5K	Ｈ０４Ｌ　11／18	

審査請求　未請求　請求項の数１(全　5　頁)

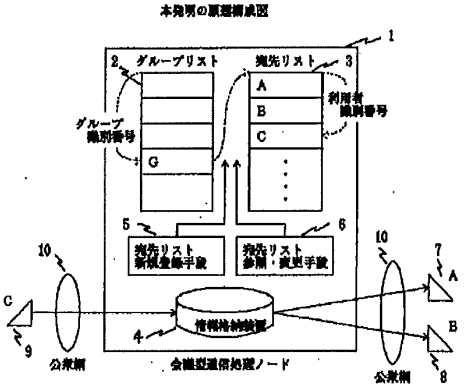
(21)出願番号　特願平3－454

(22)出願日　平成３年(1991)１月８日

(71)出願人　000005223
富士通株式会社
神奈川県川崎市中原区上小田中1015番地
(72)発明者　牧野　篤博
神奈川県川崎市中原区上小田中1015番地
富士通株式会社内
(72)発明者　前山　安司
神奈川県川崎市中原区上小田中1015番地
富士通株式会社内
(74)代理人　弁理士　井桁　貞一

(54)【発明の名称】　会議型データ通信方式

(57)【要約】
【目的】　テキストあるいは画像通信処理システムによる会議型データ通信方式に関し、宛先リストを複数の利用者が共通に所有し、通信パスの切断なしに情報の受信と送信を可能とする手段を提供することを目的とする。
【構成】　会議型通信処理ノード１に、グループ対応の宛先リストと情報の記憶領域を指定する情報を格納するグループリスト２と、グループ対応にグループを構成する利用者のネットワーク収容位置情報を格納する宛先リスト３と、会議利用者が転送した情報を一旦格納するための情報蓄積装置４を備え、該グループ対応の宛先リストの新規登録手段５と、利用者が指定したグループ識別番号に対応する宛先リストを参照・変更する手段６を有し、複数の利用者が１つのグループを構成して、任意の利用者が他複数の利用者と双方向通信を行うように構成する。



1

【特許請求の範囲】

【請求項1】　テキストあるいは画像通信処理システムによる会議型データ通信方式において、会議型通信処理ノード（1）に、グループ対応の宛先リストと情報の記憶領域を指定する情報を格納するグループリスト（2）と、グループ対応にグループを構成する利用者のネットワーク収容位置情報を格納する宛先リスト（3）と、会議利用者が転送した情報を一旦格納するための情報蓄積装置（4）を備え、該グループ対応の宛先リストの新規登録手段（5）と、利用者が指定したグループ識別番号に対応する宛先リストの参照・変更手段（6）を有し、複数の利用者が1つのグループを構成して、任意の利用者が他複数の利用者と双方向通信を行うことを特徴とする会議型データ通信方式。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は地理的分散した複数人が同一の情報をオンラインで相互にやりとりを行う会議型通信の実現方式に関する。複数の地点間でテレビ端末や電話機を使用して会議情報の交換を行うテレビ電話会議や、電話機を使用して3箇所以上の地点間で相互に会議を行う会議電話等は従来の電話網により普及してきたが、ＩＳＤＮやネットワークの高度化に伴い従来高価であったテレビ会議や会議型電話も急速に普及するようになってきた。

【0002】ネットワークを使用した会議型データ通信方式のシステム構成図を図6に示す。図において、21はネットワーク、22は会議端末A、23は会議端末B、24は会議端末C、25は会議端末Dを示す。会議端末A22，B23，C24，D25はそれぞれ、テレビ端末、ＦＡＸ、パソコン端末、電話機等からなり、テレビ端末で画像や音声を流したり、ＦＡＸ端末によりファクシミリ情報を同報通信で送信したり、パソコン端末からのキー入力によりテキストを他のパソコン端末にディスプレイ表示したりして、ネットワーク21を中継して相互に会議情報を交換するようになってきた。

【0003】

【従来の技術】現状のファクシミリ通信やメッセージ通信においては、発信利用者だけが利用できる宛先リストを指定して、発信者が転送した情報を該宛先リストに登録されている全ての宛先に転送するサービス（同報通信サービス）が実現されている。

【0004】即ち、図6のシステム構成図において、会議端末A22を発信端末とし、会議端末B23，C24，D25を着信端末とすると、ネットワーク21を構成する発信局に相手先リスト(B,C,D)を持ち、発信側から着信側に一方的に同報通信をおこない、着信側では同時に又は順次に会議情報を受信する。他の会議端末が発信端末となる場合も同様に、発信端末B，C，Dはそれぞれ相手先リスト(A,C,D),(A,B,D),(B,C,D)を持ち、発信側から着信側に一方的に同報通信を行っている。この場合発信側から他の着信側に情報を送信している時は、他の着信側からは発信側に情報を送信することは出来ないので、所謂双方向通信は行えない。

2

【0005】

【発明が解決しようとする課題】しかし従来の技術では次の2つの問題を抱えている。即ち

(1) 発信者対応に宛先リストを所有している為、会議通信等に利用する場合、会議出席者が個々に宛先リストを登録或いは変更しなければならず手間がかかる。

(2) 発信者対応に宛先リストを所有している為、片方向通信しかできない。情報を受信していた利用者が情報を転送する場合には、改めて発信する必要がある等利便性にかけている。

【0006】本発明は、宛先リストを複数の利用者が共通に所有し、通信パスの切断なしに情報の受信と送信を可能にする手段を提供することを目的とする。

【0007】

【課題を解決するための手段】本発明の原理構成図を図1に示す。図において、1は会議型通信処理ノード、2はグループ対応の宛先リストと情報の記憶領域を指定する情報を格納するグループリスト、3はグループ対応にグループを構成する利用者のネットワーク収容位置情報を格納する宛先リスト、4は会議利用者が転送した情報を一旦格納するための情報蓄積装置、5は該グループ対応の宛先リストの新規登録手段、6は利用者が指定したグループ識別番号に対応する宛先リストを参照・変更する手段、7は利用者A、8は利用者B、9は利用者C、10は公衆網を示す。

【0008】複数の利用者7，8，9が公衆網10を経由して会議型通信処理ノード1により1つのグループを構成して、任意の利用者が他複数の利用者と双方向通信を行うように構成する。宛先リストをグループのメンバーが共有し、グループで1つの宛先リストを登録・変更できるようにし、宛先リストをグループメンバーが共有することにより、発信者に依存しない会議通信を行うことができるようにする。

【0009】

【作用】本発明の処理シーケンス図を図2に示す。図は利用者Aが会議通信の登録要求を行い、利用者B及びCに同報通信を行い、同時に加入者Cから転送情報を加入者A及びBに通信する場合のシーケンスを示す。

①. 利用者Aからグループのメンバー収容位置の登録要求を行い、グループリスト2のグループ番号を捕捉し、該グループ番号に対応する宛先リスト3を作成し、情報格納装置4の情報格納エリアを捕捉する。

②. 処理ノード1における登録が完了すると、加入者Aに対して登録完了信号（グループ番号＋利用者Aの識別番号）が返送される。

③. 利用者Aは会議通信のため発信要求（グループ番号

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＋利用者Ａの識別番号）を処理ノード１に対して行い、グループ番号から宛先リスト３を選択し、宛先リスト３から発信者を除く全ての宛先に着信する。

④．利用者Ｂに対しては処理ノード１より着信指示（グループ番号＋利用者Ｂの識別番号）が送信され、利用者Ｂは利用者Ａからの情報を受信する。

⑤．利用者Ｃに対しても処理ノード１より着信指示（グループ番号＋利用者Ｃの識別番号）が送信され、利用者Ｃは利用者Ａからの情報を受信する。

⑥．処理ノード１から利用者Ａに対して着信指示の完了通知が送信される。

⑦．利用者Ｃから転送情報を送信するための転送要求（グループ番号＋利用者Ｃの識別番号＋転送情報）が処理ノード１に対して送信され、グループ番号＋利用者Ｃの識別番号で指定する情報格納エリアに受信情報を格納し、宛先リスト３から情報転送者Ｃを除く全ての宛先に受信情報を転送する。

⑧．処理部１から利用者Ａに対して転送情報（グループ番号＋利用者Ｃの識別番号＋転送情報）が送信され、同時に利用者Ｂに対しても転送情報（グループ番号＋利用者Ｃの識別番号＋転送情報）が送信される。

⑨．利用者Ｂから転送情報を他の利用者Ａ及びＣに送信する場合も、⑦，⑧と同様な処理により転送することが出来、それぞれの利用者の識別番号を付加することにより双方向通信が可能となる。

【００１０】

【実施例】本発明の実施例のブロック構成図を図３に示す。図において、11は会議型通信処理ノード、12はグループリスト、13は宛先リスト、14は情報格納装置、15はグループリスト管理部、16は宛先リスト管理部、17はグループ登録処理部、18は同報通信処理部、19はサービス受付部、20は公衆網を示す。

【００１１】公衆網20に接続される会議通信利用者を端末Ａ，Ｂ，Ｃとし、グループリスト12のグループリスト要素は宛先リストアドレスの有効／無効を"0" 或いは "1"により指定し、宛先リスト13の宛先リスト要素は情報エリアアドレスの有効／無効を"0" 或いは "1"により指定すると共に利用者収容位置情報を指定する。情報格納装置14は端末Ａ用、端末Ｂ用、端末Ｃ用の情報格納エリアを有し、宛先リスト13のアドレスによりエリアを指定される。

【００１２】実施例の処理要素と処理内容を図４に示す。図３と図４により実施例の処理方式を説明する。なお本構成例では、利用者番号をグループ内の通番として定義する方法をとっているが、利用者収容位置を利用者収容位置番号或いは利用者の申請した番号として定義してもよい。

【００１３】図４（ａ）はグループ登録時の処理方法、（ｂ）は通信時の処理方法を示す。

（ａ）グループ登録時はサービス受付部19で端末Ａからの信号を分析し、グループ登録要求を判定する。グループ登録処理部17で関連の処理モジュールを起動する。グループリスト管理部15で該当するグループ番号を捕捉し、宛先リスト管理部16で宛先リストを捕捉し、メンバーの収容位置を登録する。情報格納エリア14を捕捉し、利用者識別番号を生成する。

4

（ｂ）通信時はサービス受付部19で端末Ａからの信号を分析し、通信要求を判定する。同報通信処理部18で発信者識別番号対応の情報格納エリア14に受信情報を格納する。宛先メンバーの収容位置一覧で指定された端末Ｂ，Ｃに受信情報を同報転送する。宛先リスト管理部16で発信者識別番号から宛先リスト13を索引し、宛先リスト13から宛先メンバーの収容位置一覧を作成する。

【００１４】宛先リスト要素の実施例を図５に示す。端末Ａの情報格納エリアアドレスを1000、利用者収容位置情報を201-9222、端末Ｂの情報格納エリアアドレスを2000、利用者収容位置情報を777-1111、端末Ｃの情報格納エリアアドレスを3000、利用者収容位置情報をabc-defg、以下・・・とすれば、例えば端末Ａの会議通信に参加する場合、有効／無効表示を有効を意味する"1" に設定し、情報格納エリアアドレス"1000"と端末Ａの利用者収容位置情報201-9222が設定される。同様に端末Ｂが会議通信に参加する場合、有効／無効表示を有効を意味する"1" に設定し、情報格納エリアアドレス"2000"と端末Ｂの利用者収容位置情報777-1111が設定される。以下同様にして会議通信に参加する全ての端末が一覧表として作成される。会議通信に参加しない端末は、宛先リストに登記しないか、或いは有効／無効表示は無効を意味する"0" に設定される。

【００１５】

【発明の効果】(1) グループメンバーが共通の宛先リストを共有する事で、宛先リストの登録・更新をグループ単位に実施すれば良い。（従来はグループの各メンバーが個別に実施する必要があり、多くの手間が必要であり、且つ変更の誤りによって情報転送の過不足を招いていた。）

(2) 従来、発信時に指定した発信者対応の宛先リストに従って、後続する情報を転送していた。この為、発信者から複数の着信者への片方向の通信しかできなかった。本発明ではパス設定後、各メンバーは共通の宛先リストを利用する為、双方向の通信が可能になる。

【図面の簡単な説明】

【図１】　本発明の原理構成図

【図２】　本発明の処理シーケンス図

【図３】　実施例のブロック構成図

【図４】　処理要素と処理内容の実施例

【図５】　宛先リスト要素の実施例

【図６】　会議型データ通信方式のシステム構成図

【符号の説明】

1，11　会議型通信処理ノード

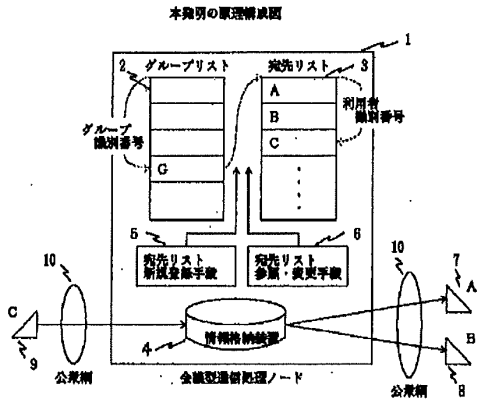
5

2，12　グループリスト
3，13　宛先リスト
4，14　情報格納装置
5　新規登録手段
6　参照・変更手段
7，8，9　利用者
10，20　公衆網
15　グループリスト管理部

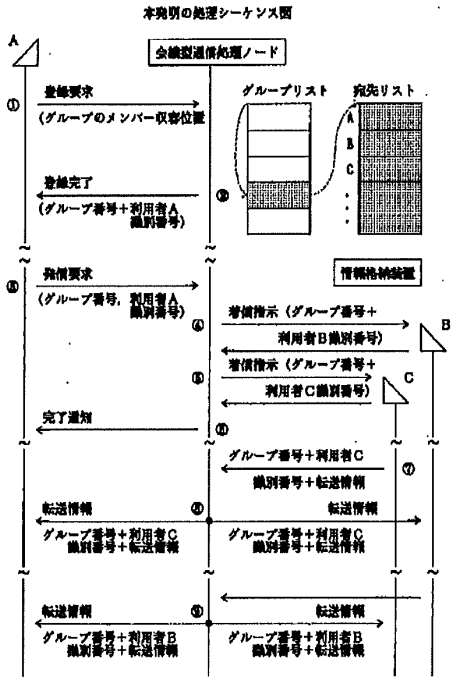
6

16　宛先リスト管理部
17　グループ登録管理部
18　同報通信処理部
19　サービス受付部
21　ネットワーク
22，23，24，25　会議端末

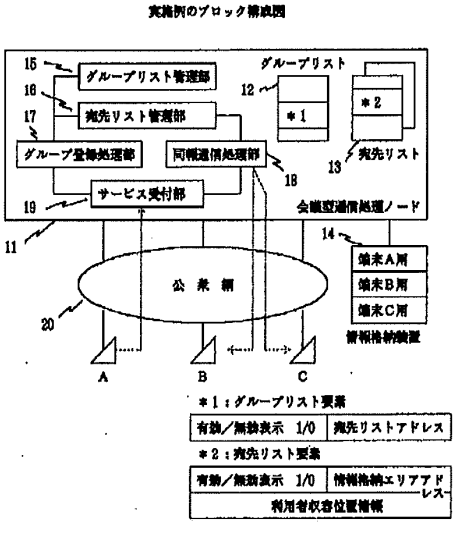
【図1】



【図2】



【図3】



【図4】

処理要素と処理内容の実施例

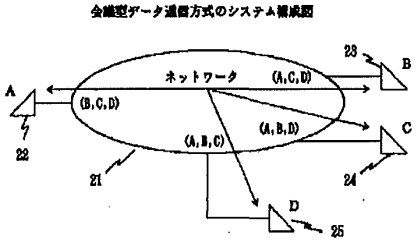
	(a) グループ登録時	(b) 通信時
サービス受付	端末からの信号分析し グループ登録要求判定	端末からの信号分析し 通信要求判定
グループ登録処理	関連処理モジュール起動	——
同報通信処理	——	発信者識別番号対応の情報格納エリアに受信情報格納 宛先メンバーの収容位置一覧で指定された端末に受信情報転送
グループリスト管理	グループ番号登録	——
宛先リスト管理	宛先リスト登録 メンバーの収容位置登録 情報格納エリア確保 利用者識別番号生成	発信者識別番号から宛先リスト索引 宛先リストから宛先メンバーの収容位置一覧作成

【図５】

宛先リスト重畳の実施例

A	0 / 1	1000
		201-9222
B	0 / 1	2000
		777-1111
C	0 / 1	3000
		abc-dafg
•	0 / 1	4000
		.....
•		.....
•		.....
•		.....

【図６】

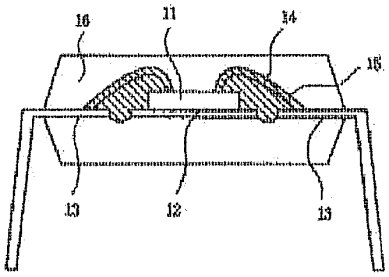


MANUFACTURE OF SEMICONDUCTOR DEVICE

Publication number: JP5211252 (A)
Publication date: 1993-08-20
Inventor(s): NOGUCHI HIDEAKI +
Applicant(s): NEC CORP +
Classification:
- International: ***H01L23/29; H01L23/31;*** **H01L23/28**; (IPC1-7): H01L23/29; H01L23/31
- European:
Application number: JP19920000057 19920106
Priority number(s): JP19920000057 19920106

Abstract of **JP 5211252 (A)**

PURPOSE:To enable high density wiring through suppression of deformation of bonding wires due to sealing pressure of resin during the molding step by coating and mold-sealing bonding wires.
CONSTITUTION:A semiconductor chip 11 is mounted on a lead frame island 12 and electrically connected by a lead frame 13 and bonding wires 14. A bonding wire 14 is coated with silicon resin 1; further, the whole including the chip 11 and the bonding wires 14 is mold-sealed with an epoxy resin 16. This step can avoid troubles such as contacts of bonding wires with resin molding pressure especially during the mold sealing step relaxed with silicon resin 15.



(19)日本国特許庁（ＪＰ）　(12)**公開特許公報**（Ａ）　(11)特許出願公開番号

特開平5－199257

(43)公開日　平成5年(1993)8月6日

(51)Int.Cl.[5]	識別記号	庁内整理番号	ＦＩ	技術表示箇所
Ｈ０４Ｌ　12/48				
Ｈ０４Ｑ　3/52	１０１　Ｚ	9076－5Ｋ		
		8529－5Ｋ	Ｈ０４Ｌ　11/ 20	Ｚ

審査請求　未請求　請求項の数１(全　４　頁)

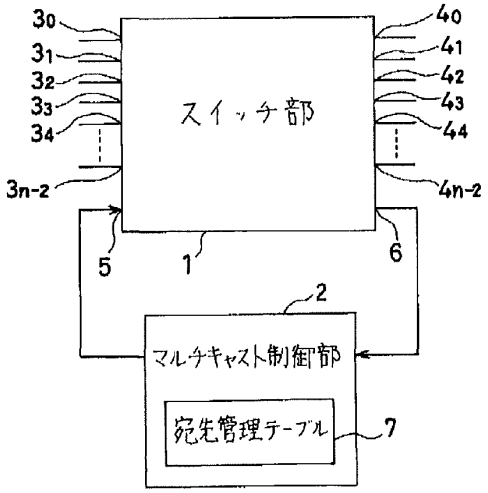
(21)出願番号　特願平4－8414

(22)出願日　平成４年(1992)１月21日

(71)出願人　000005821
松下電器産業株式会社
大阪府門真市大字門真1006番地
(72)発明者　浅野　弘明
大阪府門真市大字門真1006番地　松下電器産業株式会社内
(72)発明者　▲ます▼田　通憲
大阪府門真市大字門真1006番地　松下電器産業株式会社内
(74)代理人　弁理士　中島　司朗

(54)【発明の名称】　セルスイッチ

(57)【要約】
【目的】複数の宛先に同時にセルを送出できるセルスイッチを提供する。
【構成】スイッチ部１は、ヘッダ部と情報部とから構成された固定長のセルが任意の入力ポート3_0～3_{n-2}あるいは制御用入力ポート５に入力されたときに、入力されたセルのヘッダ部により単一の出力ポートが指定されている場合は、指定された出力ポートにそのセルを出力し、入力されたセルのヘッダ部により複数の出力ポートが指定されている場合は、制御用出力ポート６にそのセルを出力する。マルチキャスト制御部２は、スイッチ部１の制御用出力ポート６から出力されたセルを、そのヘッダ部で指定された出力ポートの数だけ複製し、複製した各セルのヘッダ部を単一の出力ポートの指定に変更して、スイッチ部１の制御用入力ポート５に供給する。



1

【特許請求の範囲】

【請求項1】　複数の入力ポートと、この入力ポートと同数の出力ポートと、制御用入力ポートと、制御用出力ポートとを備え、ヘッダ部と情報部とから構成された固定長のセルが任意の入力ポートあるいは制御用入力ポートに入力されたときに、入力されたセルのヘッダ部により単一の出力ポートが指定されている場合は、指定された出力ポートにそのセルを出力し、入力されたセルのヘッダ部により複数の出力ポートが指定されている場合は、制御用出力ポートにそのセルを出力するスイッチ手段と、

前記スイッチ手段の制御用出力ポートから出力されたセルを、そのヘッダ部で指定された出力ポートの数だけ複製し、複製した各セルのヘッダ部を単一の出力ポートの指定に変更して、スイッチ手段の制御用入力ポートに供給するマルチキャスト制御手段とを備えたことを特徴とするセルスイッチ。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、固定長のセルをそのヘッダの内容に従ってスイッチするセルスイッチに関するものである。

【0002】

【従来の技術】固定長のセルをそのヘッダの内容に従ってスイッチするセルスイッチとして、従来、例えば図4に示すようなものがあった（「データコミュニケーションインターナショナル」　September，1991　vol．20　No．1158～69ページ参照）。すなわちこの従来のセルスイッチは、例えば16入力16出力のスイッチであって、セルのヘッダ部に書かれた値に従い、それに対応する出力ポートにそのセルを転送する。具体的には、2入力2出力の基本スイッチが8行4列にわたって配置されており、各基本スイッチは、セルのヘッダ部に書かれた値のうち参照する値が0の場合には上方向へ、値が1の場合には下方向へセルを転送する。例えばヘッダ部に書かれた値が0110であるセルが入力ポート番号7の入力ポートから入力された場合、最初の基本スイッチでは最初の値0を参照して上方向に転送する。次段の基本スイッチでは次の値1を参照して下方向に転送する。同様にして、最後には出力ポート番号6の出力ポートに、入力されたフォーマットの姿でセルが出力される。このように、セルがいずれの入力ポートに入力されても、ヘッダ部に書かれた値が同一であるかぎり同一の出力ポートに出力される。

【0003】

【発明が解決しようとする課題】上記従来のセルスイッチでは、セルのヘッダ部に書かれた値に応じて出力ポートが唯一指定される。すなわち複数の宛先に同時に送信したいセルをスイッチすることができないという問題があった。本発明はかかる事情に鑑みて成されたものであり、複数の宛先に同時にセルを送出できるセルスイッチを提供することを目的とする。

2

【0004】

【課題を解決するための手段】本発明は、複数の入力ポートと、この入力ポートと同数の出力ポートと、制御用入力ポートと、制御用出力ポートとを備え、ヘッダ部と情報部とから構成された固定長のセルが任意の入力ポートあるいは制御用入力ポートに入力されたときに、入力されたセルのヘッダ部により単一の出力ポートが指定されている場合は、指定された出力ポートにそのセルを出力し、入力されたセルのヘッダ部により複数の出力ポートが指定されている場合は、制御用出力ポートにそのセルを出力するスイッチ手段と、このスイッチ手段の制御用出力ポートから出力されたセルを、そのヘッダ部で指定された出力ポートの数だけ複製し、複製した各セルのヘッダ部を単一の出力ポートの指定に変更して、スイッチ手段の制御用入力ポートに供給するマルチキャスト制御手段とを備えたことを特徴としている。

【0005】

【作用】スイッチ手段は、複数の入力ポートと、この入力ポートと同数の出力ポートと、制御用入力ポートと、制御用出力ポートとを備え、ヘッダ部と情報部とから構成された固定長のセルが任意の入力ポートあるいは制御用入力ポートに入力されたときに、入力されたセルのヘッダ部により単一の出力ポートが指定されている場合は、指定された出力ポートにそのセルを出力し、入力されたセルのヘッダ部により複数の出力ポートが指定されている場合は、制御用出力ポートにそのセルを出力する。マルチキャスト制御手段は、スイッチ手段の制御用出力ポートから出力されたセルを、そのヘッダ部で指定された出力ポートの数だけ複製し、複製した各セルのヘッダ部を単一の出力ポートの指定に変更して、スイッチ手段の制御用入力ポートに供給する。

【0006】

【実施例】以下、本発明の実施例を図面を用いて詳細に説明する。図1は本発明の一実施例におけるセルスイッチの構成図で、このセルスイッチは、スイッチ部1と、マルチキャスト制御部2とを備えている。スイッチ部1は、n入力n出力で、入力ポート3_0～3_{n-2}と、出力ポート4_0～4_{n-2}と、制御用入力ポート5と、制御用出力ポート6とを備えており、マルチキャスト制御部2は、宛先管理テーブル7を備えている。スイッチ部1は、従来のセルスイッチと同様の構成である。

【0007】図2は宛先管理テーブル7の内容の説明図で、宛先管理テーブル7は、論理チャネル番号フィールド9と、宛先フィールド10とを備えている。論理チャネル番号フィールド9には、論理チャネル番号が格納されており、宛先フィールド10には、論理チャネル番号に対応する複数の宛先番号が格納されている。図3はスイッチの対象である固定長のセルのフォーマットの説明

図で、セルは、ヘッダ部１２と、情報部１３とにより構成されている。ヘッダ部１２は、宛先番号フィールド１４と、論理チャネル番号フィールド１５とにより構成されている。情報部１３には、相手先に転送したい情報が格納されている。宛先番号フィールド１４には、スイッチ部１において出力ポート4_0～4_{n-2}あるいは制御用出力ポート６を選択するために用いられる宛先番号が格納されており、論理チャネル番号フィールド１５には、マルチキャスト制御部２において複数の宛先を判定するために用いられる論理チャネル番号が格納されている。なお、宛先が単一であるセルは、論理チャネル番号フィールド１５に論理チャネル番号が格納されておらず、宛先が複数であるセルは、宛先番号フィールド１４に宛先番号として固定の値ｎ－１が格納されている。

【０００８】次に動作を説明する。例えば、宛先番号フィールド１４に宛先番号ｎ－１が格納され、論理チャネル番号フィールド１５に論理チャネル番号ｍ１が格納されたセルが、スイッチ部１の任意の入力ポート3_0～3_{n-2}に入力されると、スイッチ部１が、セルの宛先番号フィールド１４の宛先番号ｎ－１を参照して、制御用出力ポート６にセルを出力する。このセルはマルチキャスト制御部２に入力され、マルチキャスト制御部２が、論理チャネル番号フィールド１５の論理チャネル番号ｍ１を参照して、宛先管理テーブル７の論理チャネル番号フィールド９を検索し、論理チャネル番号ｍ１に対応する宛先番号D_1，D_2，D_3を宛先フィールド１０から読み出す。そしてマルチキャスト制御部２が、入力されたセルと同一内容の情報部１３を有するセルを、宛先番号D_1，D_2，D_3の数すなわち３個複製し、これらセルの宛先番号フィールド１４に宛先番号D_1，D_2，D_3を各別に格納し、論理チャネル番号フィールド１５にヌル値（無効値）を格納して、スイッチ部１の制御用入力ポート５に順次供給する。これによりスイッチ部１が、セルの宛先番号フィールド１４の宛先番号例えばD_1を参照して、出力ポート4_1にセルを出力し、さらに出力ポート4_2，4_3に順次セルを出力する。

【０００９】このように、セルのヘッダ部１２に宛先番号フィールド１４と論理チャネル番号フィールド１５とを設けて、複数の宛先に同一のセルを供給する場合、宛＊先番号フィールド１４にマルチキャスト制御部２を宛先とする宛先番号を格納し、論理チャネル番号フィールド１５に実際の複数の宛先に対応する論理チャネル番号を格納して、マルチキャスト制御部２により、宛先番号フィールド１４に実際の宛先の宛先番号を１つ格納した複数のセルを複製してスイッチ部１に供給するので、複数の宛先に同時にセルを送出できる。

【００１０】

【発明の効果】以上説明したように本発明によれば、複数の入力ポートと、この入力ポートと同数の出力ポートと、制御用入力ポートと、制御用出力ポートとを備え、ヘッダ部と情報部とから構成された固定長のセルが任意の入力ポートあるいは制御用入力ポートに入力されたときに、入力されたセルのヘッダ部により単一の出力ポートが指定されている場合は、指定された出力ポートにそのセルを出力し、入力されたセルのヘッダ部により複数の出力ポートが指定されている場合は、制御用出力ポートにそのセルを出力するスイッチ手段と、このスイッチ手段の制御用出力ポートから出力されたセルを、そのヘッダ部で指定された出力ポートの数だけ複製し、複製した各セルのヘッダ部を単一の出力ポートの指定に変更して、スイッチ部の制御用入力ポートに供給するマルチキャスト制御手段とを備えたので、複数の宛先に同時にセルを送出できるという優れた効果を奏する。

【図面の簡単な説明】

【図１】本発明の一実施例におけるセルスイッチの構成図である。

【図２】宛先管理テーブルの内容の説明図である。

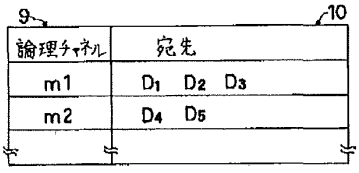
【図３】セルのフォーマットの説明図である。

【図４】従来のセルスイッチの構成図である。

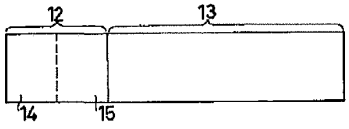
【符号の説明】

１　スイッチ部
２　マルチキャスト制御部
3_0～3_{n-2}　入力ポート
4_0～4_{n-2}　出力ポート
５　制御用入力ポート
６　制御用出力ポート
１２　ヘッダ部
１３　情報部

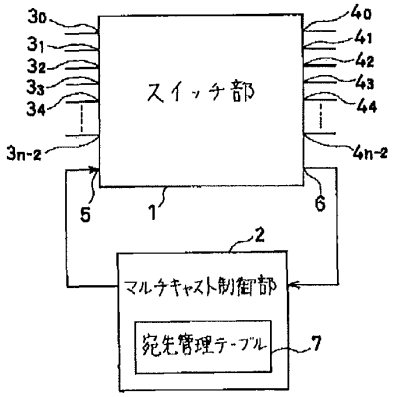
【図２】



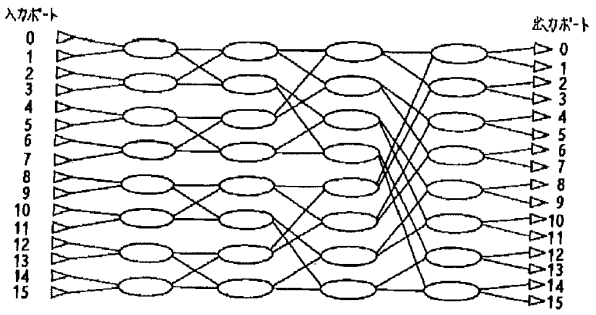
【図３】



【図１】



【図４】



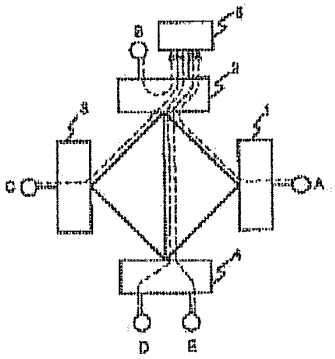
GROUP COMMUNICATION SYSTEM IN ATM EXCHANGE SYSTEM

Publication number: JP5219096 (A)
Publication date: 1993-08-27
Inventor(s): OTERU YOICHI +
Applicant(s): NEC CORP +
Classification:
- International: ***H04L12/18; H04L12/28;*** H04L12/18; H04L12/28; (IPC1-7): H04L12/18; H04L12/48
- European:
Application number: JP19920019731 19920205
Priority number(s): JP19920019731 19920205

Also published as:
JP2848077 (B2)

Abstract of **JP 5219096 (A)**

PURPOSE:To easily execute a group communication of a connectionless type packet, in the ATM exchange system. CONSTITUTION:In the system, a group communication server 5 is provided, and from the group communication server 5, a group virtual path for going to all end points contained in a group communication is set one by one, and each exchange node transfers temporarily all group communication packets to the group communication server 5. The group communication server 5 transfers the transferred packet to the group virtual path to which its group communication belongs. In each end point, other end point than a transmitting origin receives the packet.



(19)日本国特許庁（ＪＰ）　(12)**公開特許公報**（Ａ）　(11)特許出願公開番号

特開平5－219096

(43)公開日　平成５年(1993)８月27日

(51)Int.Cl.[5]	識別記号	庁内整理番号	ＦＩ		技術表示箇所
Ｈ０４Ｌ　12/48					
12/18					
		8529－5K	Ｈ０４Ｌ	11/ 20	Ｚ
		8948－5K		11/ 18	

審査請求　未請求　請求項の数１(全　４　頁)

(21)出願番号　特願平4－19731

(22)出願日　平成４年(1992)２月５日

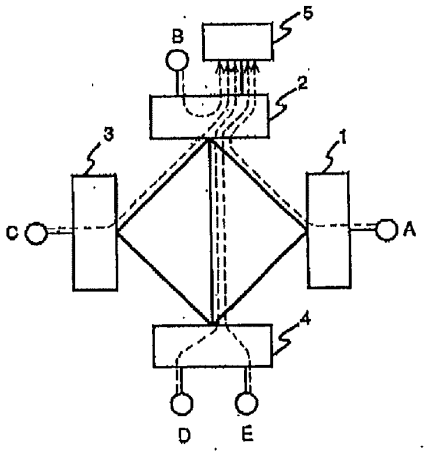
(71)出願人　000004237
日本電気株式会社
東京都港区芝五丁目７番１号

(72)発明者　大照　洋一
東京都港区芝五丁目７番１号　日本電気株式会社内

(74)代理人　弁理士　岩佐　義幸

(54)【発明の名称】　ＡＴＭ交換システムにおけるグループ通信方式

(57)【要約】
【目的】　ＡＴＭ交換システムにおいて、コネクションレス型パケットのグループ通信を容易に行う。
【構成】　システム中にグループ通信サーバ５を設け、グループ通信サーバ５から、グループ通信に含まれるすべてのエンドポイントに至るグループ用バーチャルパスを１つづつ設定し、各交換ノードは、グループ通信パケットを一旦、すべてグループ通信サーバ５に転送する。グループ通信サーバ５は、転送されたパケットをそのグループ通信が属するグループ用のバーチャルパスへ転送する。各エンドポイントの内、送信元以外がパケットを受信する。



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【特許請求の範囲】

【請求項１】情報を固定長のセル単位で転送・交換するＡＴＭ（ＡｓｙｎｃｈｒｏｎｏｕｓＴｒａｎｓｆｅｒＭｏｄｅ）交換システムにおけるグループ通信方式において、

コネクションレス型データ通信収容部を有する１つ以上の交換ノードと、１つ以上のグループ通信サーバよりなり、グループ通信サーバより、システム内のコネクションレス通信で設定されている各グループ通信に属するすべてのエンドポイントに至るグループ用バーチャルパスをあらかじめそれぞれ設定しておき、

各ＡＴＭ交換ノードは、入力されるコネクションレス型データパケットのうち複数対地宛のグループ通信パケットを一旦グループ通信サーバに転送し、

グループ通信サーバは、セル化されて到着するデータパケットの宛先領域に記されたグループ通信識別子に対応するグループに対応するグループ用バーチャルパスに受信パケットのセルを送信し、

各交換ノードのコネクションレス通信収容部は、グループ用バーチャルパスを経て受信したグループ通信パケットの宛先グループ識別子を調べ、

もし宛先グループ識別子が自収容部を対地として含んでいた場合のみ、受信パケットを自収容部が収容しているエンドポイントに転送し、

それ以外の場合には受信パケットを廃棄することを特徴とするＡＴＭ交換システムにおけるグループ通信方式。

【発明の詳細な説明】

【０００１】

【産業上の利用分野】本発明は、コネクションレス型の通信を行うＡＴＭ交換システムにおけるグループ通信方式に関する。

【０００２】

【従来の技術】情報を固定長のセル単位に分割して送受信、交換するＡＴＭ（Ａｓｙｎｃｈｒｏｎｏｕｓ　Ｔｒａｎｓｆｅｒ　Ｍｏｄｅ）交換方式が、次世代の広帯域通信の実現方式として有力視されている。ＡＴＭ交換方式では、通信に先だってコネクションの設定を行うコネクションオリエンテッドな通信が基本になっている。コネクションオリエンテッド通信では前もってエンドーエンドにパスおよびコネクションの識別子を設定し、情報は該識別子を用いて該パス上をルーティングされる。

【０００３】一方、ＬＡＮなどデータパケット通信で用いられているコネクションレス方式では、前もってコネクションの設定というフェーズはなく、情報パケットは、各情報パケットの中に書かれた宛先情報を基に、パケットーバイーパケットにルーティングされる。

【０００４】このようなコネクションレス型の通信をＡＴＭ交換システムに収容する方式としては、コネクションレス通信のエンドポイント間にメッシュ状に半固定的にパスを設定しておく方式が考えられている。この場

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合、コネクションレス通信のエンドポイントの数がｎあれば、半固定パスはｎ２本設定しておくことになる。各交換ノードは、収容部においてコネクションレスパケットの宛先情報を参照することにより宛先のエンドポイントを知り、該宛先エンドポイントへの半固定パス上に該パケットのセルを送信するものである。

【０００５】

【発明が解決しようとする課題】コネクションレス通信には１対１通信の他に、宛先を複数指定して行うグループ通信がある。グループ通信は、データパケット内の宛先アドレス領域に、宛先エンドポイントのアドレスの代わりにグループ識別子を書き込んで送信することによって行われる。１対１通信とグループ通信の区別のために、各データパケットの宛先アドレス領域にはグループ通信フラグ領域が設けられている。

【０００６】上述した半固定バーチャルパス方式をグループ通信にも適用するためには、各交換ノードより交換ノードに収容されるコネクションレス通信収容部が行うすべてのグループ通信に対して、それぞれ各グループ通信に含まれる複数対地のすべてに至るバーチャルパスを前もって設定しておかなければならない。

【０００７】図３にコネクションレス通信パケットのフォーマットおよびＡＴＭ交換システム中で用いられるセルへの分割の例を示す。図中セルヘッダ部分には、半固定バーチャルパスの識別子が書き込まれており、ＡＴＭ交換ノードは、セルヘッダのバーチャルパス識別子に従ってセルをルーティングする。

【０００８】一般にグループ通信は双方向通信であるので、ｍ個のエンドポイントからなるグループ通信が設定されると網全体でｍ個のバーチャルパスを設定・管理しなければならない。また、複数対地宛のバーチャルパスは、一般に送信元交換ノードのコネクションレス通信収容部を頂点とするツリー状の形態と成り、パスを構成する交換ノードの数は１対１通信用のパスを構成する交換ノードの数より多く、そのそれぞれにパス情報を保持しなければならない。ルートの決め方も１対１通信のルートの決め方と比べて非常に難しいことが知られている。

【０００９】図４に複数対地宛のバーチャルパスの例を示す。図中１～４は各々交換ノード、各交換ノード間の実線は交換ノード間の物理的局間回線、Ａ～Ｅは各々コネクションレス通信のエンドポイントを示す。図において、Ａ，Ｂ，Ｃ，Ｄの４つのエンドポイント間でグループ通信を行う場合のＡから他の３ポイントへのバーチャルパスの例を点線で示した。図に示したように各交換ノードは分岐機能を持ち、一方のポートから入力したセルを複数ポートに分岐転送することができる。この例では図に示した以外にＢからＡ，Ｃ，Ｄへのパス、Ｃから Ａ，Ｂ，Ｄへのパスおよびからの，Ｂ，Ｃへのパスも各々設定しておく必要がある。

【００１０】これらより、各グループ通信に対して上述

の半固定バーチャルパス方式をそのまま適用するのは網全体の負担を大きくしすぎて好ましくない。

【0011】本発明の目的は、コネクションレス型のグループ通信を、前もって各グループ通信に対応するバーチャルパスを設定しておくことなしに実現でき、網全体の管理が非常に容易となるATM交換システムにおけるグループ通信方式を提供することにある。

【0012】

【課題を解決するための手段】本発明は、情報を固定長のセル単位で転送・交換するATM（Asynchronous Transfer Mode）交換システムにおけるグループ通信方式において、コネクションレス型データ通信収容部を有する1つ以上の交換ノードと、1つ以上のグループ通信サーバよりなり、グループ通信サーバより、システム内のコネクションレス通信で設定されている各グループ通信に属するすべてのエンドポイントに至るグループ用バーチャルパスをあらかじめそれぞれ設定しておき、各ATM交換ノードは、入力されるコネクションレス型データパケットのうち複数対地宛のグループ通信パケットを一旦グループ通信サーバに転送し、グループ通信サーバは、セル化されて到着するデータパケットの宛先領域に記されたグループ通信識別子に対応するグループに対応するグループ用バーチャルパスに受信パケットのセルを送信し、各交換ノードのコネクションレス通信収容部は、グループ用バーチャルパスを経て受信したグループ通信パケットの宛先グループ識別子を調べ、もし宛先グループ識別子が自収容部を対地として含んでいた場合のみ、受信パケットを自収容部が収容しているエンドポイントに転送し、それ以外の場合には受信パケットを廃棄することを特徴としている。

【0013】

【実施例】次に、本発明の実施例について、図面を参照して説明する。

【0014】図1は、図4に示した4つの交換ノードからなるシステムに本発明のグループ通信方式を適用する場合の一実施例を示すシステム構成図である。図中1～4は各々交換ノード、実線は交換ノード間の物理回線、A～Eは各々コネクションレス通信のエンドポイントを示す。図中5が、本発明のグループ通信方式で用いられるグループ通信サーバである（以下図2においても同様）。

【0015】本実施例ではグループ通信サーバ5は、交換ノード2の後方に接続されたトランクモジュールの位置づけになっているが、グループ通信サーバ5がそれ自体で交換ノードを構成していてもよい。図中点線で示したパスa，b，c，d，eは、各々エンドポイントA，B，C，D，Eからグループ通信サーバ5へセルを転送するための半固定バーチャルパスを示している。

【0016】次に、図2により、グループ（A，B，C，D）で双方向のグループ通信を行う場合を例にして、本実施例の動作を説明する。

【0017】図中点線で示したパスgがグループ通信サーバ5からグループに含まれる各エンドポイントA，B，C，Dへのグループ用バーチャルパスを示している。この図を用いて、エンドポイントAがエンドポイントB，C，D宛にグループ通信パケットを送信した例を説明する。

【0018】なお、以下の例では、情報はパケットの形で各エンドポイントから各交換ノード（のコネクションレス通信収容部）へ入来し、交換ノード（のコネクションレス通信収容部）がパケットをセル化して網内に転送するものとして説明するが、エンドポイントからセルに分割された形で交換ノードへ入来する場合もある。

【0019】エンドポイントAを収容する交換ノード1（のコネクションレス通信収容部）は、エンドポイントAより送信されたパケットの宛先アドレス部のグループ通信フラグより、パケットがグループ通信用パケットであることを知り、パケットをセル化して図1のバーチャルパスaを介してグループ通信サーバ5に転送する。

【0020】グループ通信サーバ5は、受信した先頭セルに含まれるグループ通信パケットの宛先アドレスを見てパケットがグループ（A，B，C，D）間の通信であることを知り、図2に示したバーチャルパスgを介して交換ノード1，2，3および4に転送する。

【0021】各交換ノード1，2，3および4（のコネクションレス通信収容部）は、バーチャルパスgより受信したセルに対して、先頭セルに含まれる宛先グループアドレスを調べ、グループ通信の対地が自収容部を含んでいた場合のみパケットに組立てエンドポイントに転送する。このためには、各交換ノード（のコネクションレス通信収容部）は、自収容部が収容するエンドポイントが対地として含まれているグループ通信識別子のリストを保持している必要がある。

【0022】この例では、パケットはエンドポイントB，C，Dに転送される。送信元である交換ノード1にも転送されるが、交換ノード1は宛先グループアドレスの対地がAを含んでないので廃棄する。

【0023】

【発明の効果】以上説明したように本発明は、コネクションレス通信で設定されるグループ通信のすべてに対して前もって半固定的なバーチャルパスを設定しておく必要がなく、グループ通信サーバからグループ通信に属するエンドポイントすべてに至るバーチャルパスを1つづつ設定しておけばよい。すなわち、m個のエンドポイントからなるグループ通信のためには、従来はm本のバーチャルパスを設定しておかなければならなかったのに対して、1つのグループ用バーチャルパスを設定しておけばよくなり、網全体の管理が非常に容易になるという効果を有する。

【図面の簡単な説明】

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【図1】本発明の一実施例を示す構成図である。

【図2】本発明の一実施例を示す構成図である。

【図3】パケットおよびセルのフォーマットを示す説明図である。

【図4】従来方式によるグループ通信のためのバーチャ＊ルパスを示す説明図である。

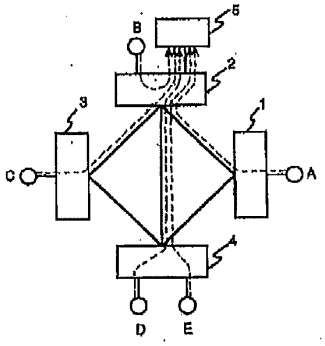
【符号の説明】

1～4　交換ノード

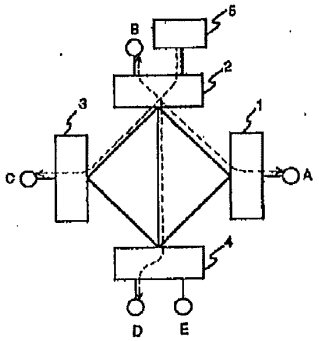
5　グループ通信サーバ

A，B，C，D，E　エンドポイント

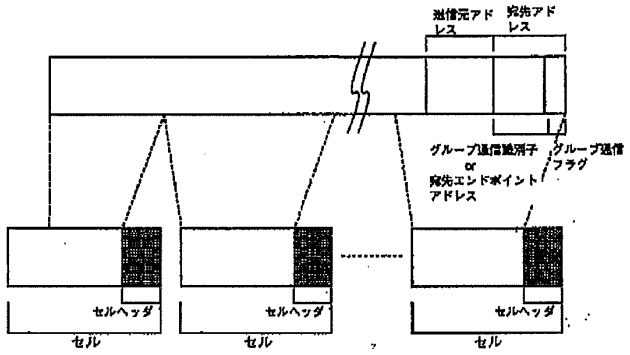
【図1】



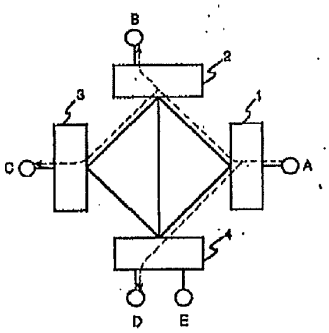
【図2】



【図3】



【図4】



No title available

Publication number: JP5336155 (A)

Publication date: 1993-12-17

Inventor(s): OTERU YOICHI +

Applicant(s): NEC CORP +

Classification:

- International: ***H04L12/28; H04Q11/04; H04Q3/52;*** **H04L12/28; H04Q11/04; H04Q3/52;** (IPC1-7): H04L12/48; H04Q11/04; H04Q3/52

- European:

Application number: JP19920142559 19920603

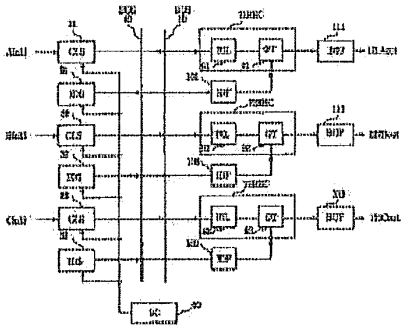
Priority number(s): JP19920142559 19920603

Also published as:

JP3006286 (B2)

Abstract of **JP 5336155 (A)**

PURPOSE:To easily implement m:m 2-way multi-cast by having only to manage a sole identifier through the addition of an identifier of an input line to each cell and allowing an output side to detect a cell from its own input line and to abort it. CONSTITUTION:For example, a cell transmission circuit(CLS) 21 at an input side sends a cell inputted from an input line Ain 11 to a time division bus(BUS) 50. Simultaneously an input line identifier transmission circuit(IDS) 31 sends the identifier of the input line Ain 11 to the BUS 40. Each of reception sections (REC) 71-73 at the output side allows reception filtering circuit (FIL) 81-83 to check the routing information in a header of the inputted cell and to output the cell to gates(GT) 91-93 only when the input cell is set to its own output line.; Identification circuits(IDF) 101-103 receive the input line identifier on the BUS 40 and opens the GT 91-93 only when the identifier is dissident from the identifier of its own line to pass the cell from the FIL 81-83.



(19)日本国特許庁（ＪＰ）　(12)**公開特許公報**（Ａ）　(11)特許出願公開番号

特開平5－336155

(43)公開日　平成５年(1993)12月17日

(51)Int.Cl.[5]	識別記号	庁内整理番号	ＦＩ		技術表示箇所
Ｈ０４Ｌ　12/48					
Ｈ０４Ｑ　3/52	１０１　Ｚ	9076－5K			
11/04					
		8529－5K	Ｈ０４Ｌ　11/ 20	Ｚ	
		9076－5K	Ｈ０４Ｑ　11/ 04	Ｒ	

審査請求　未請求　請求項の数３(全　４　頁)

(21)出願番号　特願平4－142559

(22)出願日　平成４年(1992)６月３日

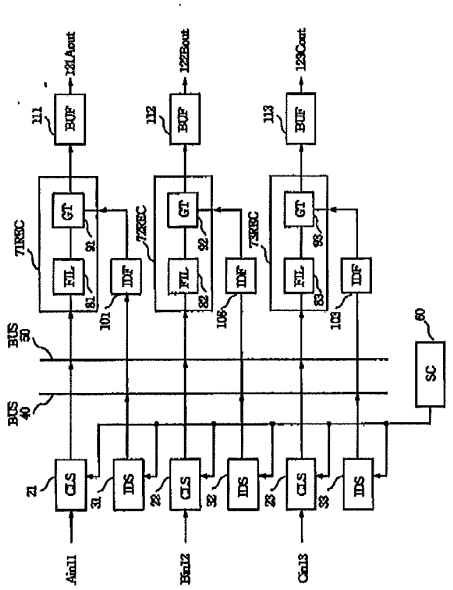
(71)出願人　000004237
日本電気株式会社
東京都港区芝五丁目７番１号

(72)発明者　大照　洋一
東京都港区芝五丁目７番１号日本電気株式会社内

(74)代理人　弁理士　京本　直樹　（外２名）

(54)【発明の名称】　ＡＴＭスイッチ

(57)【要約】
【目的】ｍ対ｍの双方向型マルチキャストを行う場合に、各送信元別にｍ個の１対ｍマルチキャスト用識別子を管理する必要がなく、たった１つの識別子を管理するだけでｍ対ｍマルチキャストを行えるようにする。
【構成】入力側ではＩＤＳ３１，～３３が各入力回線の識別子をＣＬＳ２１，～２３からの入力セルに付加し、出力側ではＲＥＣ７１，～７３およびＩＤＦ１０１，～１０３が各受信セルのヘッダ領域に書かれたルーティング情報および入力回線の識別子の基づきこのセルの受信の判定を行う。



JAGEX0000467

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【特許請求の範囲】

【請求項1】　固定長のセル単位に分割された情報をそのヘッダ領域に書かれた情報をもとに交換するＡＴＭスイッチにおいて、入力側は各入力回線の識別子を入力セルに付加する識別子付加手段を備え、出力側は各受信セルのヘッダ領域に書かれたルーティング情報および前記入力回線の識別子に基づきこのセルの受信可否を判定する受信可否判定手段を備えることを特徴とするＡＴＭスイッチ。

【請求項2】　前記識別子付加手段は前記入力回線の入力セルに付加する前記識別子を送出する入力回線識別子送出回路であることを特徴とする請求項1記載のＡＴＭスイッチ。

【請求項3】　前記受信可否判定手段は前記ルーティング情報をチェックして前記入力セルが自出力回線に対して設定されていない宛先識別子を持っていればこのセルを廃棄する受信フィルタリング回路と、前記入力回線識別子送出回路からの前記入力回線の識別子が自回線の識別子と一致しなかった場合にのみ前記入力セルを通過出力させるゲート回路とからなることを特徴とする請求項1または2記載のＡＴＭスイッチ。

【発明の詳細な説明】

【０００１】

【産業上の利用分野】本発明はＡＴＭスイッチに関し、特にマルチキャスト機能付きＡＴＭスイッチに関する。

【０００２】

【従来の技術】情報を固定長のセル単位に分割して送受信・交換するＡＴＭ（Ａｓｙｎｃｈｒｏｎｏｕｓ　Ｔｒａｎｓｆｅｒ　Ｍｏｄｅ）交換方式が次世代の広帯域通信の実現方式として有力視されている。ＡＴＭ交換方式では、各セルのヘッダ領域に書かれた識別子をもとにセル毎にスイッチングされる。一方、通信の形態としてマルチキャスト通信というものがある。マルチキャスト通信は1つの情報フレームをグループ内の複数の対地（メンバ）に同報するものである。マルチキャスト通信には、送信元が特定の1つのメンバに限られている1対m型と、各メンバが他のすべてのメンバに対して同報するm対m型の2種類が考えられる。これらマルチキャスト通信をサポートするために、一般にＡＴＭスイッチには1対m型の同報スイッチング機能が備えられている。これは、1つの入力回線から入力されたセルを同時に複数の出力回線に出力する機能である。これを行うためには、特定の入力回線から特定の複数の出力回線へのパスおよびそれに対応した識別子を設定しておく必要がある。この識別子はセルのヘッダ領域に書き込まれ、これをもとにＡＴＭスイッチ内では前もって設定されている複数の出力回線にセルがスイッチングされる。上記の1対m型の同報スイッチング機能を利用してm対mのマルチキャストを行うには、対応する各入力回線からグループに属するすべての出回線に対する1対m型のパスおよび識別子を設定して置かなければならない。もしグループに属する回線の数がnであるなら、全部でn本のパスおよび識別子を設定して管理しなければならない。

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【０００３】このマルチキャスト方式について図2を参照して説明する。図2は従来のＡＴＭスイッチにおけるマルチキャスト方式を説明するための図であり、3組の回線Ａ，Ｂ，ＣがＡＴＭスイッチに収容されている。

【０００４】図2（ａ）に示す第1の例のＡＴＭスイッチでは、入力回線Ａｉｎ１１からは出力回線Ｂｏｕｔ１２２およびＣｏｕｔ１２３へのパス（実線で図示）を張って入力回線の識別子としてＩＤ＝1が設定され、入力回線Ｂｉｎ１２からは出力回線Ａｏｕｔ１２１およびＣｏｕｔ１２３へのパス（破線で図示）を張って入力回線の識別子としてＩＤ＝2が設定され、入力回線Ｃｉｎ１３からは出力回線Ａｏｕｔ１２１およびＢｏｕｔ１２２へのパス（鎖線で図示）を張って入力回線識別子としてＩＤ＝3が設定される。つまり、このＡＴＭスイッチでは各パスに対応して3つの識別子が設定されている。

【０００５】また、図2（ｂ）に示す第2の例のＡＴＭスイッチでは、各入力回線Ａｉｎ１１，Ｂｉｎ１２およびＣｉｎ１３からそれぞれ出力回線Ａｏｕｔ１２１，Ｂｏｕｔ１２２およびＣｏｕｔ１２３へのパスを張る。この場合には、出力先はすべて同じ（つまりＡｏｕｔ１２１とＢｏｕｔ１２２とＣｏｕｔ１２３の3回線）であるので、1つの識別子（ＩＤ＝1）だけを設定しておけばよい。

【０００６】

【発明が解決しようとする課題】この従来の第1の例のＡＴＭスイッチでは、各パスに対応して個別の識別子を設定しているので、グループ内の回線数が多いときにはパスおよび識別子の設定および管理が煩雑であるという問題点があった。

【０００７】また従来の第2の例のＡＴＭスイッチでは1つの識別子だけを設定すればよいので管理の手間は省ける。しかし、セルが送信元回線にも出力されるので、このままでは使用できないという問題点があった。

【０００８】本発明の目的は、入力回線側で入力回線の識別子を各セルに付加することにより、前述した従来の第2の例において出回線側で自入力回線からのセルを検出して廃棄することを可能とするＡＴＭスイッチを提供することにある。

【０００９】

【課題を解決するための手段】本発明のＡＴＭスイッチは、固定長のセル単位に分割された情報をそのヘッダ領域に書かれた情報をもとに交換するＡＴＭスイッチにおいて、入力側は各入力回線の識別子を入力セルに付加する識別子付加手段を備え、出力側は各受信セルのヘッダ領域に書かれたルーティング情報および前記入力回線の識別子に基づきこのセルの受信可否を判定する受信可否判定手段を備えている。

【００１０】そして、前記識別子付加手段は前記入力回線の入力セルに付加する前記識別子を送出する入力回線識別子送出回路であることを特徴とし、また、前記受信可否判定手段は前記ルーティング情報をチェックして前記入力セルが自出力回線に対して設定されていない宛先識別子を持っていればこのセルを廃棄する受信フィルタリング回路と、前記入力回線識別子送出回路からの前記入力回線の識別子が自回線の識別子と一致しなかった場合にのみ前記入力セルを通過出力させるゲート回路とからなることを特徴とする。

【００１１】

【作用】本発明によれば、送信元も含めたグループ内のすべての回線にセルが同報されても送信元の出力回線では捨てることができるため、マルチキャスト通信が容易に行える。

【００１２】

【実施例】次に、本発明について図面を参照して説明する。図１は本発明の一実施例を示すマルチキャスト機能付きＡＴＭスイッチのブロック図である。簡単のため３入力，３出力のＡＴＭスイッチを示している。

【００１３】図１において、本実施例のマルチキャスト機能付きＡＴＭスイッチは入力回線Ａｉｎ１１，Ｂｉｎ１２，Ｃｉｎ１３とそれぞれ接続されるセル送信回路（以下ＣＬＳと記す）２１，２２，２３と、入力回線ごとの識別子を送出する入力回線識別子送出回路（以下ＩＤＳと記す）３１，３２，３３と、ＣＬＳ２１，～２３およびＩＤＳ３１，～３３に制御信号を送る送信制御回路（以下ＳＣと記す）６０と、時分割バス（以下ＢＵＳと記す）５０を介してＣＬＳ２１，２２，２３からのセルを受信する受信部（以下ＲＥＣと記す）７１，７２，７３と、ＢＵＳ４０上の入力回線識別子をチェックする識別回路（以下ＩＤＦと記す）１０１，１０２，１０３と、それぞれＲＥＣ７１，７２，７３を通過したセルを一旦取り込むバッファ（以下ＢＵＦと記す）１１１，１１２，１１３とを備える。

【００１４】例えばＲＥＣ７１はＣＬＳ２１から入力されたセルのヘッダ内の宛先識別子をチェックして設定されていない宛先識別子を持ったセルを廃棄する受信フィルタリング回路（以下ＦＩＬと記す）８１と、ＩＤＦ１０１からの制御信号によりＦＩＬ８１の出力のゲーティングを行うゲート（以下ＧＴと記す）９１とを有する。同様にＲＥＣ７２はＦＩＬ８２とＧＴ９２とを有し、ＲＥＣ７３はＦＩＬ８３とＧＴ９３とを有して構成されている。

【００１５】次に本実施例の動作について説明する。例えばＣＬＳ２１は入力回線Ａｉｎ１１から入力されたセルをＳＣ６０からの制御信号に従ってＢＵＳ５０に送信する。同時にＩＤＳ３１から入力回線Ａｉｎ１１の識別子をＢＵＳ４０上に送出する。各ＲＥＣ７１，～７３はＢＵＳ５０上のすべてのセルを一旦取り込み、それぞれＦＩＬ８１，～８３に入力する。ＦＩＬ８１，～８３は入力されたセルのヘッダ内の宛先識別子をチェックして、入力セルが自出力回線に対して設定されていた場合のみ、このセルをＧＴ９１，～９３に出力し、設定されていない宛先識別子を持ったセルは廃棄する。

【００１６】一方、ＩＤＦ１０１，～１０３はＢＵＳ４０上の入力回線識別子を受信し、自回線の識別子と比較し、自回線の識別子と一致しなかった場合にのみＧＴ９１，～９３を開いてＦＩＬ８１，～８３からのセルを通過させ、この通過したセルはＢＵＦ１１１，～１１３に一旦入力されて、出力回線１２１，～１２３に出力される。入力回線Ｂｉｎ１２またはＣｉｎ１３から入力されたセルも同様に処理される。

【００１７】以上説明したように本実施例では、たといマルチキャストパスがすべての出力回線宛に設定されていても、入力回線識別子によるフィルタリングを行うので自回線へ出力されることはない。

【００１８】

【発明の効果】以上説明したように本発明は、送信元も含めたグループ内のすべての回線にセルが同報されてもこの同報セルを廃棄して送信元の出力回線に出力しないようにしたので、唯一の識別子を管理するだけでm対m型の双方向マルチキャストを容易に行うことができるという効果を有する。

【図面の簡単な説明】

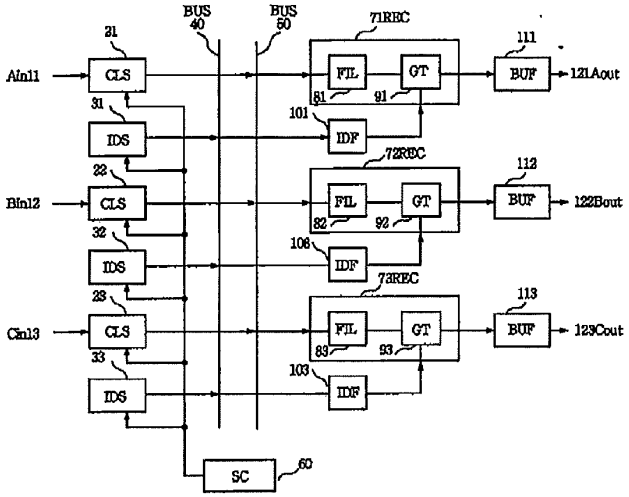
【図１】本発明の一実施例を示すマルチキャスト機能付きＡＴＭスイッチのブロック図である。

【図２】従来のＡＴＭスイッチのマルチキャスト方式を説明するための図である。

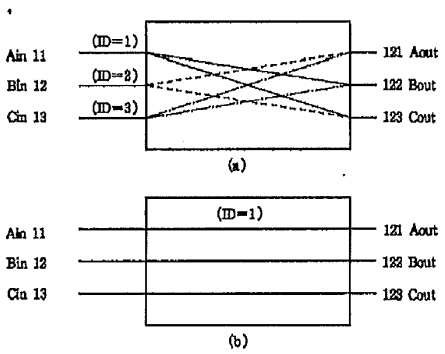
【符号の説明】

１１，１２，１３　入力回線（Ａｉｎ，Ｂｉｎ，Ｃｉｎ）
２１，２２，２３　セル送信回路（ＣＬＳ）
３１，３２，３３　入力回線識別子送出回路（ＩＤＳ）
４０，５０　時分割バス（ＢＵＳ）
６０　送信制御回路（ＳＣ）
７１，７２，７３　受信部（ＲＥＣ）
８１，８２，８３　受信フィルタリング回路（ＦＩＬ）
９１，９２，９３　ゲート（ＧＴ）
１０１，１０２，１０３　識別回路（ＩＤＦ）
１１１，１１２，１１３　バッファ（ＢＵＦ）
１２１，１２２，１２３　出力回線（Ａｏｕｔ，Ｂｏｕｔ，Ｃｏｕｔ）

【図1】



【図2】



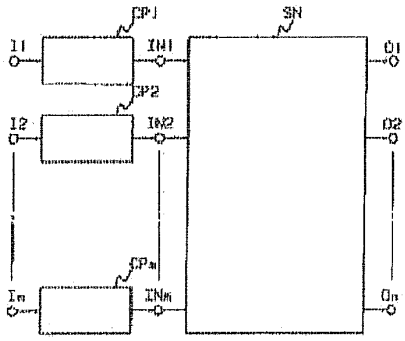
MULTICAST PACKET GENERATION APPARATUS FOR PACKET REPLACEMENT COMMUNICATION SYSTEM

Publication number: JP6030041 (A)
Publication date: 1994-02-04
Inventor(s): FURANKU ROODEUIKU +
Applicant(s): ALCATEL NV +
Classification:
- International: ***H04L12/18; H04L12/56; H04Q11/04;*** H04L12/18; H04L12/56; **H04Q11/04;** (IPC1-7): H04L12/56
- European: H04L12/18; H04Q11/04S2
Application number: JP19930070555 19930329
Priority number(s): EP19920200870 19920327

Also published as:
JP3321231 (B2)
EP0562184 (A1)
EP0562184 (B1)
US5440548 (A)
ES2125881 (T3)
more >>

Abstract of **JP 6030041 (A)**

PURPOSE: To use only one exchange network input by a device output connected to one of the inputs of an exchange network for packet generators to serially transmit a packet through this output. CONSTITUTION: In order to execute multicast connection, a communication system is provided with plural multicast packet generators CP1 to m called coplator. These multicast packet generators are provided with device outputs IN1 to m to inputs shown by the same code of a packet exchange network SN. Then only one packet exchange network input is used independently of the number of multicast packets by serially transmitting the multicast packet through this output.



(19)日本国特許庁（ＪＰ）　(12)**公開特許公報**（Ａ）　(11)特許出願公開番号

特開平6－30041

(43)公開日　平成6年(1994)2月4日

(51)Int.Cl.[5]	識別記号	庁内整理番号	Ｆ Ｉ	技術表示箇所
Ｈ０４Ｌ　12/56				
		8529－5K	Ｈ０４Ｌ　11/20	１０２　Ａ

審査請求　未請求　請求項の数12(全　7　頁)

(21)出願番号　特願平5－70555

(22)出願日　平成5年(1993)3月29日

(31)優先権主張番号　９２２００８７０．１

(32)優先日　1992年3月27日

(33)優先権主張国　ベルギー（ＢＥ）

(71)出願人　590005003
アルカテル・エヌ・ブイ
ＡＬＣＡＴＥＬ　ＮＥＡＭＬＯＺＥ　ＶＥＮＮＯＯＴＳＨＡＰ
オランダ国、1077　エックスエックス・アムステルダム、ストラビンスキーラーン　341

(72)発明者　フランク・ローデウィク
ベルギー国、ビー　ー　2850　ブーム、ファン・レリウスラーン　243

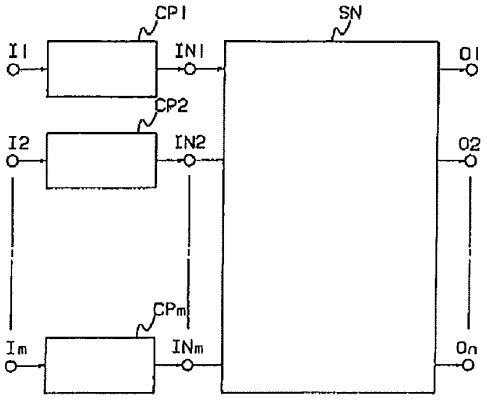
(74)代理人　弁理士　鈴江　武彦

(54)【発明の名称】　パケット交換通信システム用のマルチキャストパケット生成装置

(57)【要約】

【目的】　本発明は、トラヒック負荷およびマルチキャスト接続を実行するため交換ネットワークに予約される入力数を減少させ、比較的簡単な制御手段を利用するマルチキャストパケット生成装置を提供することを目的とする。

【構成】　マルチキャストパケット生成装置CP1 ～m がパケット交換ネットワークSNの入力IN1 ～m の１つに接続された装置出力を有し、この出力を通ってマルチキャストパケットが直列に伝送されることによってマルチキャストパケットの数に関係なくただ１個の交換ネットワーク入力だけが使用されることを特徴とする。



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【特許請求の範囲】

【請求項1】　1つ以上の入力および通信システムの出力に結合された複数の出力を有するパケット交換ネットワークを含んでいるパケット交換通信システムのマルチキャストパケット生成装置であって、パケット交換通信システムの1以上の入力がマルチキャストパケット生成装置に結合され、前記入力に供給された原マルチキャストパケットから複数の別々のマルチキャストパケットを導出して前記パケット交換ネットワークにそれを伝送する如く構成され、前記パケット交換ネットワークが前記出力の1つへの前記マルチキャストパケットのそれぞれの転送を制御するように構成されているマルチキャストパケット生成装置において、

前記マルチキャストパケット生成装置が前記パケット交換ネットワークの前記入力の1つに接続された装置出力を有し、それを通って前記マルチキャストパケットが直列に伝送されることを特徴とするマルチキャストパケット生成装置。

【請求項2】　原パケットが平均入力速度で前記入力に供給され、その速度が前記原パケットそれぞれから導出されるマルチキャストパケットの数によって分割された前記装置出力の前記マルチキャストパケットの出力速度以下であることを特徴とする請求項1記載のマルチキャストパケット生成装置。

【請求項3】　前記原パケットが関係するパケット制御データを有し、それから前記マルチキャストパケット生成装置がマルチキャストパケットの転送されるべき出力の識別子を示す経路情報、およびマルチキャストパケットが属する通信を表すパケット識別子とを各マルチキャストパケットに対して導出し、前記経路情報および前記パケット識別子の両方が前記マルチキャストパケット生成装置によって前記マルチキャストパケットに関係されていることを特徴とする請求項1記載のマルチキャストパケット生成装置。

【請求項4】　前記マルチキャストパケット生成装置が複数の前記経路情報およびパケット制御データから得られる前記パケット識別子の関連したリストの形態で蓄積するメモリ手段を含むことを特徴とする請求項1記載のマルチキャストパケット生成装置。

【請求項5】　前記各パケットがヘッダおよびデータフィールドを含み、原パケットのヘッダが前記パケット制御データを含み、前記原パケットから導出されたマルチキャストパケットそれぞれのヘッダが前記関係した経路情報および前記関連したパケット識別子を含み、前記原パケットおよび前記マルチキャストパケットのデータフィールドが同じ利用者データを含むことを特徴とする請求項3記載のマルチキャストパケット生成装置。

【請求項6】　前記マルチキャストパケット生成装置が生成されるマルチキャストパケットの数を前記パケット制御データから得ることを特徴とする請求項2記載のマルチキャストパケット生成装置。

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【請求項7】　生成されるマルチキャストパケットの前記の数が1に等しい場合、前記原パケットが変形されずに前記マルチキャストパケット生成装置を通って伝送されることを特徴とする請求項2あるいは5記載のマルチキャストパケット生成装置。

【請求項8】　前記パケット交換装置が前記関係した経路情報による前記出力の1つに前記マルチキャストパケットそれぞれを転送するように構成されることを特徴とする請求項2記載のマルチキャストパケット生成装置。

【請求項9】　同じ原パケットから導出された全マルチキャストパケットが同じ出力に転送されなければならない場合、同じ経路情報であるが別々のパケット識別子が前記マルチキャストパケットそれぞれに関係されることを特徴とする請求項2記載のマルチキャストパケット生成装置。

【請求項10】　前記通信システムの出力に供給されたマルチキャストパケットが同じ原パケットから付加的なマルチキャストパケットを得るために前記通信システムの入力に戻されることを特徴とする請求項2記載のマルチキャストパケット生成装置。

【請求項11】　複数のマルチキャストパケット生成装置が設けられ、各マルチキャストパケット生成装置が前記通信システムの1つの入力と前記パケット交換ネットワークの1つの入力の間で結合されることを特徴とする請求項1記載のマルチキャストパケット生成装置。

【請求項12】　前記複数のマルチキャストパケット生成装置が前記通信システムの同じ入力と前記パケット交換ネットワークの複数の入力の間に結合され、前記複数の各マルチキャストパケット生成装置の装置出力が前記入力の別々の1つに接続されることを特徴とする請求項11記載のマルチキャストパケット生成装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、マルチキャストパケット生成装置に結合された少なくとも1つの入力および通信システムの出力に結合された複数の出力を有するパケット交換ネットワークを含んでいるパケット交換通信システムのマルチキャストパケット生成装置に関する。

【0002】

【従来の技術】マルチキャストパケット生成装置はその入力に供給された原パケットからの複数の別々のマルチキャストパケット導出し、出力の1つへそれらマルチキャストパケットのそれぞれの転送を制御するように構成されているパケット交換ネットワークに対してマルチキャストパケットを伝送するように構成される。

【0003】このようなマルチキャストパケット生成装置は、J.S.Turner氏による文献（1986年4月8乃至10日のIEEE INFOCOM '86－第5回協議の会報、第667 乃至675 頁）から既に知られている技術である。それにおける

通信システムは、パケットコピーネットワークおよび複数の放送およびグループ自動変換器によって構成されるマルチキャストパケット生成装置を具備している。

【０００４】パケットコピーネットワークは通常の通信パケット交換ネットワークと同様の構造を有し、複数の入力、複数の出力を有し、複数の相互接続交換素子を含む。通信システムの入力はコピーネットワークの各入力に結合され、コピーネットワークの出力は別々の放送およびグループ自動変換器にそれぞれ接続される。各自動変換器の出力は、この場合パケット分配ネットワークおよびパケット経路ネットワークの直列接続によって構成される交換ネットワークの別々の入力に接続される。

【０００５】通常の交換ネットワークとコピーネットワークの間の相違は、後者が入力の１つ、つまり通信システムの１つの入力で受信された任意の単一の原パケットをコピーし、出力の別々の１つ、つまり別々の放送およびグループ自動変換器へこれらの各コピーパケットを転送することである。さらに、コピーパケットはコピーネットワークの出力全てに単に分配される。異なる自動変換器に受信されたコピーパケットが全て同一であるので、これらの自動変換器それぞれはコピーパケットが必要とされない場合にコピーパケットを廃棄するか、或いはパケット識別および経路情報中のコピーパケットのヘッダに含まれたパケット制御データを翻訳しなければならない。自動変換器によって廃棄されたコピーパケットは、既に記載されたように最大数のコピーパケットを計画的に生成するコピーネットワークによって過度に生成されたコピーパケットであり、この数はコピーネットワークの出力の数および自動変換器の数に対応している。パケット識別子はパケットが属する通信、すなわち入力と出力の接続を示し、経路情報は通信システムの単一の出力において出るために少なくとも交換ネットワークを通ってパケットによって後続される経路を示す。

【０００６】パケット識別および経路情報は、コピーパケットへの自動変換器に関連する新しいパケット制御データの一部分を形成する。特に、この新しいパケット制御データはコピーパケットのヘッダに負荷される。このように変形されたコピーパケットは、マルチキャストパケットと呼ばれる。

【０００７】各パケットが利用者データをさらに含み、この利用者データが初めのパケットおよびそこから得られたマルチキャストパケット全てと同じであるということに注目される。

【０００８】また、経路情報と並んでパケット識別子は、同じ経路情報を有するような通信システムの同じ出力に転送されなければならないマルチキャストパケットを弁別する必要があるということにも注目される。これは、例えば通信集線装置がこの出力に接続され、この集線装置に接続された異なる利用者へのＴＶ分配のようなパケットの分配を実行するような場合である。

【０００９】

【発明が解決しようとする課題】この既知のマルチキャストパケット生成装置の第１の欠点は、不必要なコピーパケットのコピーネットワークによる生成が不必要な高いトラヒック負荷を導くことである。加えて、この既知のマルチキャストパケット生成装置の制御手段およびさらに特定の放送およびそのグループ変換器は、それがこれら全ての変換器の動作を調整しなければならないので比較的複雑である。事実、上記のように、各変換器はそこで受信されたコピーパケットを廃棄するか、特定の経路情報およびパケット識別子にパケット制御データを変換しなければならない。

【００１０】さらに、要求されるマルチキャストパケットの最大数は、コピーネットワークの出力の数を決定するために推定されなければならない。マルチキャストパケット生成装置のコピーネットワークはこの最大数のコピーパケットを常に生成するため、変換器の同じ最大数が要求され、同じ最大数の交換ネットワークの入力がこの最大量のマルチキャストパケットが要求されない時でさえマルチキャスト接続を実行するために確保されることを必要とする。

【００１１】本発明の目的は、減少したトラヒック負荷およびマルチキャスト接続を実行するための交換ネットワークに予約された減少した数の入力を備え、比較的簡単な制御手段を利用する上記のタイプのマルチキャストパケット生成装置を提供することである。

【００１２】

【課題を解決するための手段】本発明によれば、この目的は、前記マルチキャストパケット生成装置が前記パケット交換ネットワークの前記入力の１つに接続された装置出力を有し、それを通ってマルチキャストパケットが直列に伝送されることによって達成される。

【００１３】この方法におけるマルチキャストパケット生成装置の制御手段は、全マルチキャストパケットがこの単一の装置において生成されるため比較的簡単である。さらに、マルチキャストパケットがいくつ要求されても、交換ネットワークのただ１つの入力が単一の原パケットから導出された全マルチキャストパケットのために確保されることを必要とするに過ぎない。要求された数のマルチキャストパケットのみが生成されるので、通常のトラヒック負荷は限度を越えない。

【００１４】パケット交換ネットワークにおける通信システムがマルチキャストパケットを生成するように構成され、そこを通って転送されるパケットも既知の技術であることに注目する。このようなパケット交換ネットワークの一部分を形成する交換ノードはそれらの入力の１つに供給された各パケットから少なくとも２つのマルチキャストパケットを生成し、それらの別々の出力にこれらのマルチキャストパケットを供給することを可能にする。このように既知の通信システムは任意の付加的な分

離したマルチキャストパケット生成装置を要求せず、その欠点は、パケット交換ネットワークのほぼ全ての交換ノードが比較的“知的”でなければならず、その制御が比較的複雑であるということでる。さらに、1つのみのマルチキャストパケットが各出力に供給されるため、可能なマルチキャストパケットの最大数は通信システムの出力の数によって限定される。

【0015】本発明の別の特徴は、原パケットが平均入力速度で前記入力に供給されることであり、それは前記原パケットそれぞれから得られるマルチキャストパケットの数によって割算される前記装置出力の前記マルチキャストパケットの出力速度以下である。

【0016】この方法において、パケットがマルチキャストパケット生成装置によって損失されることはない。

【0017】また、本発明の別の特徴は、前記マルチキャストパケット生成装置が複数の前記経路情報の関連したリストおよびパケット制御データから得られる前記パケット識別子の形態に基づいて蓄積するメモリ手段を含むことである。

【0018】本発明のマルチキャストパケット生成装置は、生成されるマルチキャストパケットの数が1に等しい場合、前記原パケットが変形されずに前記マルチキャストパケット生成装置を通って伝送されることをさらに特徴とする。

【0019】事実、単一のマルチキャストパケットのこのような場合において、原パケットに関係したパケット制御データは、例えばこのマルチキャストパケットのパケット識別子および経路情報として直接的に使用されることができる。

【0020】また、本発明の別の特徴は、前記通信システムの出力に供給されたマルチキャストパケットが同じ原パケットから付加的なマルチキャストパケットを得るために前記通信システムの入力に戻されることである。

【0021】この方法において、上記定められた速度による単一の原パケットから導出されるマルチキャストパケットの数は増加されるかもしれない。

【0022】さらに本発明によれば、複数のマルチキャストパケット生成装置が設けられ、各マルチキャストパケット生成装置は前記通信システムの1つの入力と前記パケット交換ネットワークの1つの入力の間に結合される。

【0023】単一の原パケットから導出されるマルチキャストパケットの数を増加するための好ましい実施例において、前記複数のマルチキャストパケット生成装置は前記通信システムの同じ入力と前記パケット交換ネットワークの間に結合され、前記複数の各マルチキャストパケット生成装置の装置出力は前記入力の別々の1つに接続される。

【0024】同じ原パケットから導出される付加的なマルチキャストパケットは交換ネットワークにおける可能なパケット損失、つまり通信システムの入力に戻される上記マルチキャストパケットの損失に依存しない。さらに、付加的なマルチキャストパケットは原パケットから導出されるマルチキャストパケット自体からは導出されないでこの原パケットから直接得られるため、全マルチキャストパケットを生成するための遅延は減少される。

【0025】本発明の前述およびその他別の目的および特徴は、添付図面と共に実施例の以下の説明によってさらに明らかとなり、最良に理解されるであろう。

【0026】

【実施例】図1に示された通信システムは、例えば上記で説明されたような経路ネットワークと縦続接続された分配ネットワークによって構成される（詳細に図示されていない）典型的なパケット交換ネットワークＳＮを含む。この通信システムは、単一あるいは“マルチキャスト”接続を実行するように構成される。単一接続は、原パケットが通信システムの単一の入力Ｉ１／ｍからこのシステムの単一の出力Ｏ１／ｎへ伝送される時に実行される。マルチキャスト接続は、“コピー”が入力Ｉ１／ｍに供給される単一の原パケットから形成され、これらの“コピー”（“マルチキャストパケット”と呼ばれる）がこの通信システムの別々の出力Ｏ１／ｎあるいは単一の出力へ転送される時に実行される。例えばＴＶ分配のようなパケット分配時に生ずる後者の場合、通信集線装置に全て接続される異なる利用者へ向けて実行されなければならず、この集線装置は通信システムの単一の出力Ｏ１／ｎにそれ自体が接続される。

【0027】マルチキャスト接続を実行するため、通信システムは“コプレータ”（“packet COPy/header transLATORS”）とも呼ばれる複数のマルチキャストパケット生成装置ＣＰ１／ｍを備えている。これらのコプレータＣＰ１／ｍは、それぞれ通信システムの同じ符号で示された入力に接続された装置入力Ｉ１／ｍを有し、通信システムの同じ符号で示された出力に接続された出力Ｏ１／ｎを有する交換ネットワークＳＮの同じ符号で示された入力に接続された装置出力ＩＮ１／ｍを有する。

【0028】通信システムの入力Ｉ１／ｍで受信された各パケットあるいは情報セルは、ヘッダおよびデータフィールドを有する。ヘッダはパケット制御データを含み、パケット識別および経路情報が得られる。パケット識別は通信、すなわちパケットが属する入力出力接続Ｉ１／ｍ－Ｏ１／ｎを示し、経路情報はパケットの目的地、すなわちパケットが転送されなければならない1つ以上の出力Ｏ１／ｎの識別子あるいはアドレス、および交換ネットワークに後続される経路を示す。データフィールドは、通信システムの利用者によって自由に選択される利用者データを含む。

【0029】同じ出力Ｏ１／ｎに転送されなければならない同じ原パケットから導出される上記のマルチキャストパケットの場合において、これらのマルチキャストパ

ケット全ては同じ経路情報および利用者データを有し、したがってそれらのパケット識別子によってのみ弁別されることに注目される。

【００３０】単一接続が実行されなければならない時、パケットが転送されなければならない単一の出力Ｏ１／ｎのアドレスは一般的にそのパケットのヘッダに含まれたパケット制御データから直接得られる。この場合、パケットは変化せずにコプレータＣＰ１／ｍを通って伝送される。換言すると、コプレータＣＰ１／ｍはポイント間の接続のための透明な装置として動作する。しかしながら実際には、通信システムの入力Ｉ１／ｍがポイント間の接続のためにのみ使用される時、入力Ｉ１／ｍと対応する入力ＩＮ１／ｍとの間の直接的な接続はこれらの端子間のコプレータＣＰ１／ｍの利用に好ましい。

【００３１】マルチキャスト接続が実行されなければならない時、コプレータＣＰ１／ｍは多数のマルチキャストパケットをその装置入力Ｉ１／ｍにおいて供給された単一の原パケットから導出する。これら全てのマルチキャストパケットは装置入力に供給された原パケットと同じ利用者データをそれらのデータフィールドにおいて有し、原パケットのパケット制御データから導出される異なったパケット制御データをそれらのヘッダにおいて有する。また生成されるマルチキャストパケットの数は、原パケットのヘッダに含まれたパケット制御データから得られるかもしれない。

【００３２】原パケットのパケット制御データがポイント間の接続あるいはポイントとマルチポイントの接続のいずれかを示し、マルチキャストパケットのパケット制御データがポイント間の接続を示すのみであることに注目される。ポイント間の接続は単一の入力Ｉ１／ｍと単一の出力Ｏ１／ｎの間の接続であり、一方ポイントとマルチポイントとの接続は単一の入力Ｉ１／ｍと複数の出力Ｏ１／ｎとの間の接続である。

【００３３】すでに記載されたように、同じ原パケット全てから導出された異なるマルチキャストパケットはこの原パケットが供給される同じ入力あるいは装置入力Ｉ１／ｍから開始し、通信システムの同じあるいは異なる出力Ｏ１／ｎで終了するかもしれない。しかしながら、各コプレータＣＰ１／ｍは直列にマルチキャストパケットを生成し、交換ネットワークＳＮの対応する単一の入力ＩＮ１／ｍに接続される単一の装置出力ＩＮ１／ｍを有し、それによって生成されたマルチキャストパケット全てはこの入力を通って直列に伝送される。これは、マルチキャストパケットが異なる出力Ｏ１／ｎに転送されなければならない時でさえ、それら全てが同じ装置出力あるいは入力ＩＮ１／ｍを通過することを意味する。

【００３４】通信システムの阻止を防ぐため、コプレータＣＰ１／ｍからのマルチキャストパケットの出力速度は少なくとも各入力パケットから導出されるマルチキャストパケットの数によって乗算される原パケットの平均入力速度に等しい。例えば、コプレータＣＰ１／ｍの装置入力Ｉ１／ｍの原パケットの平均入力速度が３０Ｍビット毎秒であり、５つのマルチキャストパケットが各入力パケットから導出されなければならない場合、装置出力ＩＮ１／ｍのこれらのマルチキャストパケットの出力速度は１５０Ｍビット毎秒である。これらの速度を越えずに付加的なマルチキャストパケットが要求される場合、可能な方法はこの通信システムの出力Ｏ１／ｎで集められるマルチキャストパケットから構成される通信システムの入力Ｉ１／ｍ、すなわちコプレータＣＰ１／ｍの装置入力Ｉ１／ｍを再び注入することである。この方法において、このマルチキャストパケットは上記で定められたような原パケットとなり、そこから付加的なマルチキャストパケットを得るように使用される。

【００３５】好ましい実施例（図示されていない）において、２つ以上のコプレータＣＰ１／ｍは通信システムの同じ単一の入力Ｉ１／ｍに全て接続されたそれらの装置入力Ｉ１／ｍおよび交換ネットワークＳＮの異なる入力ＩＮ１／ｍに接続されたそれらの装置出力ＩＮ１／ｍを有する。この実施例は、別の“通常の”マルチキャストパケットとほぼ同時に上記の付加的なマルチキャストパケットを供給する利点を有し、同じ原パケットから全て得られ、交換ネットワークＳＮにおける可能なパケット損失と無関係な付加的なマルチキャストパケットの生成を行う。つまり、付加的なマルチキャストパケットは交換ネットワークＳＮを通ってすでに転送された１つのマルチキャストパケットからではなく原パケットから直接得られるので、付加的なマルチキャストパケットはＳＮを通るこの１つのマルチキャストパケットの転送遅延の後に生成されるのではなく、１つのマルチキャストパケットが交換ネットワークＳＮにおいて損失する場合でさえ生成される。

【００３６】コプレータＣＰ１／ｍは以下に説明されるように動作する。説明のこの次の部分におけるコプレータは、図１のコプレータＣＰ１／ｍのいずれかを表すＣＰとして一般的に参照される。ＣＰは図２に詳細に示され、それぞれ図１の装置入力Ｉ１／ｍの１つおよび装置出力ＩＮ１／ｍの１つに対応している装置入力Ｉおよび装置出力ＩＮを有する。

【００３７】図２を再び参照すると、コプレータＣＰは装置入力Ｉと装置出力ＩＮの間に入力論理装置ＩＬ、入力制御装置ＩＣ、ヘッダメモリＲＭ、ヘッダ端子ＨＩ、出力制御装置ＯＣ、パケット端子ＰＯおよび出力論理装置ＯＬの直列接続を含む。コプレータＣＰはデータメモリＤＭをさらに含み、そのデータ入力ＭＩは入力制御装置ＩＣの同じ名称ＭＩで示された第２の出力に接続され、そのデータ出力ＭＯは出力制御装置ＯＣの同じ名称ＭＯで示されたデータ端子に接続されている。

【００３８】入力論理装置ＩＬは、コプレータＣＰの内部タイミングと外部タイミングを相関するために入力パ

ケットを一時的にラッチする同期回路である。

【００３９】入力制御装置ＩＣは、入力パケットの有効性を確認する。有効なパケットがＩＣにおいて受信される時、例えばマルチキャストパケットを導出する原パケットが受信される時、この原パケットのヘッダに含まれたパケット制御データはヘッダメモリＲＭに伝送され、一方この原パケットのデータフィールドに含まれた利用者データはＩＣの出力ＭＩを介してデータメモリＤＭに伝送される。

【００４０】ヘッダメモリＲＭおよびデータメモリＤＭの両方は、これらのデータが出力制御装置ＯＣによって要求されるまでそこに受信されたデータを蓄積する。

【００４１】出力制御装置ＯＣは、原パケットから要求されたマルチキャストパケットを生成する。このために、出力制御装置ＯＣは、単一の原パケットから導出された各マルチキャストパケットに対して特定のパケット識別子および特定の経路情報を含んでいる新しいパケット制御データをＲＭに蓄積されているパケット制御データから導出する。それぞれの得られたパケット制御データは出力制御装置ＯＣによって生成された別々のマルチキャストパケットのヘッダに負荷され、そのデータフィールドはデータメモリＤＭに蓄積され、データ端子ＭＯを介して出力制御装置ＯＣに伝送される利用者データによって負荷される。連続的に生成されたマルチキャストパケットは、パケット端子ＰＯを介して出力論理装置ＯＬに直列に伝送される。

【００４２】入力論理装置ＩＬと同様に、出力論理装置ＯＬは装置出力ＩＮを介して交換ネットワークＳＮにそれらを解放する前にマルチキャストパケットを一時的にラッチする同期回路である。

【００４３】ヘッダメモリＲＭおよびデータメモリＤＭは複数のパケット制御データおよび複数の利用者データそれぞれを蓄積することが可能であり、これらのデータは異なる原パケットに属するということに注目される。

【００４４】出力制御装置ＯＣの可能な実施例が図３に示されている。この実施例における原パケットのパケット制御データはヘッダ端子ＨＩを介して受信され、ヘッダテーブルＨＭにおいてポインタとして使用される。受信されたパケット制御データによって示された位置のヘッダテーブルＨＭに含まれたデータは、ポインタの関連したリストの一部分を形成する別のポインタＰＯおよびパケット制御データである。この関連したリストはメモリ部分Ｌ１、Ｌ２およびＬｘによって図３に概略的に表され、これら全てのメモリ部分は例えばヘッダテーブルＨＭの一部分を形成する。

【００４５】メモリ部分Ｌ１をポインタで示すことによって、ポインタＰＯは新しいポインタＰ１およびパケット制御データＨ１を示す。このパケット制御データＨ１はメモリ部分Ｌ１から出力制御装置ＯＣの一部分を形成するパケット生成器ＰＧへ転送される。このパケット生成器ＰＧの別の入力端子は、出力制御装置ＯＣのデータ端子ＭＯによって構成される。データ端子ＭＯを介する利用者データの受信によって、パケット生成器ＰＧはヘッダにＬ１から受信されたパッケージ制御データＨ１を有し、データフィールドにデータメモリＤＭから受信された利用者データを有するマルチキャストパケットを生成する。パケット生成器ＰＧによって生成されたこのマルチキャストパケットは、パケット端子ＰＯに接続されるパケット生成器ＰＧの出力を介して出力論理装置ＯＬに伝送される。

【００４６】メモリ部分Ｌ１のポインタＰ１は、別のポインタＰ２および他のパケット制御データＨ２を含んでいる別のメモリ部分Ｌ２を指示する。この他のパケット制御データＨ２により、パケット生成器ＰＧは依然としてデータフィールドに同じ利用者データを有する別のマルチキャストパケットを生成する。さらにこの他のマルチキャストパケットは前述したように出力論理装置ＯＬに伝送される。

【００４７】コプレータＣＰに受信された原パケットから導出される全てのマルチキャストパケットは、上記のように生成される。

【００４８】原パケットから導出される最後のマルチキャストパケットは、例えばポインタＰｘが予め定められたコードを有するので対応しているメモリ部分Ｌｘに含まれたポインタＰｘが関連したリストの端部を示すという事実によって検出される。しかしながら、関連したリストのこの最後のメモリ部分Ｌｘに含まれたパケット制御データＨｘは有効であり、上記のように原パケットから導出される最後のマルチキャストパケットの生成のために使用される。

【００４９】この方法において、要求された量のマルチキャストパケットは生成されるマルチキャストパケットの数をはっきりと認識せずに原パケットから導出される。

【００５０】本発明の原理は特定の装置と関係して上記に説明されているが、この説明は単に例示であり、本発明の技術的範囲を限定するものではないことが明白に理解されるべきである。

【図面の簡単な説明】

【図１】本発明による交換ネットワークＳＮおよびマルチキャストパケット生成装置ＣＰ１／ｍのブロック図。

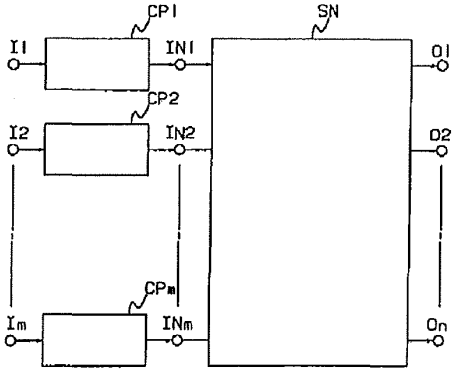
【図２】さらに詳細に図１のＣＰ１／ｍのマルチキャストパケット生成装置ＣＰのブロック図。

【図３】図２の装置ＣＰの出力制御装置ＯＣ形成部分のブロック図。

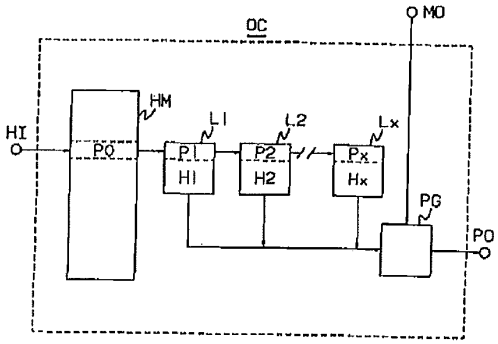
【符号の説明】

ＣＰ…装置，Ｉ…装置入力，ＩＮ…装置出力，Ｉ１／ｍ…入力，ＩＮ１／ｍ…入力，ＳＮ…交換ネットワーク。

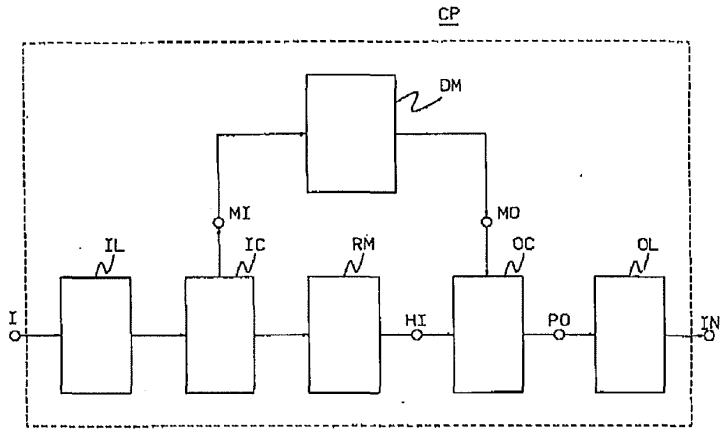
【図1】



【図3】



【図2】



VOICE PACKET PROCESSING SYSTEM

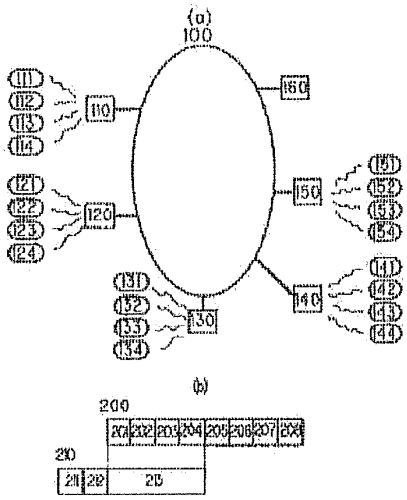
Publication number: JP6152601 (A)
Publication date: 1994-05-31

Inventor(s): MATSUDA TAKU; WATANABE YOSHINORI +
Applicant(s): MATSUSHITA ELECTRIC IND CO LTD +

Classification:
- international: ***G06F13/14; H04B7/26; H04L12/18; H04L12/28; H04Q11/04; H04Q7/38;*** **G06F13/14; H04B7/26; H04L12/18; H04L12/28; H04Q11/04; H04Q7/38;** (IPC1-7): G06F13/14; H04B7/26; H04L12/18; H04L12/28; H04Q11/04
- European:
Application number: JP19920302014 19921112
Priority number(s): JP19920302014 19921112

Abstract of **JP 6152601 (A)**

PURPOSE:To relieve the load on a radio base station and a network by gathering plural slots in operation into one and applying a packet processing to voice data with the group address of the grouped slots as a destination address. CONSTITUTION:A frame using one frequency sent from a radio terminal station to a radio base station is divided into 8 slots, and 4 slots each are allocated to transmission and reception respectively. In the case of communication from a terminal station 111 using the slot 201 of a frame 200 to a terminal station 121, from a terminal station 112 using the slot 202 of the frame 200 to a terminal station 131, and from a terminal station 113 using the slot 203 of the frame 200 to a terminal station 141, a base station 110 generates transmission slots 201-203 in which a multiple address communication address is set to a destination address 211 of a transmission packet 210 and a sender address 212 is set to the address of the base station 110 as a data part 213 of the packet 210 and sends the packet to a network 100. Thus the load of the network is relieved by forming voice data divided into plural slots to one packet and sending the packet in the form of multiple address communication.



(19)日本国特許庁（ＪＰ）　(12)**公開特許公報**（Ａ）　(11)特許出願公開番号

特開平6－152601

(43)公開日　平成６年(1994)５月31日

(51)Int.Cl.[5]	識別記号	庁内整理番号	ＦＩ	技術表示箇所
Ｈ０４Ｌ　12/28				
Ｇ０６Ｆ　13/14	３２０　Ｆ	8133－5B		
Ｈ０４Ｂ　7/26	１０９　Ｎ	7304－5K		
		8732－5K	Ｈ０４Ｌ　11/00　３１０　Ｂ	
		8732－5K	11/18	

審査請求　未請求　請求項の数２(全　５　頁)　最終頁に続く

(21)出願番号　特願平4－302014

(22)出願日　平成４年(1992)11月12日

(71)出願人　000005821
松下電器産業株式会社
大阪府門真市大字門真1006番地

(72)発明者　松田　卓
大阪府門真市大字門真1006番地　松下電器産業株式会社内

(72)発明者　渡辺　善規
大阪府門真市大字門真1006番地　松下電器産業株式会社内

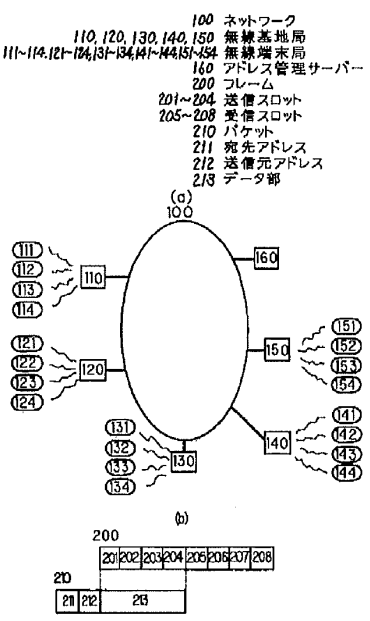
(74)代理人　弁理士　小鍜治　明　(外２名)

(54)【発明の名称】　音声パケット化方式

(57)【要約】

【目的】　無線基地局をＬＡＮに接続可能とし、使用中の送信スロット全てをまとめて１つのパケットにしてＬＡＮ上に同報し、リアルタイム音声を効率良く収容することを目的とする。

【構成】　無線端末局111～114,121～124,131～134,141～144,151～154を複数有し、無線基地局110,120,130,140,150を複数接続したネットワーク100において、使用中の送信スロット全てをまとめて１つのパケット210とし、ネットワーク上の複数の無線基地局のアドレスを１つのグループアドレスとして管理する装置160を有し、複数のスロットに対応したグループアドレスを宛先アドレスとしてパケットを構成するパケット生成部を有する音声パケット化方式である。



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【特許請求の範囲】

【請求項１】同一周波数上の信号を複数のスロットに分割して、送受信に前記スロットを割当てるスロット制御部と、無線基地局とデータの送受信する無線送受信部と、一つのフレーム上に同時に複数の双方向通信チャネルを設定することが可能な無線端末局を複数有し、ネットワークと接続するＬＡＮインターフェース部と、前記無線端末局とデータを送受信する無線送受信部とから構成される無線基地局を複数接続した前記ネットワークにおいて、前記無線端末局から受信した使用中の送信スロット全てをまとめて１つのパケットとして前記ＬＡＮ上に一斉同報することを特徴とした音声パケット化方式。

【請求項２】ネットワークにおいて一意に決定されたアドレスを有する無線基地局において、前記ネットワーク上に、複数の前記無線基地局の前記アドレスを１つのグループアドレスとして管理するアドレス管理サーバーを有し、複数のスロットに対応した前記グループアドレスを宛先アドレスとしてパケットを構成するパケット生成部を有することを特徴とした請求項１記載の音声パケット化方式。

【発明の詳細な説明】

【０００１】

【産業上の利用分野】本発明はデジタル無線通話システムに関するものである。

【０００２】

【従来の技術】図２（ａ）は、従来のデジタル無線通話システムの構成を示すものである。無線端末局３１１～３１４は無線基地局３１０を介してネットワーク３００に接続され、無線端末局３２１～３２４は無線基地局３２０を介してネットワーク３００に接続され、無線端末局３３１～３３４は無線基地局３３０を介してネットワーク３００に接続され、無線端末局３４１～３４４は無線基地局３４０を介してネットワーク３００に接続され、無線端末局３５１～３５４は無線基地局３５０を介してネットワーク３００に接続されている。

【０００３】図２（ｂ）は、無線基地局３１０におけるある周波数上のあるスロットの構成を示したものである。スロット４００は無線端末局の音声データを、データ部４３０に持ち、送信元の無線端末局３１１のアドレスと送信元無線基地局のアドレスを送信元アドレス部４２０に持ち、宛先の無線基地局のアドレスと宛先無線基地局のアドレスを宛先アドレス部４１０に持っている。

【０００４】無線端末局３１１と無線端末局３２１が通信を行う場合、無線端末局３１１と無線基地局３１０の一意に決定されるネットワーク３００上のアドレスをスロット４００中の送信元アドレス部４２０に持ち、無線端末局３２１と無線基地局３２０の一意に決定されるネットワーク３００上のアドレスをスロット４００中の宛先アドレス部４１０に持ち、音声データをスロット４００中のデータ部４３０に持つことにより、通信を行う。

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【０００５】しかし、この方法では１スロット当たりのデータ部の占める割合が少なく非常に効率が悪い。音声データをできるだけリアルタイムに送るため、１スロットは数１０バイトで構成されており、通常のパケット通信のように宛先アドレス、送信元アドレスを持つことは、単位時間当たりの情報量が減少することになり好ましくない。

【０００６】

【発明が解決しようとする課題】本発明は、上記問題点を解決するもので、使用されている複数のスロットだけを１つにまとめ、使用されているスロットのグループアドレスを宛先アドレスとして通信を行う音声パケット化方式である。

【０００７】

【課題を解決するための手段】同一周波数上の信号を複数のスロットに分割して、送受信にスロットを割当てるスロット制御部と、無線基地局とデータの送受信する無線送受信部と、一つのフレーム上に同時に複数の双方向通信チャネルを設定することが可能な無線端末局を複数有し、ネットワークと接続するＬＡＮインターフェース部と、無線端末局とデータを送受信する無線送受信部とから構成される無線基地局を複数接続したネットワークにおいて、複数の無線基地局のアドレスを１つのグループアドレスとして管理する装置を有し、複数のスロットに対応したグループアドレスを宛先アドレスとしてパケットを構成するパケット生成部を有することを特徴としたパケット音声化方式。

【０００８】

【作用】ＬＡＮに接続されている無線基地局は、無線端末局からの音声データを受信し、送信しなければならないＬＡＮに接続されている無線基地局に送信し、無線端末局に送信する。複数の無線端末局から受信した音声データスロットを無線基地局は、送信元アドレスに自局のアドレスを指定し、宛先アドレスに送信が必要なすべての無線基地局に対応するグループアドレスを指定し、使用されている音声データスロット全てを１つにまとめでデータとしパケット化することで通信を行う。

【０００９】

【実施例】図１（ａ）は、本実施例で説明するネットワークの構成を示すものである。無線端末局１１１～１１４は無線基地局１１０を介してネットワーク１００に接続され、無線端末局１２１～１２４は無線基地局１２０を介してネットワーク１００に接続され、無線端末局１３１～１３４は無線基地局１３０を介してネットワーク１００に接続され、無線端末局１４１～１４４は無線基地局１４０を介してネットワーク１００に接続され、無線端末局１５１～１５４は無線基地局１５０を介してネットワーク１００に接続されている。また、無線基地局１１０、１２０、１３０、１４０、１５０のアドレスを１つのグループアドレスとして管理するアドレス管理サ

ーバー１６０がネットワーク１００に接続されている。

【００１０】図１（ｂ）は、無線端末局が無線基地局に送信する１つの周波数上のフレーム２００を示している。フレーム２００は８つのスロット２０１～２０８に分割して、無線端末局から送信に４スロット２０１～２０４、無線端末局から受信に４スロット２０５～２０８を割り当てている。すなわち、１つのフレーム２００上に同時に４つの双方向通信チャネルを設定することができ、別の周波数でもそれぞれ同様に４スロットを使用できる。

【００１１】図３（ａ）は、本発明の請求項１の実施例であり、無線端末局からの送信の流れ図である。

（１）宛先アドレスを決定する。

（２）無線端末局から音声データを受信する。

（３）宛先に対応する送信スロットにデータを渡す。

（４）同報アドレスを宛先アドレス、自局のアドレスを送信元アドレスとし、使用中の送信スロットをまとめて１つにし、データとしてパケットを生成する。

（５）パケットをネットワークに一斉同報する。

【００１２】以上の手続きで１回の送信が行われる。具体的に以下に述べる。無線端末局１１１がスロット２０１を用いて無線端末局１２１と通信を行い、無線端末局１１２がスロット２０２を用いて無線端末局１３１と通信を行い、無線端末局１１３がスロット２０３を用いて無線端末局１４１と通信を行いたい場合、無線基地局１１０は同報アドレスを送信パケット２１０の宛先アドレス２１１とし、無線基地局１１０のアドレスを送信元アドレス２１２とし、送信スロット２０１～２０３を送信パケット２１０のデータ部２１３として構成し、ネットワーク１００に送信する。

【００１３】図３（ｂ）は、請求項２記載の発明の実施例であり、無線端末局からの送信の流れ図である。

（１）宛先アドレスを決定する。

（２）無線端末局から音声データを受信する。

（３）宛先に対応する送信スロットにデータを渡す。

（４）フレームの使用中の送信スロットに対応するグループアドレスをアドレス管理サーバーに要求する。

（５）グループアドレスを受信。

（６）グループアドレスを宛先アドレス、自局のアドレスを送信元アドレスとし、使用中の送信スロットをまとめて１つにし、データとしてパケットを生成する。

（７）パケットをネットワークに同報する。

以上の手続きで１回の送信が行われる。具体的に以下に述べる。

【００１４】無線端末局１１１がスロット２０１を用いて無線端末局１２１と通信を行い、無線端末局１１２がスロット２０２を用いて無線端末局１３１と通信を行い、無線端末局１１３がスロット２０３を用いて無線端末局１４１と通信を行いたい場合、無線端末局１１１～１１３が無線で接続されている無線基地局１１０は、無線端末局１２１、１３１、１４１のグループアドレスを、アドレス管理サーバー１６０に要求する。無線基地局１１０がアドレス管理サーバー１６０からグループアドレスを受信すると、そのアドレスを送信パケット２１０の宛先アドレス２１１とし、無線基地局１１０のアドレスを送信元アドレス２１２とし、送信スロット２０１～２０３を送信パケット２１０のデータ部２１３として構成し、ネットワーク１００に送信する。使用中の複数の送信スロットをまとめてデータ部２１３としてパケットを構成する。データ部２１３として構成されるのは使用中のスロットに関してのみであり、使用されていないスロットに関しては、そのスロットをパケットのデータ部に含めない。

【００１５】また、請求項１記載の発明の実施例においては、生成したパケット２１３をネットワーク１００に接続された無線基地局１２０、１３０、１４０、１５０に送信するが、請求項２記載の発明の実施例においては、送信が必要な無線基地局１２０、１３０、１４０にだけ送信する。パケットの宛先アドレス部２１１、送信元アドレス部２１２をそれぞれのスロットに付加せず通信できることでオーバーヘッドを少なくし、ネットワークの負荷も軽減される。また、実時間音声通信で重要な遅延を少なくすることができる。

【００１６】

【発明の効果】複数のスロットに分割された音声データを１つのパケットにし、同報することによってネットワークの負荷が軽減される。また、一斉同報通信はパケットのオーバーヘッドを減らせるが、音声データを受信する必要のない無線基地局に対しても送信されるため、全ての無線基地局は受信したデータが必要かどうかを判定する必要があり、通話中でない無線基地局に負荷がかかる。

【００１７】ネットワークにおいて一意に決定されたアドレスを持ち、更に複数のアドレスを一つのグループアドレスとして管理するアドレス管理サーバーをネットワークに持たせ、パケットの宛先アドレスにグループアドレスを指定することによって受信が必要な無線基地局に対してのみ音声データを送信することが可能となり無線基地局の負荷は軽減され、更にネットワークの負荷も軽減される。

【図面の簡単な説明】

【図１】（ａ）は本発明に関するネットワークの構成図

（ｂ）は本発明の音声データをパケット化するパケット構成図

【図２】（ａ）は従来の例で示す無線端末局とＰＢＸと接続した無線基地局の構成図

（ｂ）は従来の例で示す送受信スロットの図

【図３】（ａ）は従来の例で示す無線基地局からの送信の流れ図

（ｂ）は本発明の無線基地局からの送信の流れ図

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【符号の説明】
１００　ネットワーク
１１０、１２０、１３０、１４０、１５０　無線基地局
１１１～１１４、１２１～１２４、１３１～１３４、１４１～１４４、１５１～１５４　無線端末局
１６０　アドレス管理サーバー
２００　フレーム
２０１～２０４　送信スロット
２０５～２０８　受信スロット
２１０　パケット
２１１　宛先アドレス

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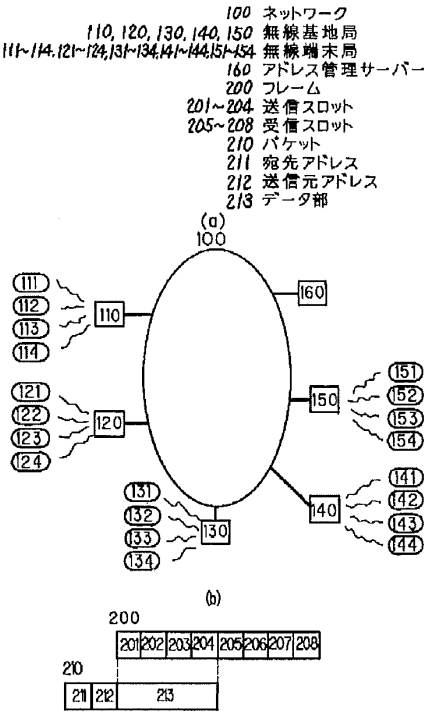
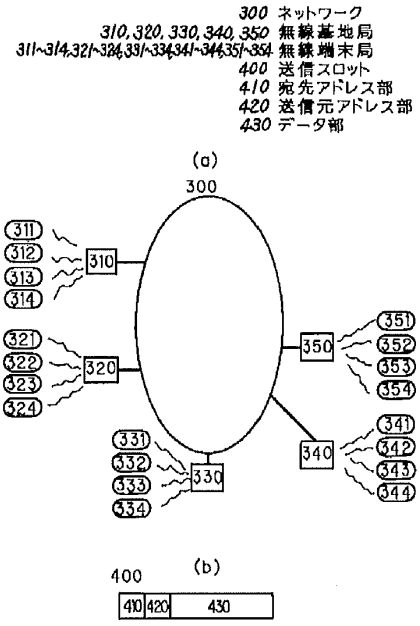
＊２１２　送信元アドレス
２１３　データ部
３００　ネットワーク
３１０、３２０、３３０、３４０、３５０　無線基地局
３１１～３１４、３２１～３２４、３３１～３３４、３４１～３４４、３５１～３５４　無線端末局
４００　送信スロット
４１０　宛先アドレス部
４２０　送信元アドレス部
４３０　データ部

＊

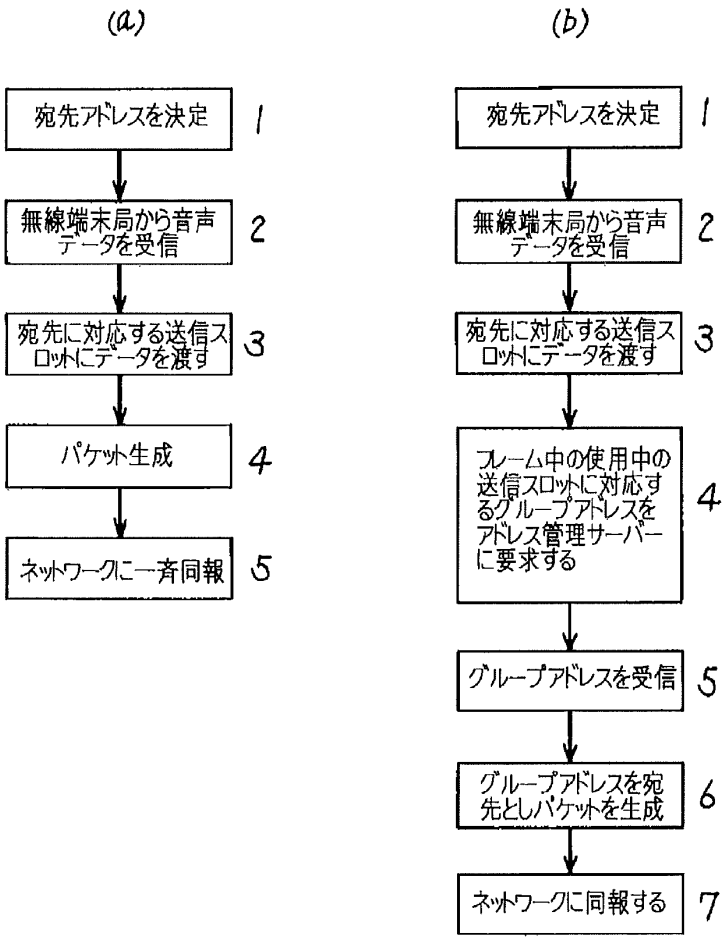
【図１】



【図２】



【図3】



フロントページの続き

(51)Int.Cl.[6]	識別記号	庁内整理番号	FI		技術表示箇所
H04L 12/18					
H04Q 11/04					
		9076－5K	H04Q 11/04	R	

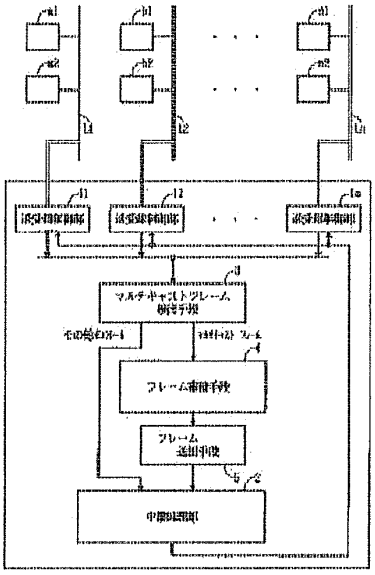
MULTICAST COMMUNICATION REPEATING INSTALLATION

Publication number: JP7254900 (A)
Publication date: 1995-10-03
Inventor(s): OBARA SATOSHI +
Applicant(s): FUJITSU LTD +
Classification:
- International: ***G06F13/00; H04L12/18; H04L12/28; H04L12/46; H04L12/56; H04L12/66;*** **G06F13/00; H04L12/18; H04L12/28; H04L12/46; H04L12/56; H04L12/66;** (IPC1-7): G06F13/00; H04L12/18; H04L12/28; H04L12/46; H04L12/66
- European:
Application number: JP19940044560 19940316
Priority number(s): JP19940044560 19940316

Also published as:
JP3486946 (B2)

Abstract of **JP 7254900 (A)**

PURPOSE:To minimize the load or a network due to a multicast response frame with respect to the repeating installation, which relay plural networks and transmission/reception equipments. CONSTITUTION:A multicast frame detecting means 3, a frame storing means 4, and a frame sending means 5 are provided. The multicast frame detecting means 3 receives frames from transmission/reception parts 11 to 1n and detects response frame to transfer it to the frame storing means 4 but transfers the other frames to a repeating processing.part 2. This part 2 sends frames to networks through proper transmission/reception parts 11 to 1n in accordance with their destination addresses. The frame storing means 4 stores response frames; and when a certain condition is satisfied, this means 4 starts the frame sending means 5, and frames of the same destination address out of frames stored in the frame storing means 4 are coupled and are transferred to the repeating processing part 2 as one frame.



(19)日本国特許庁（ＪＰ）　(12) **公開特許公報（A）**　(11)特許出願公開番号

特開平7－254900

(43)公開日　平成7年(1995)10月3日

(51)Int.Cl.[6]	識別記号	庁内整理番号	ＦＩ	技術表示箇所
Ｈ０４Ｌ　12/18				
Ｇ０６Ｆ　13/00	３５３　Ａ	7368－5B		
Ｈ０４Ｌ　12/46				
		9466－5K	Ｈ０４Ｌ　11/ 18	
			11/ 00　３１０　Ｃ	

審査請求　未請求　請求項の数４　ＯＬ　（全 7 頁）　最終頁に続く

(21)出願番号　特願平6－44560

(22)出願日　平成6年(1994)3月16日

(71)出願人　000005223
富士通株式会社
神奈川県川崎市中原区上小田中1015番地

(72)発明者　小原　聡史
神奈川県川崎市中原区上小田中1015番地
富士通株式会社内

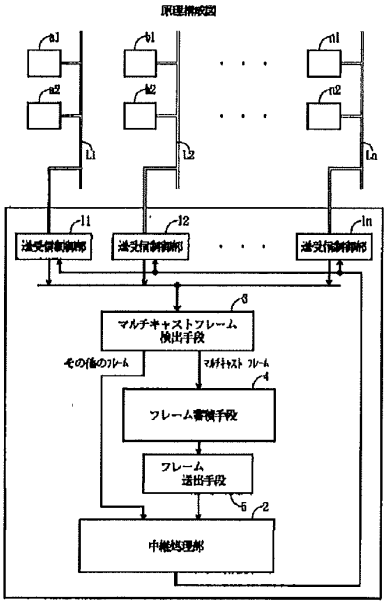
(74)代理人　弁理士　井桁　貞一

(54)【発明の名称】　マルチキャスト通信中継装置

(57)【要約】

【目的】複数のネットワークを中継する中継装置と送受信装置に関し、マルチキャスト応答フレームによるネットワークの負荷が最小限になるようにする。

【構成】マルチキャストフレーム検出手段３と、フレーム蓄積手段４と、フレーム送出手段５とを設ける。マルチキャストフレーム検出手段３は、送受信部11～1nからフレームを受けとり、応答フレームであることを検出すると、フレーム蓄積手段４に渡し、その他のフレームは中継処理部２に渡す。中継処理部２は渡されたフレームの宛先アドレスによって、適切な送受信部11～1nを介してネットワークへ送出する。フレーム蓄積手段４は、渡されたフレームを蓄積し、一定条件を満たすと、フレーム送出手段５を起動し、フレーム蓄積手段４に蓄積されたフレームの宛先アドレスの同じものを結合して１つのフレームとして中継処理部２に渡す。



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【特許請求の範囲】

【請求項１】　マルチキャスト通信が可能なネットワーク（L1～Ln）のインタフェース制御を行う複数の送受信制御部（11～1n）と、受信したフレームを他の１つ以上のネットワークに中継する中継処理部（２）とを有し、複数のネットワーク（L1～Ln）間の中継を行う中継装置において、

マルチキャストフレーム検出手段（３）と、フレーム蓄積手段（４）と、フレーム送出手段（５）とを設け、

マルチキャストフレーム検出手段（３）は、送受信制御部（11～1n）からフレームを受けとり、フレームがマルチキャスト応答フレームであることを検出すると、そのフレームをフレーム蓄積手段（４）に渡し、その他のフレームは中継処理部（２）に渡し、

フレーム蓄積手段（４）は、渡されたフレームを蓄積し、一定条件を満たすと、フレーム送出手段（５）を起動し、

フレーム送出手段（５）は、フレーム蓄積手段（４）に蓄積されたフレームを調べて、宛先アドレスの同じものを結合して１つのフレームとして中継処理部（２）に渡すことを特徴とするマルチキャスト通信中継装置。

【請求項２】　フレーム蓄積手段（４）は蓄積領域（41m）を複数個設けてあり、その蓄積領域（41m）に対応して複数のタイマ（42m）を備え、

マルチキャストフレーム検出手段（３）は、送受信制御部（11～1n）からフレームを受けとり、フレームがマルチキャスト要求フレームであることを検出すると、フレーム蓄積手段（４）の蓄積領域を確保して宛先アドレスを登録して中継処理部（２）に渡し、フレームがマルチキャスト応答フレームであることを検出すると、そのフレームをフレーム蓄積手段（４）に渡し、その他のフレームは中継処理部（２）に渡し、

フレーム蓄積手段（４）は、渡されたフレームの宛先アドレスと登録されたアドレスとを比較して条件を満足した蓄積領域に蓄積し、条件を満足する蓄積領域がなければ中継処理部（２）に渡し、蓄積した状態が一定条件を満たした蓄積領域があると、その蓄積領域を指定してフレーム送出手段（５）を起動し、

フレーム送出手段（５）は、フレーム蓄積手段（４）の指定された蓄積領域に蓄積されたフレームを結合して１つのフレームとして中継処理部（２）に渡すことを特徴とする請求項１に記載のマルチキャスト通信中継装置。

【請求項３】　フレームの宛先アドレスに加えてフレームの識別子を条件比較の対象とすることを特徴とする請求項１または請求項２に記載のマルチキャスト通信中継装置。

【請求項４】　フレームの宛先アドレスに加えてフレームの識別子と送信元アドレスとを条件比較の対象とすることを特徴とする請求項１または請求項２に記載のマルチキャスト通信中継装置。

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【発明の詳細な説明】

【０００１】

【産業上の利用分野】本発明は、複数のネットワークを中継装置で接続しているコンピュータネットワークシステムにおける中継装置と送受信装置に関する。

【０００２】近年のコンピュータネットワークシステムにおいては、ネットワークの多様化、複雑化、規模の拡大に伴い、複数のネットワークが中継装置により接続されるようになった。また、各種のプロトコルにおいて、アドレス確認やネットワーク管理のために一度に複数の装置に対して応答を求めるマルチキャストフレームが数多く使用されている。そのようなシステムでは、１つのマルチキャスト要求フレームに対して多くのマルチキャスト応答フレームが返ってくる。そのため、マルチキャスト応答フレームによるネットワークの負荷が最小限になるようにすることが要求されている。

【０００３】

【従来の技術】複数のネットワークとそれらを中継する中継装置よりなるネットワークの構成例を図４に示し、マルチキャスト通信のフレームのフォーマットの例を図５に示す。図において、マルチキャスト通信を行おうとする発信局（コンピュータ）Ｒは、フレーム内の宛先アドレスＤＡにマルチキャストであることを指定し、送信元アドレスＳＡに自分のアドレスを表示し、識別子Ｃにマルチキャスト要求であることを表示して送信する。マルチキャストの対象になった受信局Ａは、これに応答して宛先アドレスＤＡにマルチキャスト発信局Ｒのアドレス（受信したフレームの送信元アドレスＳＡに表示してあったアドレス）を指定し、送信元アドレスＳＡに自分のアドレスを表示し、識別子Ｃにマルチキャスト応答であることを表示したフレームを送信する。発信局（コンピュータ）Ｒにとって、一般にマルチキャスト要求フレームは１つであるが、それに対して返ってくるマルチキャスト応答フレームは複数である。

【０００４】従来の中継装置Ｊにおいては、マルチキャスト通信であることを特に区別していないため、図４に示すように、各局からのマルチキャスト応答フレームをそのまま発信局Ｒへ向けて中継する。

【０００５】

【発明が解決しようとする課題】従って、応答フレームがすべて発信局Ｒに集中することになり、中継装置Ｊ、発信局Ｒ、発信局Ｒの属するネットワークＬ２の負荷が非常に重くなるという問題がある。例えば、１つのネットワークの局数を１００とすれば、ある局が全局へのマルチキャストメッセージを発信したとすると、その局への応答フレームは９９である。このようなネットワークを中継装置によって１０個結合すれば、各ネットワークに各１００局が存在し、発信局への応答フレーム数は９９９に達する。また、中継装置によってネットワークを多段階に結合すれば、発信局への応答フレーム数はさら

に増大し、途中のネットワークの負荷も増大する。

【０００６】本発明は、中継装置において、マルチキャスト要求フレームに対する複数の応答フレームを結合して中継することにより、全体のフレーム数を抑え、ネットワークの負荷を軽減することを目的とする。

【０００７】

【課題を解決するための手段】図１は本発明の原理ブロック図である。マルチキャスト通信が可能なネットワークL1～Lnのインタフェース制御を行う複数の送受信制御部11～1nと、受信したフレームを他の１つ以上のネットワークに中継する中継処理部２とを有し、複数のネットワークL1～Ln間の中継を行う中継装置において、第１の発明は、マルチキャストフレーム検出手段３と、フレーム蓄積手段４と、フレーム送出手段５とを設ける。

【０００８】マルチキャストフレーム検出手段３は、送受信制御部11～1nからフレームを受けとり、フレームがマルチキャスト応答フレームであることを検出すると、そのフレームをフレーム蓄積手段４に渡し、その他のフレームは中継処理部２に渡す。中継処理部２は渡されたフレームの宛先アドレスによって、適切な送受信制御部11～1nを介してネットワークへ送出することは従来と同じである。

【０００９】フレーム蓄積手段４は、渡されたフレームを蓄積し、一定条件を満たす（例えば、一定フレーム数に達する、一定データ量に達する、一定時間が経過する）と、フレーム送出手段５を起動する。

【００１０】フレーム送出手段５は、フレーム蓄積手段４に蓄積されたフレームを調べて、宛先アドレスの同じものを結合して１つのフレームとして中継処理部２に渡す。第２の発明は、第１の発明において以下の点を追加変更する。

【００１１】フレーム蓄積手段４は蓄積領域41m を複数個設けており、その蓄積領域41m に対応して複数のタイマ42m を備える。マルチキャストフレーム検出手段３は、送受信制御部11～1nからフレームを受けとり、フレームがマルチキャスト要求フレームであることを検出すると、フレーム蓄積手段４の蓄積領域を確保して送信元アドレスを登録して、中継処理部２に渡す。

【００１２】フレーム蓄積手段４は、渡されたフレーム（すなわちマルチキャスト応答フレーム）の宛先アドレスと登録されたアドレスとを比較し、一致すればその蓄積領域に蓄積し、一致する領域がなければ中継処理部２に渡し、蓄積した状態が一定条件を満たした（例えば、一定フレーム数に達した、一定データ量に達した、タイマ42m によって一定時間が経過したことが分かった）蓄積領域があると、その蓄積領域を指定してフレーム送出手段５を起動する。

【００１３】フレーム送出手段５は、フレーム蓄積手段４の指定された蓄積領域に蓄積されたフレームを結合して１つのフレームとして中継処理部２に渡す。第３の発明は、前述の各発明において、フレームの宛先アドレスの代わりにフレームの宛先アドレスと識別子とを一致比較の対象とする。

【００１４】第４の発明は、第３の発明の条件比較の対象としてさらに送信元アドレスを加える。

【００１５】

【作用】以下簡単にするため、マルチキャスト要求フレームを要求フレーム、マルチキャスト応答フレームを応答フレーム、マルチキャスト要求フレームを送信する局を発信局、マルチキャスト応答フレームを送信する局を受信局、要求フレーム内の宛先アドレスＤＡの内容および応答フレーム内の送信元アドレスＳＡの内容を受信局アドレス、応答フレーム内の宛先アドレスＤＡの内容および要求フレーム内の送信元アドレスＳＡの内容を発信局アドレスと呼ぶ。

【００１６】中継装置はフレームを受信するごとに、それがマルチキャストフレームであるかどうかを判断する。マルチキャストフレームでなければ、すなわち個別通信フレームであれば、通常の中継動作を行う。第１の発明では、要求フレームも通常の中継動作を行う。応答フレームであると、内部に蓄積しておく。そして、一定の条件が達成されると（例えば蓄積可能な限界になると、または一定時間が経過すると）、蓄積した応答フレームを調べて、宛先アドレス（発信局アドレス）が同じものを結合して１つのフレームとした上で中継動作を行う。蓄積した応答フレームの宛先アドレス（発信局アドレス）は複数ある場合があり、その場合は同様の動作を繰り返す。

【００１７】従って、要求フレームを発信した局に対しては応答フレームがいくつかまとめられて送られるので、フレーム数は減少する。第２の発明では、さらに、応答フレームを蓄積する際に宛先アドレス（発信局アドレス）ごとに分けておくので、結合する処理が容易で短時間ですむ。

【００１８】第１および第２の発明では同一の発信局が複数の要求フレームを続けて送信した場合には、異なった要求フレームに対する応答フレームが混在して結合される可能性があるが、第３の発明では、応答フレームの結合を、宛先アドレス（発信局アドレス）だけでなく、メッセージの識別子をも区別して行うので混在することがなく、受け取った局での処理が容易になる。第４の発明では応答フレームの結合をさらに受信局アドレスのグループをも区別して行うので、特にマルチキャスト要求が受信局のグループ指定の場合に、確実に混在しなくなる。

【００１９】上記作用により、同じ宛先に対する複数の応答フレームを結合することが可能となり、全体のフレーム数を抑え、マルチキャスト要求フレームの発信局、発信局の属するネットワークの負荷を軽減させることが可能になる。

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【００２０】

【実施例】以下、図面を参照して本発明の実施例を説明する。図２は本発明の一実施例の構成図であり、複数のＬＡＮ（L1、L2、・・Ln）を結合した状態を示している。図１と同一の機能のものは、同一の符号を付して示す。

【００２１】図において、11～1nはフレームを送受信する複数の送受信制御部であり、ネットワーク上の電気信号をデータに変換する回路である。３は受信したフレームの宛先がマルチキャストかどうかを判断するマルチキャストフレーム検出手段であり、比較器を中心とする論理回路で構成され、宛先アドレス、識別子の比較を行う。４は受信した応答フレームの結合を行うフレーム蓄積手段であり、複数の領域411 ～41m に分けられた例えばメモリバッファなどの回路で構成する。それらに対応してタイマ421 ～42m が設けてあり、タイマ用ＬＳＩまたはカウンタ論理回路などで構成する。２は受信したフレームを他の１つ以上のネットワークに中継する中継処理部であり、例えば処理装置またはソフトウェアによって構成する。従来の中継処理部と本質的に同じであり、ここで中継宛先の判断、およびネットワークのフレームフォーマットの相違や、手順の相違等を変換する。

【００２２】以下に、図３に示した実施例のマルチキャスト通信のフレームフォーマットを参照しながら、図２に示した中継装置によってネットワーク間で中継する場合の動作を説明する。ここで、ネットワークＬ１，Ｌ２，・・，Ｌｎはそれぞれ、複数のパーソナルコンピュータ、ワークステーション等による局ａ1 ～，ｂ1 ～，ｎ1 ～ を結合するＬＡＮである。

【００２３】局ａ1 から全ネットワーク、全局に対してマルチキャスト要求フレームを送信する場合を考える。局ａ1 は、図３（１）に示すようなフォーマットのフレームの宛先アドレスＤＡのM部分にマルチキャスト全局向け（M＝'FF'）を指定し、識別子Ｃにマルチキャスト要求（CODE＝'01'）を指定して送信する。

【００２４】局ａ1 と同じＬＡＮ(L1)に属する局ａ2 ～は従来と同じく、要求フレームを受信すると、それぞれ個別に応答フレームを返す。本実施例の中継装置は、送受信制御部11を通して、要求フレームを受信する。受信したフレームはマルチキャストフレーム検出手段３へ送られ、マルチキャストフレームかどうかを判断される。要求フレームの場合は、その内部にある宛先アドレスと識別子に対応して、フレーム蓄積手段４のバッファを確保した上で、受信したマルチキャストフレームを中継処理部２へ送り、他の送受信制御部12～ 1nを通して各ＬＡＮに中継する。

【００２５】局ｂ1 ～では、それぞれ要求フレームを受信し、それに対する応答フレームを生成する。応答フレームは、先に受信した要求フレームの送信元アドレス（発信局アドレス）の内容を宛先アドレスＤＡとし、必要な識別子Ｃを付与して、ＬＡＮ上にそれぞれ送信する。

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【００２６】本実施例の中継装置では、各送受信制御部から受信したフレームをマルチキャストフレーム検出手段３によりマルチキャストの応答フレームであると判断するとフレーム蓄積手段へ渡す。フレーム蓄積手段４ではそれぞれのフレームの宛先アドレスと識別子が登録されているかどうかを調べ、登録されていればフレーム蓄積手段４の該当するバッファに蓄積する。登録されたバッファがなければ中継処理部２に渡す。中継処理部２に渡された場合は従来の個別中継と同じになる。

【００２７】フレーム蓄積手段４は、各バッファ毎に、一定数のフレームを蓄積したとき、蓄積限界に達したとき、およびタイムアウトになったとき、フレーム送出手段５を起動する。フレーム蓄積手段４では各バッファに最初の応答フレームが入ったときに（またはバッファの登録時でもよい）、各バッファに対応するタイマ421～42m を動作させる。このタイマが満了したときがタイムアウトである。

【００２８】フレーム送出手段５は、起動してきたフレーム蓄積手段４のバッファの内容を結合して図３（２）に示す結合応答フレームを生成して中継処理部２へ渡す。このフレームは１つの応答フレームの形式になっており、中継処理部２は通常の中継処理を行うだけである。

【００２９】従って、応答フレームはいくつか結合されて中継されることになる。タイムアウトによって、最後にフレーム蓄積手段のバッファに残ったフレームを結合して送信する。

【００３０】局ａ1 はＬＡＮ(L1)からフレームを受信したときに、マルチキャストの応答フレームであり、かつ結合応答フレームであると認識すると、そのフレームはＤＡＴＡ部が複数の応答フレームの送信元アドレスと識別子とデータの連結されたものであるから、分離して処理すればよい。

【００３１】本実施例は、中継処理部２以外はハードウェア（論理回路）によって構成するものとして説明したが、送受信制御部以外は、プロセサとメモリとその上のソフトウェアで構成してもよい。その場合は、第１の発明を適用してフレーム蓄積手段はメモリ上に領域をとり、マルチキャストの応答フレームを領域の限界まで蓄積してから、フレーム送出手段５（これもプログラムである）によって宛先アドレスと識別子（送信元アドレスも判断対象に入れてもよい）を判断して結合するようにすると簡単に構成できる。なおフレーム蓄積手段はダブルバッファ構成とすれば、フレームの結合処理中にフレームの受付処理を並行して行うことができる。

【００３２】また、ネットワークがＬＡＮであるとして説明したが、ＷＡＮであってもよいし、ＬＡＮとＷＡＮが混在してもよいし、ネットワークの仕様が異なるもの

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であってもよい。

【００３３】

【発明の効果】以上説明したように、本発明によれば、中継装置において複数のマルチキャスト応答フレームを結合して１つにするので、発信局の存在するネットワークに対する中継装置からの応答フレーム数は、局から送信されたマルチキャスト応答フレームの数よりはるかに少なくなり、最も少ない場合は１つだけである。従って、発信局およびそれが存在しているネットワーク上の応答フレームによる負荷は、他のネットワークを中継装置で接続していないときより少し増加するにとどまる。その結果、マルチキャストフレームを発信することが多いセンタ局の負荷と、それが存在するネットワークの負荷とを低減させることができ、ネットワーク全体の安定運用に寄与する。複数のネットワークのそれぞれにマルチキャストフレームを発信するセンタ局がある場合にはさらに効果が大である。

【図面の簡単な説明】

【図１】　原理構成図

【図２】　実施例の構成図

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【図３】　実施例のマルチキャスト通信のフレームフォーマット

【図４】　マルチキャスト応答フレーム集中状況の説明図

【図５】　マルチキャスト通信のフレームフォーマットの例

【符号の説明】

11～1n　送受信制御部

2　中継処理部

3　マルチキャストフレーム検出手段

4　フレーム蓄積手段

411～42m　フレーム蓄積領域（フレーム蓄積バッファ）

421～42m　タイマ

5　フレーム送出手段

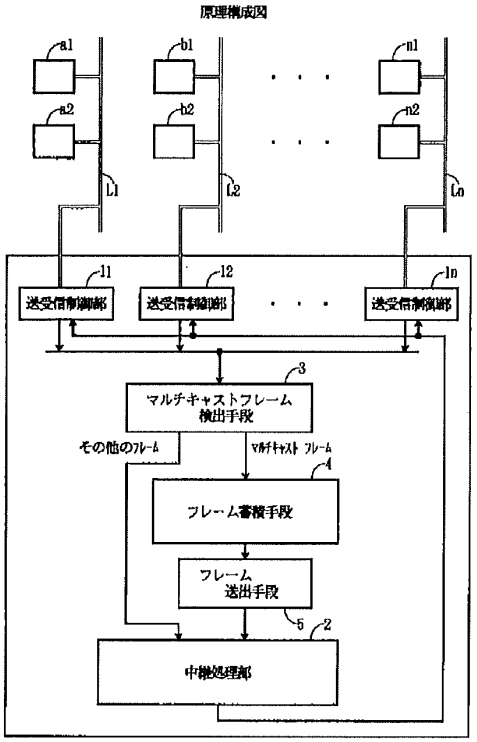
L1～Ln　ネットワーク（ＬＡＮ）

a1, a2, b1, b2, ・・・, n1, n2　局

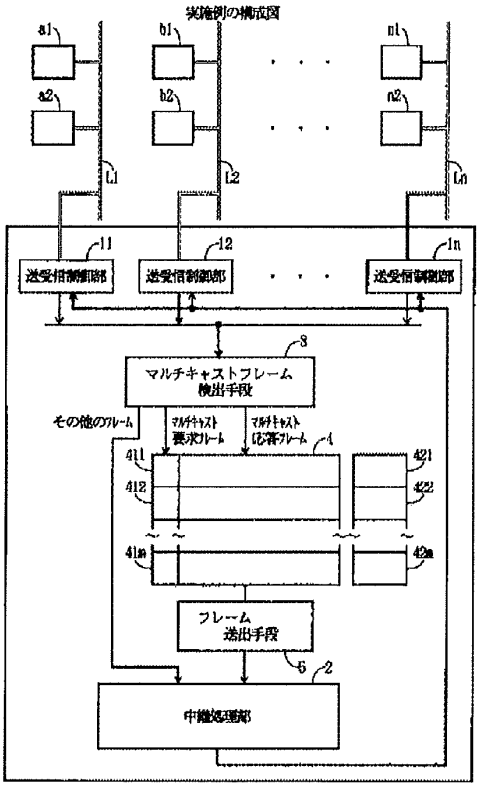
A　受信局　　R　発信局

J　中継装置

【図１】



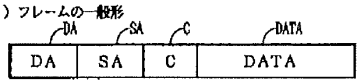
【図２】



【図３】

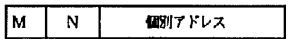
実施例のマルチキャスト通信のフレームフォーマット

（１）フレームの一般形



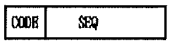
DA：宛先アドレス
SA：送信元アドレス
C：識別コード
DATA：データ

DA：宛先アドレス　，　SA：送信元アドレス



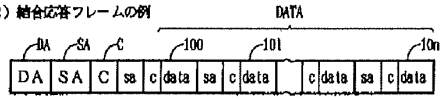
M：マルチキャスト指定
＝'00'：個別通信
＝'01'：マルチキャスト　グループ指定
＝'FF'：マルチキャスト　全局向け
N：ネットワークＩＤ、グループＩＤ等

C：識別子



CODE：
＝'00'：個別通信
＝'01'：マルチキャスト要求
＝'10'：マルチキャスト応答
＝'11'：マルチキャスト結合応答
SEQ：メッセージのシーケンス番号

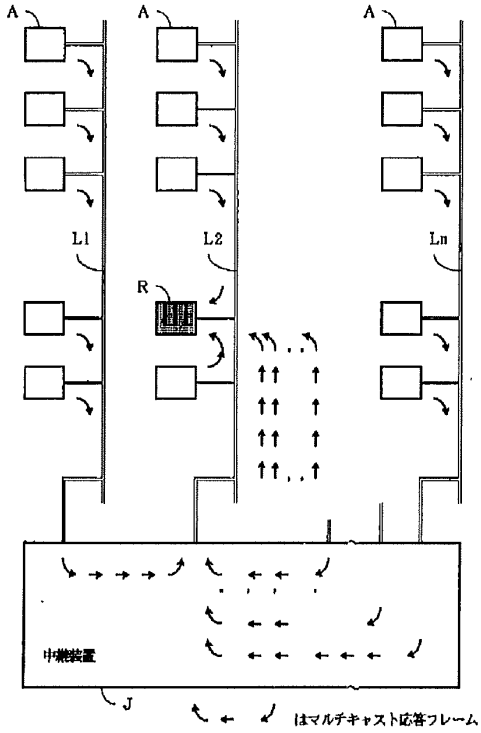
（２）結合応答フレームの例



DA：宛先アドレス
SA：送信元アドレス（中継装置アドレス）
C：識別コード（＝'11'：マルチキャスト結合応答）
sa：送信元アドレス
c：識別コード
data：データ

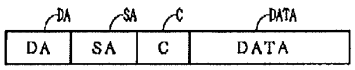
【図４】

マルチキャスト応答フレーム集中状況の説明図



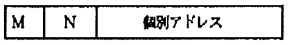
【図５】

マルチキャスト通信のフレームフォーマットの例



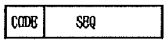
DA：宛先アドレス
SA：送信元アドレス
C：識別子
DATA：データ

DA：宛先アドレス



M：マルチキャスト指定
＝'00'：個別通信
＝'01'：マルチキャスト　グループ指定
＝'FF'：マルチキャスト　全局向け
N：ネットワークＩＤ、グループＩＤ等

C：識別子



CODE：
＝'00'：個別通信
＝'01'：マルチキャスト要求
＝'10'：マルチキャスト応答
SEQ：メッセージのシーケンス番号

フロントページの続き

(51)Int.Cl.⁶	識別記号	庁内整理番号	Ｆ Ｉ	技術表示箇所
Ｈ０４Ｌ　12/28				
12/66				
		9466－5K	Ｈ０４Ｌ　11/20	Ｂ

Electronic Acknowledgement Receipt	
EFS ID:	8519057
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	26137
Filer:	Charles F. Wieland III/Christine Becker
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	18330.0004
Receipt Date:	28-SEP-2010
Filing Date:	14-JUN-2010
Time Stamp:	18:58:10
Application Type:	Reexam (Patent Owner)

Payment information:

Submitted with Payment	no

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

National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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SECOND

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

Sheet 1 of 9

U.S. PATENT DOCUMENTS

Exmr. Initials	Ref. No.	Document Number-Kind Code	Publication/Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear
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Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 9

Complete if Known

In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

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Exmr. Initials	Ref. No.	Foreign Patent Document: Country Code[1], Number, Kind Code	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant of Cited Document	STATUS: Translation	Partial Translation	Eng. Lang. Summary	Search Report	IPER	Abstract	Cited in Spec. / Pg. No(s).	
		EP 0 637 149	02-1995	DIGITAL EQUIPMENT CORP.								
		WO 93/15572	08-1993	NELLCOR INC.								
		WO 95/10911	04-1995	INTEL CORP.								
		WO 95/10908	04-1995	INTEL CORP.								

[1]Enter Office that issued the document, by the two-letter code.

NON-PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Exmr. Initials	Ref. No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		AHUJA, S.R., et al., "The Rapport Multimedia Conferencing System," Conference on Office Information Systems 1988, pp. 1-7.
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Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 9

Complete if Known

In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

NON-PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

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Sheet 4 of 9

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In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

NON-PATENT LITERATURE DOCUMENTS

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Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
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Attorney Docket No.	0078494-000002

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Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Electronic Acknowledgement Receipt

EFS ID:	8519122
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	26137
Filer:	Charles F. Wieland III/Christine Becker
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	18330.0004
Receipt Date:	28-SEP-2010
Filing Date:	14-JUN-2010
Time Stamp:	19:05:34
Application Type:	Reexam (Patent Owner)

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	Transmittal Letter	002_2ndIDS.pdf	47637 b30045bb9053ebc2b925a93eec422ca0497d0bad	no	1

Warnings:	
Information:	

2	Reexam Certificate of Service	002_2ndIDSCertofServ.pdf	17973 3e3131ea671ba4ac1852339a727e786a8bdb4c6c	no	1
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Filed (SB/08)	002_2ndPTO1449.pdf	990028 20851f2301b33332dadaf5a7c84ab1eb79cdecfb	no	9
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
		Total Files Size (in bytes):	1055638		

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

In re Reexamination of	)	**MAIL STOP REEXAMINATION**
U.S. Patent No. 6,226,686	)	Group Art Unit: 3992
Jeffrey J. Rothschild et al.	)	Examiner:
Issued: September 28, 1999	)	Confirmation No.: 1071
Reexamination Control No.: 90/011,036	)	Information Disclosure Statement Under 37 C.F.R. § § 1.97, 1.98 and 1.555
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	)	

SECOND INFORMATION DISCLOSURE STATEMENT

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

Sir:

The documents cited on the attached form, PTO-1449, are being called to the attention of the Examiner. These documents were made of record in at least one of U.S. Patent Nos. 5,822,523 and 6,226,686. No copies of the documents are being submitted herewith as they were already submitted in at least one of U.S. Patent Nos. 5,822,523 and 6,226,686. It is respectfully requested that the cited documents be expressly considered during the prosecution of this reexamination proceeding, and the documents be made of record therein and appear among the "references cited" on any reexamination certificate to issue therefrom.

Applicant believes that no fee is required for submission of this statement. However, if a fee is required, the Commissioner is authorized to deduce such fee from the undersigned's Deposit Account No. 02-4800. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: September 28, 2010

By: _____
Charles F. Wieland III
Registration No. 33096

Customer No. 21839
703 836 6620

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

CERTIFICATE OF SERVICE

It is hereby certified by the undersigned that a true copy of the foregoing Second Information Disclosure Statement and PTO-1449 Form(s) were transmitted via U.S. mail to:

NOVAK DRUCE + QUIGG, LLP
1000 Louisiana Street
53rd Floor
Houston, Texas 77002

on this 28th day of September, 2010.

Charles F. Wieland III
Registration No. 33096

9-29-2010

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Ex Parte* Reexamination of U.S. Patent of Jeffrey J. Rothschild et al.	**MAIL STOP *EX PARTE* REEXAM**
U.S. Patent No.: 6,226,686	Art Unit: 3992
Filed: June 14, 2010	Examiner: Andrew L. Nalven
Control No.: 90/011,036	Confirmation No.: 1071
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

APPOINTMENT OF POWER OF ATTORNEY BY ASSIGNEE OF ENTIRE INTEREST AND CHANGE OF CORRESPONDENCE ADDRESS

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

Sir:

The assignee of record of the entire interest of the above-identified U.S. patent hereby appoints the following attorneys to prosecute and transact all business in the U.S. Patent and Trademark Office in connection therewith:

Robert G. Mukai, Registration No. 28,531

Charles F. Wieland III, Registration No. 33,096

Please recognize the correspondence address for the above-identified U.S. patent to the address associated with Customer Number 21839 and direct all calls to Robert G. Mukai at 703-836-6620.

ASSIGNEE STATEMENT UNDER 37 C.F.R. § 3.73(b)

PalTalk Holdings, Inc. hereby states that it is the assignee of the entire right, title and interest in U.S. Patent No. 6,226,686 by virtue of the assignment document recorded on February 11, 2002, at Reel 012598, Frame 0506.

The undersigned, whose title is supplied below, is empowered to sign this statement on behalf of the assignee.

PalTalk Holdings, Inc.

Date: September 1, 2010

By: _____
Jason Katz
Chief Executive Officer
500 North Broadway
Jericho, N.Y. 11753

CERTIFICATE OF SERVICE

It is hereby certified by the undersigned that a true copy of the foregoing First Information Disclosure Statement, PTO-1449 Form(s) and copies of the cited documents were sent via courier to:

NOVAK DRUCE + QUIGG, LLP
1000 Louisiana Street
53rd Floor
Houston, Texas 77002

on this 28th day of September, 2010.

Charles F. Wieland III
Registration No. 33096

Substitute for form 1449/PTO & 1449B/PTO

THIRD

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

Sheet 1 of 1

U.S. PATENT DOCUMENTS

Exmr. Initials	Ref. No.	Document Number-Kind Code	Publication/Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear

FOREIGN PATENT DOCUMENTS

Exmr. Initials	Ref. No.	Foreign Patent Document: Country Code[1], Number, Kind Code	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant of Cited Document	STATUS: Translation	Partial Translation	Eng. Lang. Summary	Search Report	IPER	Abstract	Cited in Spec. / Pg. No(s).

[1]Enter Office that issued the document, by the two-letter code.

NON-PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Exmr. Initials	Ref. No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		BENNETT, J. et al., "Munin: Distributed Shared Memory Based on Type-Specific Memory Coherence", Proceedings of 2nd ACM SIGPLAN Symposium on PPoPP, 1990, pp. 168-176
		CARTER, J. et al., "Implementation and Performance of Munin", Proceedings of 13th Symposium on Operating System Principles", 1991, pp. 152-164
		COLEMAN, S. et al., "The TCP/IP Internet DOOM FAQ", http://www.gamers.org/dhs/helpdocs/inetdoom.html, August, 1998, pp. 1-10
		COTTON, J. et al., "The TCP/IP Internet Gamer's FAQ", http://x8.dejanews.com/getdoc.xp?AN-1031, July, 1998, pp. 1-9
		COULOURIS, G. et al., "Distributed Systems: Concepts and Design", Addison-Wesley Publishing Co., 1994, pp. 333-348
		FUNKHOUSER, T., "RING: A Client-Server System for Multi-User Virtual Environments", pp. 1-9
		JAMES, R. et al., "Creating Your Own Multiplayer Game Systems", Dr. Dobb's Information Highway Sourcebook, Winter, 1994, pp. 56-64
		MACEDONIA, M. et al., "MBone Provides Audio and Video Across the Internet", IEEE Computer, Vol. 27, Issue 4, 30-36, April, 1994, pp. 1-12
		MACEDONIA, M. et al., "NPSNET: A Network Software Architecture for Large Scale Virtual Environments", Presence, Vol. 3, No. 4, Fall, 1994, pp. 1-30
		SCHULZRINNE, H. et al., "A Transport Protocol for Real-Time Applications", IETF Internet Draft draft-ietf-avt-rtp-05.txt, 1994, pp. 1-16
		WOLFE, D., "The BBS Construction Kit", 1st Ed., 1994, John Wiley & Sons, Inc., New York, pp. 1-37

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Electronic Acknowledgement Receipt

EFS ID:	8608415
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	26137
Filer:	Charles F. Wieland III/Christine Becker
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	18330.0004
Receipt Date:	12-OCT-2010
Filing Date:	14-JUN-2010
Time Stamp:	15:49:13
Application Type:	Reexam (Patent Owner)

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	Transmittal Letter	3rdIDS.pdf	56229 019fc7013b2ee50dd09187544315e8e19c1691de	no	2

Warnings:	
Information:	

2	Information Disclosure Statement (IDS) Filed (SB/08)	3rdPTO1449.pdf	88625 b6c72c79d959b02e928b066deac8cd74ec12dcaa	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	NPL Documents	BENNETT.pdf	991409 dcd35bfc90ecae9442ff58eef97b3f0b1684e64a	no	9
Warnings:					
Information:					
4	NPL Documents	CARTER.pdf	1807324 0ea6877589b2a885e83b32d30f57ea2c415d3ebb	no	13
Warnings:					
Information:					
5	NPL Documents	COLEMAN.pdf	673216 c72c931fbd6b6ad55eda08bf634f3f39ae1e47e4	no	10
Warnings:					
Information:					
6	NPL Documents	COTTON.pdf	597753 d803e7221162bf4bbd4465f0001083f76b29d92f	no	9
Warnings:					
Information:					
7	NPL Documents	COULOURIS.pdf	2212513 bc544521129610497a5e6bc984aeb1104f7c45f5	no	16
Warnings:					
Information:					
8	NPL Documents	FUNKHOUSER.pdf	1500492 e71b52be7f3950415bf916904380fd8002a6a584	no	9
Warnings:					
Information:					
9	NPL Documents	JAMES.pdf	1106551 80a16d3f75629a6269ff4f06cc750a76f950047c	no	9
Warnings:					
Information:					
10	NPL Documents	MACEDONIA_MBone.pdf	1283217 6d0ff053455c5f05aa48f0c7d5cc5631a27856a3	no	12

Warnings:					
Information:					
11	NPL Documents	MACEDONIA_NPSNET.pdf	1860112 32b81b550c350ed995d85b3d43b50cf968fd5db1	no	30
Warnings:					
Information:					
12	NPL Documents	SCHULZRINNE.pdf	715502 85f0dd884ad3f61c022535546c68f9a8984cbd0b	no	16
Warnings:					
Information:					
13	NPL Documents	WOLFE.pdf	2772828 bf9415bb72e533a0543b096868ad4832b1e7bacd	no	37
Warnings:					
Information:					
		Total Files Size (in bytes):	15665771		

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

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

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

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	**MAIL STOP REEXAMINATION**
U.S. Patent No. 6,226,686	Group Art Unit: 3992
Jeffrey J. Rothschild et al.	Examiner:
Issued: September 28, 1999	Confirmation No.: 1071
Reexamination Control No.: 90/011,036	Information Disclosure Statement Under 37 C.F.R. § § 1.97, 1.98 and 1.555
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

THIRD INFORMATION DISCLOSURE STATEMENT

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

Sir:

The documents cited on the attached form, PTO-1449, are being called to the attention of the Examiner. These documents were made of record as listed Prior Art in *Paltalk Holdings, Inc. v. Microsoft Corp.*, Civil Action No. 2:06-CV-367 (DF), Microsoft Corp.'s Final Invalidity Contentions, filed on September 10, 2008. The other documents cited in this court filing have already been brought to the Examiner's attention.

Applicant believes that no fee is required for submission of this statement. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: October 12, 2010

By: _____
Charles F. Wieland III
Registration No. 33096

Customer No. 21839
703 836 6620

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

CERTIFICATE OF SERVICE

It is hereby certified by the undersigned that a true copy of the foregoing Third Information Disclosure Statement and PTO-1449 Form(s) were transmitted via U.S. mail to:

NOVAK DRUCE + QUIGG, LLP
1000 Louisiana Street
53rd Floor
Houston, Texas 77002

on this 12th day of October, 2010.

Charles F. Wieland III
Registration No. 33096

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/011,036	06/14/2010	6226686	18330.0004	1071

26137 7590 02/10/2011

PATENT DEPARTMENT
SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP
FOUR TIMES SQUARE
NEW YORK, NY 10036

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 02/10/2011

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

NOVAK DRUCE & QUIGG, LLP

(NDQ REEXAMINATION GROUP)

1000 LOUISIANA STREET

FIFTY-THIRD FLOOR

HOUSTON, TX 77002

MAILED

FEB 10 2011

CENTRAL REEXAMINATION UNIT

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/011,036*.

PATENT NO. *6226686*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

PTOL-465 (Rev.07-04)

Office Action in Ex Parte Reexamination	Control No. 90/011,036	Patent Under Reexamination 6226686	
	Examiner ANDREW L. NALVEN	Art Unit 3992	

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

a☒ Responsive to the communication(s) filed on *14 June 2010* . b☐ This action is made FINAL.
c☒ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☒ Information Disclosure Statement, PTO/SB/08.
3. ☐ Interview Summary, PTO-474.
4. ☐ _____.

Part II SUMMARY OF ACTION

1a. ☒ Claims *1-19* are subject to reexamination.
1b. ☐ Claims _____ are not subject to reexamination.
2. ☐ Claims _____ have been canceled in the present reexamination proceeding.
3. ☒ Claims *16* are patentable and/or confirmed.
4. ☒ Claims *1-15 and 17-19* are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ The drawings, filed on _____ are acceptable.
7. ☐ The proposed drawing correction, filed on _____ has been (7a)☐ approved (7b)☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some* c)☐ None of the certified copies have
   1☐ been received.
   2☐ not been received.
   3☐ been filed in Application No. _____ .
   4☐ been filed in reexamination Control No. _____ .
   5☐ been received by the International Bureau in PCT application No. _____ .
   * See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate 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.
10. ☐ Other: _____

cc: Requester (if third party requester)

DETAILED ACTION

I. Procedures Governing Reexamination

Proposed Amendments, Affidavits, or Declarations

In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116, after final rejection and 37 CFR 41.33 after appeal, which will be strictly enforced.

Patent owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 CFR 1.530(d)-(j), must be formally presented pursuant to 37 CFR 1.52(a) and (b), and must contain any fees required by 37 CFR 1.20(c).

Extensions of Time

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

Concurrent Litigation

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the patent at issue in this reexamination proceeding throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

II. Summary of the Reexamination Proceeding

On June 14, 2010, reexamination was requested as to claims 1-19 of US Patent No. 6,226,686 ("the '686 Patent").

On July 29, 2010, reexamination was ordered for all requested claims.

III. Grounds of Rejection

While the examiner has made the grounds for rejection appearing below against the claims, the remaining prior art that raised an SNQ is deemed to be cumulative of the prior art used in the grounds for rejection of claims 1-4, 7-15, 17, 18, and 19.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(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.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 7-10, 12-15, 18, and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Netrek as detailed below. Further, the proposed rejection of claims 1-4, 7-10, 12-15, 18, and 19 set forth in the June 14, 2010 request for reexamination on pages 30-62 is incorporated by reference.

With regards to claim 1, Netrek teaches a method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of:

(1) receiving a create message from one of the plurality of host computers, wherein said create message specifies a message group to be created (*NetTrek at Server\ntserv\getentry.c at lines 28-248 – player specifies which team they would like to create or join*);

(2) receiving join messages from a first subset of the plurality of host computers, wherein each of said join messages specifies said message group (*NetTrek at Server\ntserv\getentry.c at lines 28-248 – player specifies which team they would like to create or join)*;

(3) receiving host messages from a second subset of said first subset of the plurality of host computers belonging to said message group, wherein each of said messages contains a payload portion and a portion that is used to identify said message group (*NetTrek at Server\ntserv\input.c at line 195 and Server\ntserv\socket.c at lines 1825-2044 – host computer players send messages to the server such as a text message addressed to the team that includes a payload text message and an identification of the team; see also Server\netserv\packets.h)*;

(4) aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload (*NetTrek at Server\ntserv\input.c at lines 152-302 - read client messages and place into buffer, read from client often, send to client not so often; NetTrek at Server\ntserv\data.c - update clients every 200,000 microseconds*);

(5) forming an aggregated message using said aggregated payload (*NetTrek at Server\ntserv\input.c at lines 52, 154-168, 197, 603-690, 1390-1590, 1825-2044 – updateClient makes calls to updateMessages and updateTorpedos that aggregates received messages that are stored in the server's shared memory and sends to clients)*;

and (6) transmitting said aggregated message to said first subset of the plurality of host computers belonging to said message group (*NetTrek at Server\ntserv\socket.c at 688 – flushsockbuf sends all messages stored in aggregation buffer to the clients/players)*;

wherein said aggregated message keeps the shared, interactive application operating consistently on each of said first subset of the plurality of host computers (*NetTrek at Server\ntserv\socket.c at 688 – flushsockbuf sends all messages stored in aggregation buffer to the clients/players).*

With regards to claim 2, Netrek teaches the network is at least a portion of the Internet (*Netrek at Server\ntserv\newstartd.c at lines 179-311 – TCP/IP socket used for connections*).

With regards to claim 3, Netrek teaches a method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of:

(1) receiving a create message from one of the plurality of host computers, wherein said create message specifies a message group to be created (*NetTrek at Server\ntserv\getentry.c at lines 28-248 – player specifies which team they would like to create or join)*;

(2) receiving join messages from a first subset of the plurality of host computers, wherein each of said join messages specifies said message group (*NetTrek at Server\ntserv\getentry.c at lines 28-248 – player specifies which team they would like to create or join)*;

(3) receiving host messages from a second subset of said first subset of the plurality of host computers belonging to said message group, wherein each of said messages contains a payload portion and a portion that is used to identify said message group (*NetTrek at Server\ntserv\input.c at line 195 and Server\ntserv\socket.c at lines 1825-2044 – host computer*

players send messages to the server such as a text message addressed to the team that includes a payload text message and an identification of the team; see also Server\netserv\packets.h);

(4) aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated message (*NetTrek at Server\ntserv\input.c at lines 152-302 - read client messages and place into buffer, read from client often, send to client not so often; NetTrek at Server\ntserv\data.c - update clients every 200,000 microseconds)*;

(5) transmitting said aggregated message to said first subset of the plurality of host computers belonging to said message group (*NetTrek at Server\ntserv\socket.c at 688 – flushsockbuf sends all messages stored in aggregation buffer to the clients/players)*;

wherein said aggregated message keeps the shared, interactive application operating consistently on each of said first subset of the plurality of host computers (*NetTrek at Server\ntserv\socket.c at 688 – flushsockbuf sends all messages stored in aggregation buffer to the clients/players).*

With regards to claim 4, Netrek teaches the network is at least a portion of the Internet. (*Netrek at Server\ntserv\newstartd.c at lines 179-311 – TCP/IP socket used for connections).*

With regards to claim 7, Netrek teaches a method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of:

(1) receiving messages from a subset of the plurality of host computers belonging to a message group, wherein each of said messages contains a payload portion and a portion that is used to identify said message group (*NetTrek at Server\ntserv\input.c at line 195 and Server\ntserv\socket.c at lines 1825-2044 – host computer players send messages to the server such as a text message addressed to the team that includes a payload text message and an identification of the team; see also Server\netserv\packets.h)*;

(2) aggregating said payload portions of said messages to create an aggregated payload (*NetTrek at Server\ntserv\input.c at lines 52, 154-168, 197, 603-690, 1390-1590, 1825-2044 – updateClient makes calls to updateMessages and updateTorpedos that aggregates received messages that are stored in the server's shared memory and sends to clients)*; and

(3) transmitting said aggregated message to each of the plurality of host computers belonging to said message group (*NetTrek at Server\ntserv\socket.c at 688 – flushsockbuf sends all messages stored in aggregation buffer to the clients/players)*;

wherein said aggregated message keeps the shared, interactive application operating consistently on each of the plurality of host computers belonging to said message group (*NetTrek at Server\ntserv\socket.c at 688 – flushsockbuf sends all messages stored in aggregation buffer to the clients/players).*

With regards to claim 8, Netrek teaches the network is at least a portion of the Internet (*Netrek at Server\ntserv\newstartd.c at lines 179-311 – TCP/IP socket used for connections).*

With regards to claim 9, Netrek teaches step (3) is performed after pausing for a pre-determined time interval (*NetTrek at Server\ntserv\input.c at lines 152-302 - read client messages and place into buffer, read from client often, send to client not so often; NetTrek at Server\ntserv\data.c - update clients every 200,000 microseconds).*

With regards to claim 10, Netrek teaches said pre-determined time interval is equivalent to the amount of time for the group messaging server to receive at least one message from each of the plurality host computers belonging to said first message group (*NetTrek at Server\ntserv\input.c at 195 and socket.c at 1825-2044 – waits 200,000 microseconds for at least one message to aggregate before sending).*

With regards to claim 12, Netrek teaches a method for providing group messages to a plurality of host computers connected to a group messaging server over a unicast wide area communication network, comprising the steps of:

(1) communicating with the plurality of host computers using the unicast network and maintaining a list of message groups, each message group containing at least one host computer (*NetTrek at Server\ntserv\getentry.c at lines 28-248 – player specifies which team they would like to create or join and server maintains list of players in each team)*;

(2) receiving messages from a subset of the plurality of host computers, each host computer in said subset belonging to a first message group, wherein each of said messages contains a payload portion and a portion that is used to identify said first message group (*NetTrek at Server\ntserv\input.c at line 195 and Server\ntserv\socket.c at lines 1825-2044 – host*

computer players send messages to the server such as a text message addressed to the team that includes a payload text message and an identification of the team; see also Server\netserv\packets.h);

(3) aggregating said payload portions of said messages received from said subset of the plurality of host computers to create an aggregated payload (*NetTrek at Server\ntserv\input.c at lines 152-302 - read client messages and place into buffer, read from client often, send to client not so often; NetTrek at Server\ntserv\data.c - update clients every 200,000 microseconds)*;

(4) forming an aggregated message using said aggregated payload (*NetTrek at Server\ntserv\input.c at lines 52, 154-168, 197, 603-690, 1390-1590, 1825-2044 – updateClient makes calls to updateMessages and updateTorpedos that aggregates received messages that are stored in the server's shared memory and sends to clients)*;

and (5) transmitting said aggregated message to a recipient host computer belonging to said first message group (*NetTrek at Server\ntserv\socket.c at 688 – flushsockbuf sends all messages stored in aggregation buffer to the clients/players)*.

With regards to claim 13, Netrek teaches the unicast wide area communication network is at least a portion of the Internet *(Netrek at Server\ntserv\newstartd.c at lines 179-311 – TCP/IP socket used for connections)*.

With regards to claim 14, Netrek teaches the unicast wide area communication network is at least a portion of the Internet, and said group messaging server communicates with said

plurality of host computers using a session layer protocol (*Netrek at Server\ntserv\newstartd.c at lines 179-311 – TCP/IP socket used for connections).*

With regards to claim 15, Netrek teaches step (3) is performed after pausing for a pre-determined time interval (*NetTrek at Server\ntserv\input.c at lines 152-302 - read client messages and place into buffer, read from client often, send to client not so often; NetTrek at Server\ntserv\data.c - update clients every 200,000 microseconds).*

With regards to claim 18, Netrek teaches a method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of:

(1) receiving a host message from one of the plurality of host computers belonging to a message group, wherein said host message contains a payload portion and a portion that is used to identify said message group (*NetTrek at Server\ntserv\input.c at line 195 and Server\ntserv\socket.c at lines 1825-2044 – host computer players send messages to the server such as a text message addressed to the team that includes a payload text message and an identification of the team; see also Server\netserv\packets.h)*;

(2) forming a server message by using said payload portion of said host message (*NetTrek at Server\ntserv\input.c at lines 52, 154-168, 197, 603-690, 1390-1590, 1825-2044 – updateClient makes calls to updateMessages and updateTorpedos that aggregates received messages that are stored in the server's shared memory and sends to clients)*;

and aggregating said payload portion with the payload portion of a second host message received from another of the plurality of host computers belonging to said message group *(NetTrek at Server\ntserv\input.c at lines 152-302 - read client messages and place into buffer, read from client often, send to client not so often; NetTrek at Server\ntserv\data.c - update clients every 200,000 microseconds)*

(3) transmitting said server message to each of the plurality of host computers belonging to said message group *(NetTrek at Server\ntserv\socket.c at 688 – flushsockbuf sends all messages stored in aggregation buffer to the clients/players)*;

whereby said server message keeps the shared, interactive application operating consistently on each of the plurality of host computers belonging to said message group *(NetTrek at Server\ntserv\socket.c at 688 – flushsockbuf sends all messages stored in aggregation buffer to the clients/players)*.

With regards to claim 19, Netrek teaches the network is at least a portion of the Internet *(Netrek at Server\ntserv\newstartd.c at lines 179-311 – TCP/IP socket used for connections)*.

Claims 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Netrek in view of Van Hook.

With regards to claim 11, Netrek fails to teach said pre-determined time interval is a function of the rate that said messages are received from said subset of the plurality of host computers belonging to said first message group. However, Van Hook teaches said pre-determined time interval is a function of the rate that said messages are received from said subset

of the plurality of host computers belonging to said first message group (*Van Hook, Pages 2 and 7 – predetermined time limit is reach and transmission of aggregated packets is commenced when either the maximum size of the bundle has been reached, ie - the amount of received packets creates a maximum bundle size, or when the maximum time has passed without receiving another PDU, ie – the rate of receiving PDU's drops to zero for a predetermined amount of time*).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize Van Hook's method of determining the pre-determined amount of time to wait till transmission of a bundled packet because it offers the advantage of reducing packet rates and thus the reduction of the transmission bit rate and the reduction of unnecessary network traffic (*Van Hook, Page 2; Page 1).*

With regards to claim 17, Netrek fails to teach said pre-determined time interval is a function of the rate that said messages are received from said subset of the plurality of host computers belonging to said first message group. However, Van Hook teaches said pre-determined time interval is a function of the rate that said messages are received from said subset of the plurality of host computers belonging to said first message group (*Van Hook, Pages 2 and 7 – predetermined time limit is reach and transmission of aggregated packets is commenced when either the maximum size of the bundle has been reached, ie - the amount of received packets creates a maximum bundle size, or when the maximum time has passed without receiving another PDU, ie – the rate of receiving PDU's drops to zero for a predetermined amount of time*).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize Van Hook's method of determining the pre-determined amount of time to wait till transmission of a bundled packet because it offers the advantage of reducing packet rates and thus the reduction of the transmission bit rate and the reduction of unnecessary network traffic (*Van Hook, Page 2; Page 1).*

Claims 5-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki as detailed below. Further, the proposed rejection of claims 5 and 6 set forth in the June 14, 2010 request for reexamination on pages 74-76 is incorporated by reference.

With regards to claim 5, Suzuki teaches a method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of: (*Suzuki, column 1 lines 57-67 – plurality of user terminals share a virtual space; column 1 lines 6-13; column 4 line 64 – column 5 line 8, column 4 lines 38-64)*

(1) receiving a host message from one of the plurality of host computers belonging to a message group, wherein said host message contains a payload portion and a portion that is used to identify said message group (*Suzuki, column 2 lines 14-20; column 1 line 64 – column 2 line 13 – each user terminal generates signals which specify the position and direction of the avatar to other terminals and receives position information from other terminals; column 6 lines 6-21 and lines 40-52 – coordinate value COV and direction of eyes ED are used to determine whether avatars are in conversation)*;

(2) forming a server message using said payload portion of said host message (*Suzuki, column 4 line 64 – column 5 line 8, server processes the received position messages of all terminals and sends the processed position information to terminals)*;

(3) transmitting said server message to each of the plurality of host computers belonging to said message group (*Suzuki, column 4 line 64 – column 5 line 8, server processes the received position messages of all terminals and sends the processed position information to terminals; column 5 line 67 – column 6 line 21, column 12 lines 5-12)*; and

(4) suppressing said server message such that said one of the plurality of host computers which originated said host message does not receive said server message (*Suzuki, column 5 lines 52-60, column 6 lines 22-25 - information is transmitted to all terminals except the transmitting terminal)*;

wherein said server message keeps the shared, interactive application operating consistently on each of the plurality of host computers belonging to said message group (*Suzuki, column 1 lines 6-13; column 1 lines 57-67 – plurality of user terminals share a virtual space).*

With regards to claim 6, Suzuki teaches the network is at least a portion of the Internet (*Suzuki, column 5 lines 13-15, LAN, ISDN).*

STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

The following is an examiner's statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding:

Claim 16 is confirmed as patentable.

Claim 16 requires that the pre-determined time interval be equivalent to the amount of time for the group messaging server to receive at least one message from each of the plurality of host computers belonging to the first message group. None of the prior art submitted by Requester teaches this feature. The closest submitted art, Van Hook, teaches that the pre-determined time interval is decided by when the maximum bundle size (ie – the bundle of payloads received from the host computers reaches a maximum) is reached or when a predetermined amount of time passes without reception of an additional message from one of the host computers. However, neither Van Hook nor any of the other submitted references teach that a pre-determined time interval is equivalent to the amount of time for the group messaging server to receive at least one message from each of the plurality of host computers belonging to the first message group.

Any comments considered necessary by PATENT OWNER regarding the above statement must be submitted promptly to avoid processing delays. Such submission by the patent owner should be labeled: "Comments on Statement of Reasons for Patentability and/or Confirmation" and will be placed in the reexamination file.

CORRESPONDENCE

All correspondence relating to this ex parte reexamination proceeding should be directed:

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Any inquiry concerning this communication or earlier communications from the Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Andrew Nalven/

Andrew Nalven
CRU Examiner
GAU 3992
(571) 272-3839

Conferee: ___MDN_____

Conferee: _____
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

Sheet 1 of 6

U.S. PATENT DOCUMENTS

Exmr. Initials	Ref. No.	Document Number-Kind Code	Publication/Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear
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	2	4,558,180	12-10-1985	SCORDO	
	3	5,079,767	01-07-1992	PERLMAN	
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Examiner Signature	/Andrew Nalven/	Date Considered	02/08/2011

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FOREIGN PATENT DOCUMENTS

Exmr. Initials	Ref. No.	Foreign Patent Document: Country Code[1], Number, Kind Code	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant of Cited Document	STATUS: Translation	Partial Translation	Eng. Lang. Summary	Search Report	IPER	Abstract	Cited in Spec. / Pg. No(s).	
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	24	EP 0687088 A2	12-13-1995	MOTOROLA, INC.						X		
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	98	JP 2-192344	07-30-1990	FUJITSU LTD.		X				X		
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[1]Enter Office that issued the document, by the two-letter code.

NON-PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

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Examiner Signature	/Andrew Nalven/	Date Considered	02/08/2011

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 5 of 9

Complete if Known

In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

NON-PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

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Examiner Signature	/Andrew Nalven/	Date Considered	02/08/2011

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SECOND

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 6 of 9

Complete if Known

In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

NON-PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

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Examiner Signature	/Andrew Nalven/	Date Considered	02/08/2011

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SECOND

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Sheet 7 of 9

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In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

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Examiner Signature	/Andrew Nalven/	Date Considered	02/08/2011

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SECOND

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Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

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Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90/011,036	6226686
	Certificate Date	Certificate Number

Requester Correspondence Address: ☐ **Patent Owner** ☒ **Third Party**

NOVAK DRUCE & QUIGG, LLP
(NDQ REEXAMINATION GROUP)
1000 LOUISIANA STREET
FIFTY-THIRD FLOOR
HOUSTON, TX 77002

LITIGATION REVIEW ☒	**aln** (examiner initials)	**7/28/10** (date)
Case Name		Director Initials
Status (OPEN) 2:09cv274 Paltalk Holdings, Inc v. Sony Computer Entertainment America, Inc		Lee Heard 8 RY
Status (CLOSED) 2:06cv367 Paltalk Holdings, Inc v. Microsoft Corporation		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	**NUMBER**
1. none	
2.	
3.	
4.	

Patent
Attorney Docket No. 0078494-000002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of U.S. Patent No. 6,226,686 Jeffrey J. Rothschild et al. Issued: September 28, 1999 Reexamination Control No.: 90/011,036 For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	**MAIL STOP *EX PARTE* REEXAMINATION** Group Art Unit: 3992 Examiner: Confirmation No.: 1071

RESUBMISSION OF APPOINTMENT OF POWER OF ATTORNEY BY ASSIGNEE OF ENTIRE INTEREST AND CHANGE OF CORRESPONDENCE ADDRESS

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

Sir:

Patent Owner hereby resubmits the Appointment of Power of Attorney by Assignee of Entire Interest and Change of Correspondence Address previously filed on September 28, 2011, and the concurrently filed Certificate of Service. A review of the records on PAIR confirm receipt on September 28, 2011, but did not result in a change in the attorney of record.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: March 21, 2011 By: _____
Charles F. Wieland III
Registration No. 33096

Customer No. 21839
703 836 6620

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

Patent
Attorney Docket No. 0078494-000002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of U.S. Patent No. 6,226,686 Jeffrey J. Rothschild et al. Issued: September 28, 1999 Reexamination Control No.: 90/011,036 For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	**MAIL STOP *EX PARTE* REEXAMINATION** Group Art Unit: 3992 Examiner: Confirmation No.: 1071

CERTIFICATE OF SERVICE

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

Sir:

It is hereby certified by the undersigned that a true copy of the currently filed Resubmission of Appointment of Power of Attorney by Assignee of Entire Interest and Change of Correspondence Address and its attached Appointment of Power of Attorney by Assignee of Entire Interest and Change of Correspondence Address previously submitted on September 28, 2011 was transmitted via e-mail to:

NOVAK DRUCE + QUIGG, LLP
(NDQ Reexamination Group)
1000 Louisiana Street
53rd Floor
Houston, Texas 77002

on this 21st day of March, 2011.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: March 21, 2011 By: _____
Charles F. Wieland III
Registration No. 33096

Customer No. 21839
703 836 6620

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Ex Parte* Reexamination of U.S. Patent of Jeffrey J. Rothschild et al.	**MAIL STOP *EX PARTE* REEXAM**
U.S. Patent No.: 6,226,686	Art Unit: 3992
Filed: June 14, 2010	Examiner: Andrew L. Nalven
Control No.: 90/011,036	Confirmation No.: 1071
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

APPOINTMENT OF POWER OF ATTORNEY BY ASSIGNEE OF ENTIRE INTEREST AND CHANGE OF CORRESPONDENCE ADDRESS

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

Sir:

The assignee of record of the entire interest of the above-identified U.S. patent hereby appoints the following attorneys to prosecute and transact all business in the U.S. Patent and Trademark Office in connection therewith:

Robert G. Mukai, Registration No. 28,531

Charles F. Wieland III, Registration No. 33,096

Please recognize the correspondence address for the above-identified U.S. patent to the address associated with Customer Number 21839 and direct all calls to Robert G. Mukai at 703-836-6620.

ASSIGNEE STATEMENT UNDER 37 C.F.R. § 3.73(b)

PalTalk Holdings, Inc. hereby states that it is the assignee of the entire right, title and interest in U.S. Patent No. 6,226,686 by virtue of the assignment document recorded on February 11, 2002, at Reel 012598, Frame 0506.

The undersigned, whose title is supplied below, is empowered to sign this statement on behalf of the assignee.

PalTalk Holdings, Inc.

Date: September 1, 2010

By: _____
Jason Katz
Chief Executive Officer
500 North Broadway
Jericho, N.Y. 11753

Electronic Acknowledgement Receipt	
EFS ID:	9696998
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	21839
Filer:	Charles F. Wieland III/Christine Becker
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	18330.0004
Receipt Date:	21-MAR-2011
Filing Date:	14-JUN-2010
Time Stamp:	11:56:36
Application Type:	Reexam (Patent Owner)

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	Reexam Change in Pwr Atty for Third Party Requester	ResubmissionofAppointmentofPoAandCertofServ.pdf	119427 dd6c3a4f4d137ad73eef9b5c6826ba5ff62fa748	no	3

Warnings:

Information:

Total Files Size (in bytes):	119427

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

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

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

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
90/011,036	06/14/2010	6226686	18330.0004

CONFIRMATION NO. 1071

POWER OF ATTORNEY NOTICE

21839
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

OC000000046916941

Date Mailed: 04/04/2011

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/21/2011.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/jcmcdougald/

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
90/011,036	06/14/2010	6226686	18330.0004

CONFIRMATION NO. 1071

21839
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

POA ACCEPTANCE LETTER

OC000000046917079

Date Mailed: 04/04/2011

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/21/2011.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/jcmcdougald/

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/011,036	06/14/2010	6226686	18330.0004	1071

21839 7590 04/07/2011

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 04/07/2011

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

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patents and Trademark Office
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THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS

Tracy W. Druce
NOVAK DRUCE & QUIGG, LLP
1000 Louisiana Street, 53rd Floor
Houston, TX 77002

Date: 4-7-11

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. : 90011036
PATENT NO. : 6226686
ART UNIT : 3992

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified ex parte reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the ex parte reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Ex Parte Reexamination Interview Summary	Control No.	Patent Under Reexamination	
	90/011,036	6226686	
	Examiner	Art Unit	
	ANDREW L. NALVEN	3992	

All participants (USPTO personnel, patent owner, patent owner's representative):

(1) *ANDREW L. NALVEN*

(2) *Eric Keasel*
Albert Gagliardi

(3) *Robert Mukai*
Charles Weiland III

(4) *Dr. Mayer-Patel*

Date of Interview: *05 April 2011*

Type: a)☐ Telephonic b)☐ Video Conference
c)☒ Personal (copy given to: 1)☐ patent owner 2)☐ patent owner's representative)

Exhibit shown or demonstration conducted: d)☒ Yes e)☐ No.
If Yes, brief description: *Exhibit depicting the functionality of the cited prior art and the claimed invention was shown*

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.
Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to..."

Claim(s) discussed: *1 and 5*.

Identification of prior art discussed: *Netrek and Suzuki*.

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:
Patent Owner gave a brief description of the claimed invention. Patent Owner then described the cited prior art, Netrek and Suzuki, and discussed how the claimed create message, aggregating step, and wherein clause differ from the teachings of Netrek and Suzuki. Examiner indicated that he would consider the arguments and the response prior to the next office action. A copy of Patent Owner's exhibits are attached to this interview summary. .

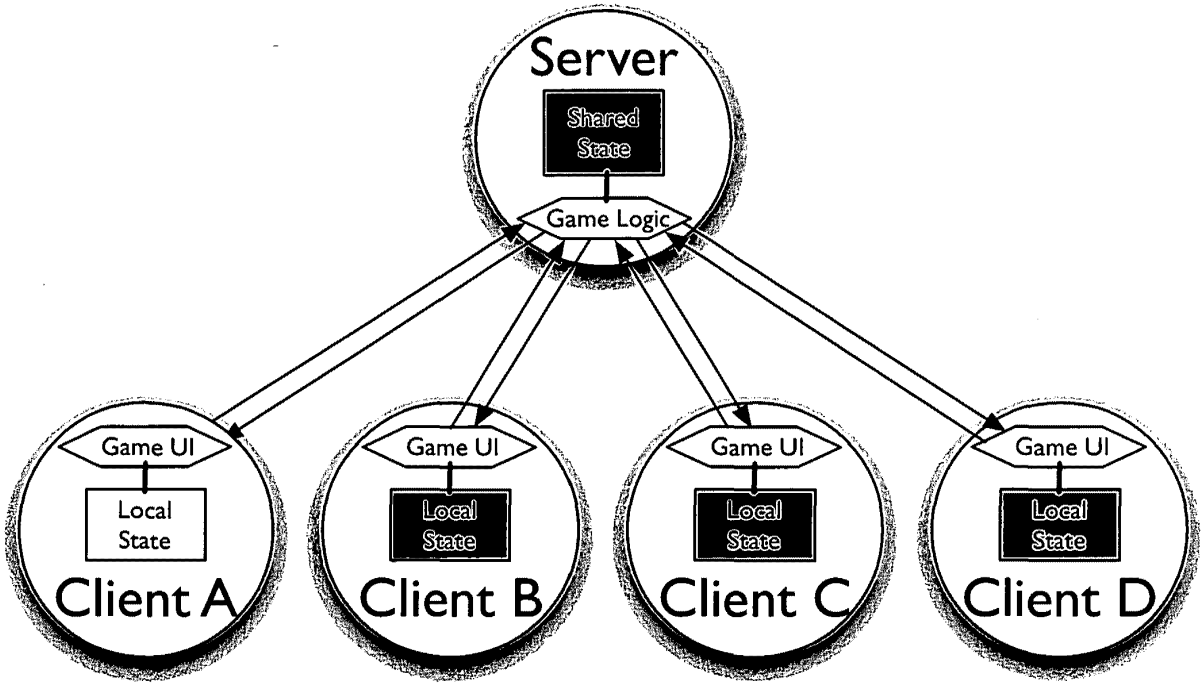
(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN **ONE MONTH** FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW (37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNER'S STATEMENT CAN NOT BE WAIVED. **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

/Andrew L Nalven/ Primary Examiner, Art Unit 3992		

cc: Requester (if third party requester)

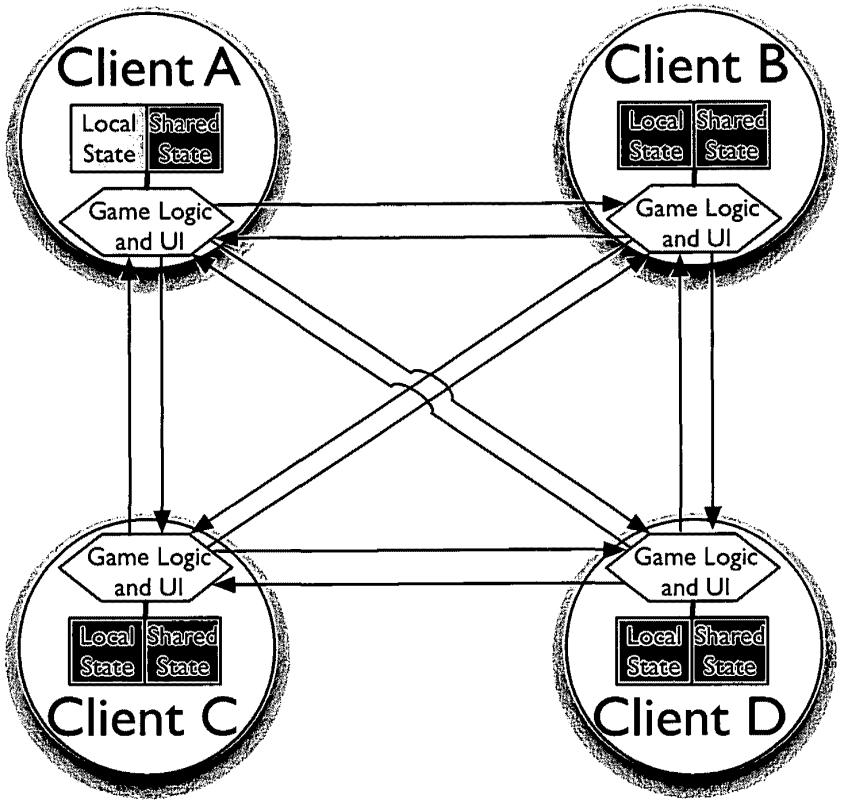
Model Architecture for a Centralized Shared Interactive Application



Key Characteristics:

- Game logic implemented on server
- One copy of shared state
- Shared state is consistent by definition

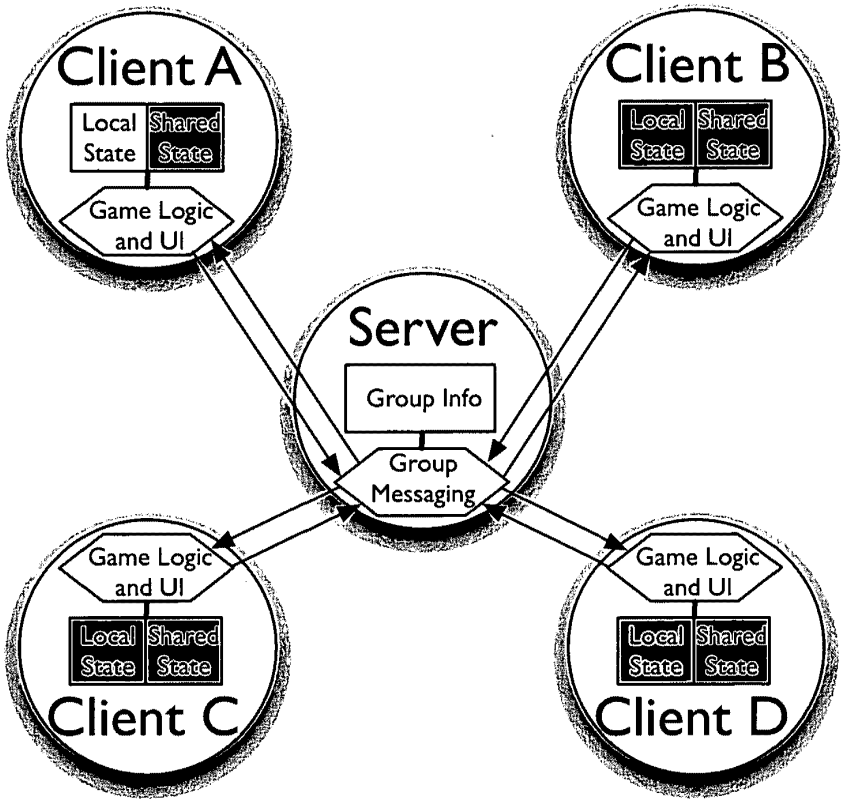
Model Architecture for a Dentralized Shared Interactive Application Without '686 Patent



Key Characteristics:

- Game logic implemented on each client
- Many copies of shared state
- Shared state must be actively kept consistent
- Clients must send/receive lots of messages to/from many others.

Model Architecture for a Dentralized Shared Interactive Application With '686 Patent



Key Characteristics:

- Server provides group messaging capabilities
- Groups creation and joining at direction of clients
- Clients send/receive only to server
- Server aggregates message payloads for delivery

Patent
Attorney Docket No. 0078494-000002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of U.S. Patent No. 6,226,686	**MAIL STOP *Ex Parte***
Reexamination Control No.: 90/011,036	***REEXAMINATION - AMENDMENT***
Filing Date: June 14, 2010	Group Art Unit: 3992
Title: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	Examiner: Andrew Nalven
	Confirmation No.: 1071

AMENDMENT/REPLY TRANSMITTAL LETTER

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

Sir:

Enclosed is a reply for the above-identified patent application.

☐ A Petition for Extension of Time is enclosed.

☐ _____ Terminal Disclaimer(s) and the ☐ $ 70 ☐ $ 140 fee per Disclaimer due under 37 C.F.R. § 1.20(d) are enclosed.

☒ Also enclosed is/are: Exhibit A: Declaration of Ketan Mayer-Patel Under 37 CFR 1.132; Exhibit B: Memorandum Opinion and Order; Exhibit C: Order

☐ Small entity status is hereby claimed.

☐ No additional claim fee is required.

☒ An additional claim fee is required, and is calculated as shown below:

AMENDED CLAIMS					
	No. of Claims	**Highest No. of Claims Previously Paid For**	**Extra Claims**	**Rate**	**Additional Fee**
Total Claims	72	19	53	x $ 52 (1202)	$ 2756.00
Independent Claims	5	5	0	x $ 220 (1201)	0
☐ If Amendment adds multiple dependent claims, add $ 390 (1203)					$ 0
Total Claim Amendment Fee					**$ 2756.00**
☐ Small Entity Status claimed - subtract 50% of Total Claim Amendment Fee					0
TOTAL ADDITIONAL CLAIM FEE DUE FOR THIS AMENDMENT					**$ 2756.00**

☐ Charge _____ to Deposit Account No. 02-4800 for the fee due.

☒ Charge $ 2756.00 to credit card for the fee due.

☒ The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.20(d) and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date April 11, 2011

By: _____
Charles F. Wieland III
Registration No. 33096

Customer No. 21839
703 836 6620

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	**MAIL STOP REEXAMINATION**
U.S. Patent No. 6,226,686	Group Art Unit: 3992
Jeffrey J. Rothschild et al.	Examiner: Andrew Nalven
Issued: May 1, 2001	Confirmation No.: 1071
Reexamination Control No.: 90/011,036	
Filing Date: June 14, 2010	
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

AMENDMENT

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

Sir:

In response to the Office Action dated February 10, 2011, please amend the above-identified patent as follows:

TABLE OF CONTENTS

AMENDMENTS TO THE CLAIMS:

Please add new claims 20-72. Original patent claims 1-19 are not changed by this paper and have not been represented below in accordance with 37 CFR 1.530(d) through (j) and MPEP § 2250. All changes are shown relative to the set of claims that appear in the issued patent.

LISTING OF CLAIMS:

20. (New) The method of claim 1, wherein a server implements a group messaging protocol layered on top of a transport protocol of said network, wherein said group messaging protocol uses an address space that is separate from an address space of said transport protocol.

21. (New) The method of claim 20, wherein said group messaging protocol is performed at a session layer.

22. (New) The method of claim 1, further comprising the step of performing, by said server, echo suppression.

23. (New) The method of claim 1, wherein said plurality of host computers belonging to said message group correspond to players that are in close proximity to one another within a three-dimensional space of a computer game.

24. (New) The method of claim 1, further comprising the step of changing membership of said message group based on activities of players within a computer game.

25. (New) The method of claim 1, further comprising the step of changing membership of said message group based on changes in player position within a three-dimensional space of a computer game.

26. (New) The method of claim 1, wherein membership of said message group changes dynamically over time.

27. (New) The method of claim 1, wherein said application is a game.

28. (New) The method of claim 1, wherein said transmitting is performed by an upper-level protocol implemented above a transport layer protocol of said network, wherein said transport layer protocol is TCP/IP.

29. (New) The method of claim 1, wherein said transmitting are performed by an upper-level protocol implemented above a transport layer protocol of said network, wherein said plurality of host computers are unable to send upper-level protocol messages to one another except through said group messaging server.

30. (New) The method of claim 1, further comprising the steps of:

a server receiving a control message to close said message group; and

removing said message group in response to receiving said request.

31. (New) The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query message groups of said server; and

providing said list of message groups to said first host computer in response to said receiving said control message.

32. (New) The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query members of said message group; and

providing a list of members of said message group to said first host computer in response to receiving said control message.

33. (New) The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query attributes of said message group; and

providing attributes of said message group to said first host computer in response to receiving control message.

34. (New) The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to connect to said group messaging server; and

storing information regarding said first host computer in response to receiving said control message.

35. (New) The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to disconnect from said group messaging server; and

removing information regarding said first host computer in response to receiving said control message.

36. (New) The method of claim 1, further comprising the step of forming said aggregated message by compressing said aggregated payload.

37. (New) The method of claim 5, wherein said host message comprises application specific state information.

38. (New) The method of claim 5, wherein said host message comprises information that other host computers in said message group use to maintain a consistent application state.

39. (New) The method of claim 12, wherein a server implements a group messaging protocol layered on top of a transport protocol of said network, wherein said group messaging protocol uses an address space that is separate from an address space of said transport protocol.

40. (New) The method of claim 39, wherein said first group messaging protocol is performed at a session layer.

41. (New) The method of claim 12, further comprising the step of performing, by said server, echo suppression.

42. (New) The method of claim 12, wherein said plurality of host computers belonging to said first message group correspond to players that are in close proximity to one another within a three-dimensional space of a computer game.

43. (New) The method of claim 12, further comprising the step of changing membership of said first message group based on activities of players within a computer game.

44. (New) The method of claim 12, further comprising the step of changing membership of said first message group based on changes in player position within a three-dimensional space of a computer game.

45. (New) The method of claim 12, wherein membership of said first message group changes dynamically over time.

46. (New) The method of claim 12, wherein said application is a game.

47. (New) The method of claim 12, wherein said transmitting are performed by an upper-level protocol implemented above a transport layer protocol of said unicast network, wherein said transport layer protocol is TCP/IP.

48. (New) The method of claim 12, wherein said transmitting are performed by an upper-level protocol implemented above a transport layer protocol of said unicast network, wherein said plurality of host computers are unable to send upper-level protocol messages to one another except through said group messaging server.

49. (New) The method of claim 12, further comprising the steps of:

a server receiving a control message to close said first message group; and

removing said first message group in response to receiving said request.

50. (New) The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query message groups of said server; and

providing said list of message groups to said first host computer in response to said receiving said control message.

51. (New) The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query members of said first message group; and

providing a list of members of said first message group to said first host computer in response to receiving said control message.

52. (New) The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query attributes of said first message group; and

providing attributes of said first message group to said first host computer in response to receiving control message.

53. (New) The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to connect to said first group messaging server; and

storing information regarding said first host computer in response to receiving said control message.

54. (New) The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to disconnect from said first group messaging server; and

removing information regarding said first host computer in response to receiving said control message.

55. (New) The method of claim 12, further comprising the step of forming said aggregated message by compressing said aggregated payload.

56. (New) The method of claim 18, wherein a server implements a group messaging protocol layered on top of a transport protocol of said network, wherein said group messaging protocol uses an address space that is separate from an address space of said transport protocol.

57. (New) The method of claim 56, wherein said group messaging protocol is performed at a session layer.

58. (New) The method of claim 18, further comprising the step of performing, by said server, echo suppression.

59. (New) The method of claim 18, wherein said plurality of host computers belonging to said message group correspond to players that are in close proximity to one another within a three-dimensional space of a computer game.

60. (New) The method of claim 18, further comprising the step of changing membership of said message group based on activities of players within a computer game.

61. (New) The method of claim 18, further comprising the step of changing membership of said message group based on changes in player position within a three-dimensional space of a computer game.

62. (New) The method of claim 18, wherein membership of said message group changes dynamically over time.

63. (New) The method of claim 18, wherein said application is a game.

64. (New) The method of claim 18, wherein said transmitting is performed by an upper-level protocol implemented above a transport layer protocol of said network, wherein said transport layer protocol is TCP/IP.

65. (New) The method of claim 18, wherein said transmitting are performed by an upper-level protocol implemented above a transport layer protocol of said network, wherein said plurality of host computers are unable to send upper-level protocol messages to one another except through said group messaging server.

66. (New) The method of claim 18, further comprising the steps of:

a server receiving a control message to close said message group; and

removing said message group in response to receiving said request.

67. (New) The method of claim 18, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query message groups of said server; and

providing said list of message groups to said first host computer in response to said receiving said control message.

68. (New) The method of claim 18, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query members of said message group; and

providing a list of members of said message group to said first host computer in response to receiving said control message.

69. (New) The method of claim 18, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query attributes of said message group; and

providing attributes of said message group to said first host computer in response to receiving control message.

70. (New) The method of claim 18, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to connect to said group messaging server; and

storing information regarding said first host computer in response to receiving said control message.

71. (New) The method of claim 18, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to disconnect from said group messaging server; and

removing information regarding said first host computer in response to receiving said control message.

72. (New) The method of claim 18, further comprising the step of forming said aggregated message by compressing said aggregated payload.

REMARKS

In view of the foregoing amendments and the following remarks, the Patent Owner (PalTalk Holdings, Inc.) respectfully requests reconsideration and withdrawal of the rejections found in the Office Action of February 10, 2011.

1. Claim Status

Original claims 1-19 are under re-examination and have been rejected. None of the original claims have been presently amended. New dependent claims 20-72 have been added by the above. Claims 1-72 are currently pending before the Office for examination.

2. Summary of Interview

The Patent Owner wishes to thank Examiners Andrew Nalven, Albert Gagliardi and SPE Eric Keasel for the courtesies extended during the personal interview of April 5, 2011, to the undersigned, Mr. Robert Mukai and Dr. Ketan Mayor-Patel, an expert in network operating systems and multimedia computing who is submitting his Declaration concurrently with this Amendment and has submitted two Declarations in related Reexamination Control No. 90/011033.

Robert Mukai began the meeting with introductions and provided an overview of the points to be made. Specifically, Mr. Mukai submitted that a careful review of the applied documents (Netrek source code for a server-based game loosely based on Star Trek, and U.S. Patent No. 5,736,982 issued to Suzuki et al) revealed certain

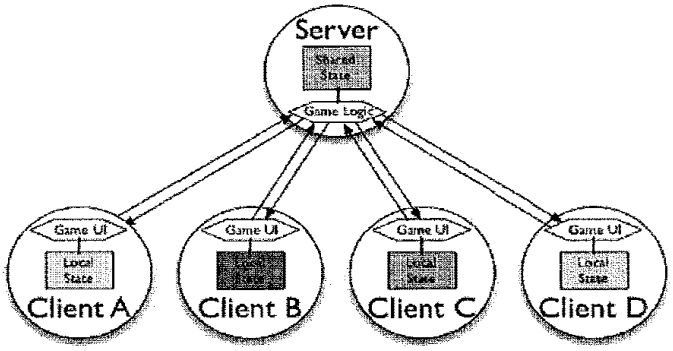
recitations of the pending claims that were absent in the cited documents. Because the arguments were largely technical in nature, Mr. Mukai then turned the meeting over to Dr. Mayer-Patel.

Dr. Mayer-Patel explained the different computer architectures of (1) the applied art, (2) the background art mentioned in the '686 patent and (3) the innovations represented by the '686 patent with reference to three diagrams, reproduced below.[1]

More specifically, Dr. Mayer-Patel explained that the following diagram entitled "Model Architecture for a Centralized Shared Interactive Application" represented a high level conceptual view of both Netrek and Suzuki.[2] Dr. Mayer-Patel explained that Clients A, B, C and D each include the ability to mirror the local section of the central game state and have a game user interface, but the game state is maintained at a central location and in particular a server in which the central game state is maintained. Because the game state is maintained on only one machine, it inherently maintains the same game state. The clients merely mirror identical copies of their local section of the central game state maintained by the central server.

[1] A more detailed explanation of Dr Mayer-Patel's observations appear in the accompanying Declaration of Dr. Ketan Mayer-Patel, attached hereto as Exhibit A.
[2] Only four clients are shown in these diagrams for sake of clarity. Netrek could have a total of up to 16 clients and the present invention can have many, many more.

Model Architecture for a Centralized Shared Interactive Application



Key Characteristics:
- Game logic implemented on server
- One copy of shared state
- Shared state is consistent by definition

Dr. Mayer-Patel then explained that each client can send commands to the central server (e.g., fire a torpedo). The central server, having the one and only copy of the game logic, processes the information in the client message to change the game state, and then decides which clients require what information regarding the changed game state. Here, it was noted that the server could chose to ignore the client message. Depending on the result of the processing of the data, the central game state server could send server messages to change the local state of the appropriate clients A, B, C and/or D. It was specifically noted that the client messages relevant to the game state are not passed onto the other clients, but are consumed by the game state server.

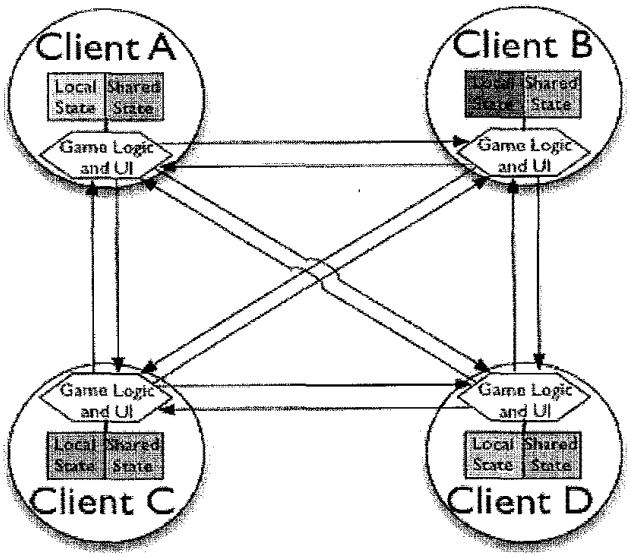
Chat messages, that is text sent from one player to one or more other players, would be forwarded to the appropriate clients in Netrek, but these chat messages cannot affect the game state. That is, if one player sent a chat message to another

team member saying "shoot the Klingon with a torpedo," the game state could not be changed. The recipient of the message could ignore it, or even if he did listen, the game state would not change until he sent a torpedo command.

Dr. Mayer-Patel emphasized that the game logic is implemented only on the server, which has the only game engine. The shared state depicted at each client, of course, is consistent by definition because it comes from the game engine on the server. Both Netrek and Suzuki have this architecture.

Dr. Mayer-Patel then explained with reference to the second chart entitled "Model Architecture for a Decentralized Shared Interactive Application Without '686 Patent" how a decentralized or distributed game is configured.

Model Architecture for a Decentralized Shared Interactive Application Without '686 Patent



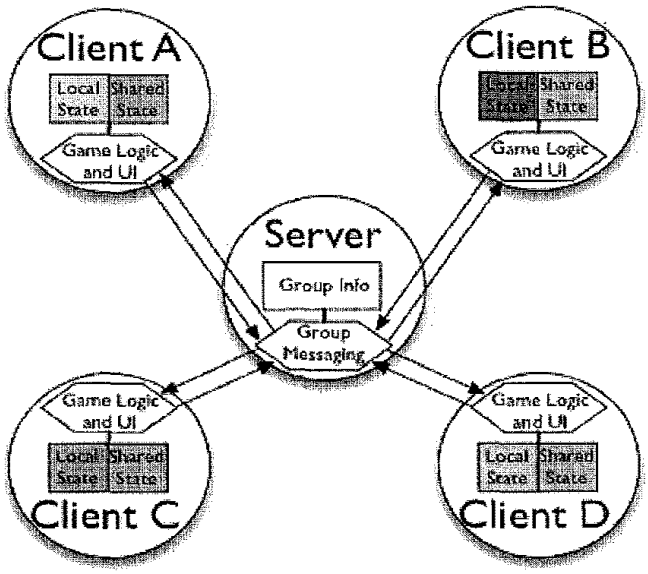
Key Characteristics:
- Game logic implemented on each client
- Many copies of shared state
- Shared state must be actively kept consistent
- Clients must send/receive lots of messages to/from many others.

With reference to this figure, Dr. Mayer-Patel explained that each Client A, B, C and D not only maintained a local state and a shared state but also included the game logic and the user interface. Hence, the game logic is implemented on each client and many copies of the shared state are replicated throughout the decentralized shared interactive application. The shared state therefore must be actively kept consistent and the clients must send and receive many messages to and from the many other clients. The undersigned offered as an example that if Client A decided to change the game state by having its avatar shoot a weapon, that communication would have to be transmitted to Client B, C and D, meaning that the

client would have to send multiple communications, one for each other client, for a single change in game state. Further, if each client had a similar change in game state, then each other client would have to receive a communication from each client, meaning that using a simplified example, three communications would have to go out and nine communications would have to be received for each of the clients to change the game state. Dr. Mayer-Patel pointed out that the both applied documents, Suzuki and Netrek, utilized a centralized server and not a decentralized shared interactive application.

Dr. Mayer-Patel then explained the high level conceptual difference of the present invention from the applied art with reference to the figure entitled "Model Architecture for a Decentralized Shared Interactive Application With '686 Patent."

Model Architecture for a Decentralized Shared Interactive Application With '686 Patent



Key Characteristics:
- Server provides group messaging capabilities
- Groups creation and joining at direction of clients
- Clients send/receive only to server
- Server aggregates message payloads for delivery

Here, the Clients A, B, C and D include a local state and a shared state, and include the game logic and user interface. However, the client need only communicate with the group messaging server (GMS). Hence, the client rather than sending out three messages could send one message to the group messaging server. The group messaging server could then send out messages to the game engines on Clients B, C and D, if that were appropriate. One embodiment of the system disclosed in the '686 patent takes the above process one step further by aggregating messages from A, B, C and/or D to form a single server message so

that the Clients A, B, C and D need only receive a single communication, rather than the nine illustrated in the previous figure.[3]

Dr. Mayer-Patel then summarized by saying that key characteristics of the diagram included the server function providing group messaging capabilities as well as group creation and joining groups at the direction of clients. Dr. Mayer-Patel additionally mentioned the clients send and receive to and from a server and the server aggregates the message payloads for delivery.

Dr. Mayer-Patel then began relating these high level concepts to claim language. For instance, Dr. Mayer-Patel noted that claim 1, paragraph 1, recites "receiving a create message from one of the plurality of host computers, wherein said create message specifies a message to be created." Dr. Mayer-Patel pointed out that the Netrek code did not include receiving a create message that specified a message group to be created. This is because Netrek predefines a 16 player environment divided into four teams. These teams are fixed in the code, and not created by a client command. There is no ability, whatsoever, to create a new group.

Further, the second recitation of claim 1 speaks of a "join message" wherein each of the joined messages specifies the message group. Netrek includes giving the player the ability to select one of the four groups, but if this selection is understood to be the "join message" of claim 1, paragraph 2, that group cannot have been "created" as required by the first paragraph. It is believed that the Office

[3] Dr. Mayer-Patel mentioned that though he used the term "server" in the diagram it should be understood that this is to identify a group messaging server function or service and need not

understood this position and so Dr. Mayer-Patel continued to identify other recitations of claim 1 not met by Netrek.

Specifically, in paragraph 3 the messages are recited to contain "a payload portion and a portion that is used to identify said message group". Dr. Mayer-Patel explained that if one were to take the game state command controls, such as the torpedo in Netrek, it is identified in the code as having only two bytes one of which identified the command as being a torpedo (with the number six) and the other byte identifies the direction of the torpedo. The Requestor suggested that the direction was used to identify who might be affected by the torpedo and therefore identified the message group. This is not an identification of a message group. To the degree the direction is used to process the torpedo command and send out post process commands to be utilized by the different clients, the determination of recipients is determined on a per-player basis, rather than through the use of message groups.

With respect to chat messages, it was noted that the wherein clause of claim 1 ("wherein said aggregated message keeps the shared, interactive application operating consistently on each of the first subset of the plurality of host computers") meant that chat messages did not qualify as an aggregated message.

Examiner Nalven asked if chat message suggesting a move by another player might be interpreted as meeting the wherein clause, to which each of Dr. Mayer-Patel, Mr. Mukai and the undersigned explained that saying "fire a torpedo" could not change the game state or cause it to operate consistently. In fact, such a comment could be easily ignored by the other players. In fact, as Dr. Mayer-Patel pointed out,

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necessarily be an actual separate server.

the chat messages under Netrek were regularly omitted from transmission, if the transmission mechanism was otherwise occupied.

The undersigned pointed out that claim 1 included the recitation of "aggregating said payload portions of the host messages received from the second subset of the plurality of host computers to create an aggregated payload" and that because Netrek, with respect to the torpedo command, identified only the command type and the direction of the torpedo, and that these signals were then processed to generate other commands at the discretion of the centralized server, they could not be said to be "aggregated" as this term is used in claim 1. Dr. Mayer-Patel provided an example illustrating that even if the game state server accepted the command, what was generated was a series of server messages to the other clients, including "wobbling" the torpedo. That is, at every fifth of a second or faster the game state server sends an update message to clients identifying the torpedo and its direction, but the direction is varied so that it appears to wobble to the clients receiving the server messages. This illustrated that the incoming message was not being aggregated into an outgoing message by the server.

Claims 3 and 5 were also specifically discussed as having very similar language. The other independent claims were not specifically discussed.

The undersigned also mentioned that the prior art status of Netrek was questionable and arguments to this effect would likely be submitted. Thereafter, the meeting was adjourned.

3. Support for Newly Added Claims

As previously mentioned, claims 20-72 are added by the instant Amendment. Written description support for these claims exists as shown by the illustrative cites in the following table. The abbreviated quotes or paraphrasing are given for convenience and may be incomplete. These citations should, of course, be considered in the fuller context of the specification where they appear.

Claims	Written Description Support
20, 39, 56	Col. 8, lines 34-41.
21, 40, 57	Col. 8, lines 34-39.
22, 41, 58	Col. 9, lines 40-43.
23, 42, 59	Col. 10, lines 1-14.
24, 43, 60	Col. 10, lines 13-17.
25, 44, 61	Col. 10, lines 13-17.
26, 45, 62	Col. 9, line 59-col. 10, line 19; original claims 13 and 14; col. 16, lines 64-66; col. 18, lines 27-50; col. 18, line 51-col. 19, line 9.
27, 46, 63	Col. 8, lines 22-32; col. 1, lines 57-67; col. 16, lines 20-35.
28, 47, 64	Col. 12, lines 38-48; col. 26, lines 28-29.
29, 48, 65	Col. 12, lines 38-48; col. 15, lines 28-37.
30, 49, 66	Col. 16, lines 64-66.
31, 50, 67	Col. 16, lines 64-66; col. 19, lines 10-29.
32, 51, 68	Col. 16, lines 64-66; col. 19, lines 30-47.
33, 52, 69	Col. 16, lines 64-66; col. 19, lines 49-63.
34, 53, 70	Col. 16, lines 64-66; col. 18, lines 14-31.
35, 54, 71	Col. 16, lines 64-66; col. 18, lines 32-47.
36, 55, 72	Col. 24, lines 33-34.
37	Col. 10, lines 52-53.
38	Col. 8, lines 22-32; col. 1, lines 57-67; col. 16, lines 20-35.

4. Background of the '686 Patent

In 2002, PalTalk purchased U.S. Patent Nos. 5,822,523 and 6,226,686 (the "PalTalk Patents")[4] from HearMe, previously known as Mpath.[5] HearMe/Mpath, founded in 1995, developed and sold technology to permit multiple parties to play video games with each other over the Internet.

When HearMe/Mpath entered the market, the main obstacles to multiplayer online games were the limited processing power and bandwidth available to transmit messages to each player. The PalTalk Patents disclose pioneering technology directed at overcoming these obstacles. The inventions at the heart of these patents reduce the bandwidth and processing power necessary to exchange messages between various users on a network, so that during an online game, all players can have a near real-time gaming experience even though players may be at great distances from each other. The patents thus overcame the problem of limited bandwidth in the transmission of messages between players about the state of the game.

The PalTalk Patents are both titled "Server-Group Messaging System for Interactive Applications." As the title suggests, the focus of the patents is on interactive applications operating over a network. While the solutions described in the PalTalk Patents apply equally to any interactive application, the application typically used as an example in the Patents is a networked computer game with

[4] U.S. Patent Nos. 5,822,523 and 6,226,686 Patent are related and both under reexamination. The application that led to issuance of the '686 Patent is a continuation of U.S. Application No. 08/896,797, which is a continuation of the application that led to issuance of the '523 Patent. The control number for the '523 patent is 90/011,033.

multiple players. *See, e.g.*, '626 Patent, 1:18-27; 1:62 – 2:37; 2:51 – 3:27; 8:27-30; 10:6-24; and 11:13-28.

The following example from the PalTalk Patents illustrates the basic functionality in an exemplary embodiment. A multi-player computer video game has characters playing against each other in a three-dimensional game environment. The actual players might be located in different areas of the country connected by the Internet, each user with the game environment reproduced on his or her computer screen. To maintain consistency, the game "state," or status, should be consistent between all of the users' computers. The computers achieve this consistency by continuously exchanging messages. *Id.* at 1:26-2:12. These messages can contain "a wide variety of information specific to the game" necessary to maintain consistency between players such as position and velocity information for the players and other information about player actions that may affect the players in the game. *Id.* at 2:12-16.

The number of messages that should be sent between computers to keep an application current on the players' computers increases with the number of players. Although advances in technology have increased network bandwidth, the complexity of games has increased as well, thereby increasing the amount of data that should be transmitted to other players to maintain a consistent game state. Thus, the bandwidth limitations addressed by the PalTalk Patents are just as relevant today as when the original application for the '686 Patent was filed over 15 years ago.

[5] PalTalk also purchased a range of other intellectual property and physical assets from HearMe/Mpath.

The inventions described in the PalTalk Patents solve problems of interactive network applications by introducing what is called a "group messaging server." '686 Patent, *Abstract*. The client computers in the system are referred to as "host computers."

Figure 5 of the PalTalk Patents shows an exemplary embodiment of a network implemented pursuant to the inventions described in the PalTalk Patents. Item 62 is the group messaging server. Items 58, 59, 60, and 61 are host computers. The remaining items are traditional network components, such as routers and links. *Id.* at 8:65-9:5.

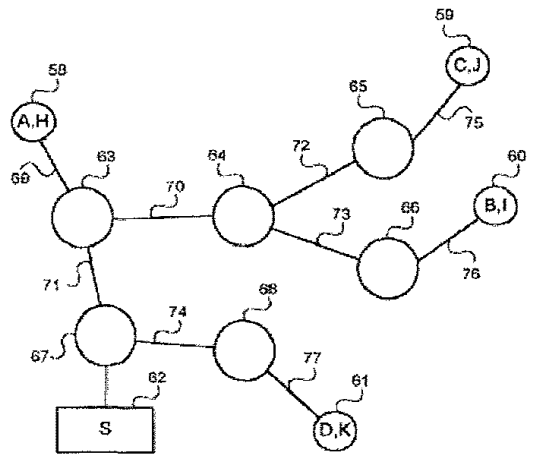

FIGURE 5

In a traditional network, if host computer 58 wanted to update host computers 59, 60, and 61 with information about an interactive application that they were

sharing, host computer 58 would have to send three separate messages — one to host 59, one to host 60, and one to host 61.

Using the inventions described in the PalTalk Patents, host computer 58 could achieve the same result by sending a single message to the group messaging server 62. The group messaging server would receive the message from host computer 58 and generate a message to each of hosts 59, 60, and 61. *Id.* at 9:5-8. In effect, the number of outgoing messages sent by any individual host computer can be equal to one (1) using the PalTalk invention, whereas the number of messages was previously equal to the number of players (minus one for the sender).

The number of outgoing messages from the sender is reduced in the above example. Using only this feature of the PalTalk Patents, the number of messages received by a host computer would remain the same. The PalTalk Patents provide a further solution to the desire to reduce the number of messages on the network by aggregating messages at the group messaging server. *Id.* at 10:24-26. Instead of separately sending received messages to each of the hosts, the group messaging server can instead collect multiple messages from different hosts and forward them to the destination host computer as a single message.

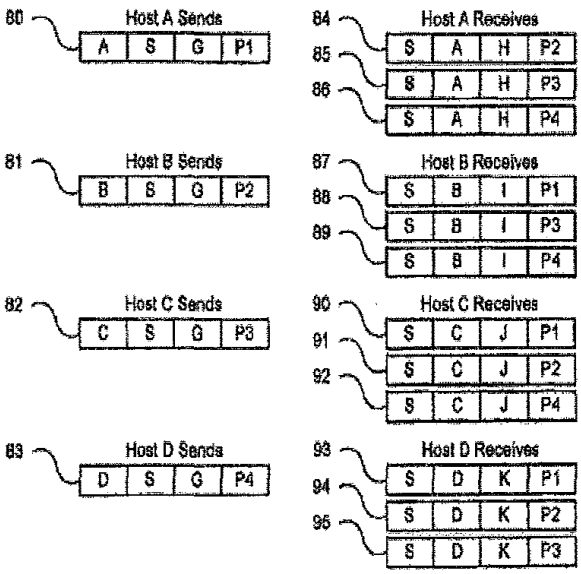

FIGURE 6

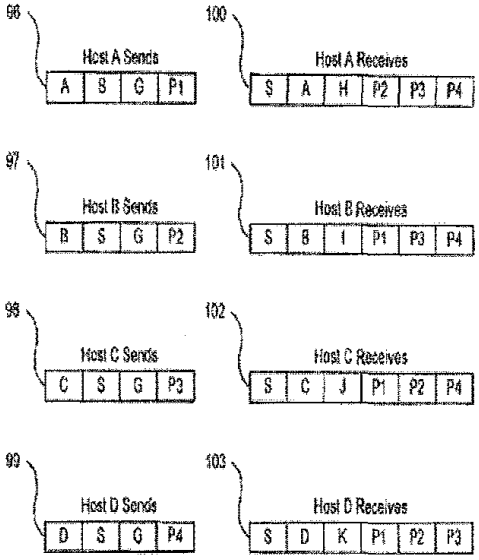

FIGURE 7

Figures 6 and 7 shown above provide an example of the messages sent by the group messaging server without and with aggregation, respectively. *Id.* at 9:27-30. Without aggregation (on the left), each of the four host computers sends a single message with data being sent between hosts. *See, e.g., Id.* at 9:14-17. The group messaging server separately sends each recipient host computer a copy of the messages that it received, for a total of three received messages (host A receives three separate messages with payloads P2, P3, and P4). *Id.* at 9:31-44. With aggregation, although the group messaging server receives the same number of messages from the hosts, each recipient host computer receives only a single message in this example. The payload of the single

message, however, includes an aggregated payload consisting of the relevant data received by the group messaging server (*e.g.,* host A receives a combined payload containing P2, P3, and P4). *Id.* at 10:24-47. Aggregation in some form is recited in each independent claim except claim 5.

In summary, the PalTalk Patents describe a system for reducing both the network load and the message processing requirements that arise because of network communications in a multi-user interactive application. The system reduces the network load by using a group messaging server as a destination for messages between host computers. The group messaging server may be responsible for tracking groups and group membership. The group messaging server may further reduce the load on the network by aggregating the messages that it receives for a particular host computer. Aggregation allows more efficient data communication by reducing the number of messages that a recipient host is expected to process. Then, as now, routing two messages through a network requires more overhead than a single message with double the payload. In one of its key applications, online gaming, the group messaging server allows for more efficient communication of large amounts of information between players, thus enabling games to become quicker, be more realistic and, consequently, more attractive to consumers.

5. Claim Construction

To facilitate a discussion and understanding, the Patent Owner offers the comments regarding the meaning of various claim terms.[6] In light of the above description, which fully supports these interpretations, and from the context of the claims themselves, it is respectfully submitted that "aggregated message," "aggregated payload," and "server message," recited in claims 1, 3 and 18 of the '686 patent means "one or more" message payloads and that "server message" as recited in claim 5 of the '686 patent means "one or more" messages.[7]

With respect to "aggregating said payload portions..." in claims 1, 3 and 12, the Patent Owner respectfully submits that this term means aggregating at least one data item from the payloads all the claimed messages from the claimed plurality of host computers. The data items may be aggregated in any order. With respect to "aggregating said payload portions of said host messages ... to create an aggregated payload" in claim 1, the Patent Owner submits that this means aggregating said payload portions of said host messages ... to create one or more aggregated payloads." Similarly, aggregating said payload portions of said messages ... to create an aggregated payload" in claim 12 means aggregating the payload portions of the messages to create one or more aggregated payloads. Additionally, "aggregating said payload portions ... to create an aggregated message" as recited in claim 3 means aggregating the payload portions of the host

[6] These definitions are in accordance with a Memorandum and Order of the Court dated April 5, 2011 in related litigation Paltalk Holdings, Inc. vs. Sony Computer Entertainment America, Inc. et al. 2:09-cv-00274-DF-CE, copy attached hereto as Exhibit B.
[7] Other claims have the same or similar language, but these claims were not specifically addressed in the Court.

messages to create one or more aggregated messages. Aggregating refers to the payloads' constituent data items and does not require aggregation of the entire payload and the terms "aggregated payload" and "aggregated message" reflect that the aggregated messages/payloads can be one or more messages sent by the host computer. There is no requirement that the server send a single identical message to the host computer.

Similarly, the phrase "forming a server message by using said payload portion of said host message; and aggregating said payload portion with the payload portion of the second host message retrieved from another of the plurality of host computers belonging to said message group" of claim 18 means forming one or more server messages, each containing one or more data items from the payload portion of a second host message received from another of the plurality of host computers belonging to said message group, where each of the data items retains its identity and may be extracted from one or more server messages. The following constructions of "aggregating" / "aggregated" means to "collect two or more data items together as a unit, however, where each data items retains its identity and may be extracted from the unit;" and "aggregated message" means "one or more messages containing destination data and data items from an aggregated payload;" and "forming an aggregated message using an aggregated payload" means "creating one or more aggregated messages that contain data items from an aggregated payload." As used in claim 5, "server message" means "one or more

messages formed by a server for delivery to one or more group members." The same is true of this phrase as it appears in claim 18.

Each of these claim constructions are in accordance with the specification, prosecution history and the recent Memorandum in the ongoing litigation.

6. Netrek is Not Prior Art

The Requester cannot establish Netrek (i.e., Netrek client BRMH-1.7 and server vanilla 2.5 p14) was a publicly available prior art publication as of the PalTalk patent's uncontested priority date, February 1, 1996. As Chief Judge Folsom ordered in the prior Microsoft litigation,[8] "[e]ven if the evidence before the Court was sufficient to prove anticipation, this Court would still deny Microsoft's motion as that evidence [Netrek] is not sufficiently corroborated by reliable documentary or physical evidence." (Order to Deny MS' motion for anticipation, pg. 4, attached hereto as Exhibit C). The Requester relies upon the Ahn Declaration, submitted in an unrelated reexamination proceeding,[9] suggesting that paragraphs 7-10 and 15 establish Netrek was "publically available" as early as August 1994. What the Requester did not tell the Patent Office is that Ahn's Declaration lacks corroboration, in fact is very equivocal, and does not demonstrate that Netrek meets the legal standard for a publication.

To prove that Netrek client BRMH-1.7 and server vanilla 2.5 p14 were prior art publications, the Requestor had to establish three things: A) the reference could be

[8] Paltalk Holdings, Inc. vs. Microsoft Corp., 2:06-cv-00367-DF, Document 172 dated February 2, 2009.
[9] The Ahn Declaration was executed in December, 2007, in connection with Ex Parte Reexamination of U.S. Patent No. 6,264,560. In the years since Mr. Ahn filed his declaration, the FTP site that he references in paragraphs 12-13 of his declaration appear to have been changed and no longer contain some of the files

located by interested members of the public, B) the reference was publicly accessible, and C) the date on which these conditions were both met.

The Netrek Variations Were Not Catalogued

With respect to the requirement that the reference be locatable, the Federal Circuit has explained "[a] reference is considered publicly accessible if it was 'disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.' *Kyocera Wireless Corp. v. Int'l Trade Comm'n*, 545 F.3d 1340, 1350 (2008) (quotation marks omitted)." *In re Lister*, 583 F. 3d 1307, 1311 (Fed. Cir. 2009).

The Federal Circuit found that the distinguishing question was whether or not the references were catalogued or indexed in a meaningful way. *Id.* at 1312, citing *In re Cronyn*, 890 F.2d 1158, 1161 (Fed. Cir. 1989). In Cronyn, the Board of Patent Appeals and Interferences was reversed because an alphabetical listing of 450 chemistry theses "was not sufficient to make them reasonably accessible to the public" - even though three separate theses were alleged to be anticipatory. *Id.* at 1159 (numerical details) and 1161 (conclusion). It is important to note this was the Court's conclusion regarding insufficient cataloging even though the theses were clearly about chemistry, by virtue of their being housed in the chemistry library.

As per the Ahn Declaration, Netrek client BRMH-1.7 and server vanilla 2.5 p14 would have been even harder for a person interested or ordinarily skilled in the subject matter to locate. The PalTalk patent states its "Field of the Invention," namely, "[t]he present invention relates to computer network systems, and

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referenced in paragraph 13 (Vanilla 2.5p14).

particularly to server group messaging systems and methods for reducing message rate and latency." ('686, 1: 10-12). Whereas in Cronyn, the ordinarily skilled person was looking for a chemistry reference, and presumably would have thought to check college libraries, the ordinarily skilled person in this case would have needed to know to find a particular Netrek client and a particular Netrek Server to combine without a proper index or abstract of what these software files contained in combination.

Ahn all but admits that the proffered references fail this test. Ahn has not declared that one of ordinary skill, as opposed to a Netrek player, could locate both Netrek client BRMH-1.7 and server vanilla 2.5 p14 as the references of interest.

Ahn only declares that the "Netrek community" could locate copies of some versions of Netrek code (other than a conclusory statement at the end). (Ahn Decl. para. 8, 9 and 15). Only the particular versions of Netrek client BRMH-1.7 and server vanilla 2.5 p14 are alleged to be anticipatory. Ahn explains that "there are many versions and variations of Netrek client and server software." (Ahn Decl. para. 5). Ahn states that one would find source code for the various versions of Netrek by consulting a list of FTP servers, each of which in turn contained an unknown number of versions and variations of Netrek clients and browsers. Ahn cannot point to a single location that references both the client and server version in question; rather, each is addressed in a separate list. (Ahn decl. para. 9). Perhaps it is this lack of a central catalog that explains why Ahn states that it took him years to learn where "various versions of the associated files could be found." (Ahn Decl. para. 7).

In *In re Bayer*, the Federal Circuit held that a reference is not a publication where it can be located "only by one having been informed of its existence by the [author's] faculty committee, and not by means of the customary research aids available in the library." 568 F.2d 1357, 1361 (CCPA 1978). Here, Ahn has not even suggested that one interested in server group message systems and methods for reducing message rate and latency would have any reason to consider software named "Netrek client BRMH-1.7 and server vanilla 2.5 p14" or be directed to it by customary search aids, whereas the faculty in Bayer and the library in Cornyn were at least locatable by subject.

Thus, because Netrek client BRMH-1.7 and server vanilla 2.5 p14 were not available to the extent that persons interested and ordinarily skilled in server group messaging systems and methods for reducing message rate and latency exercising reasonable diligence could locate them, Netrek is not a publication and therefore not prior art for purposes of this reexamination proceeding.

The Netrek Variations Were Not Available To The Public By The Priority Date

Ahn's Declaration lacks an assertion that the source code was publicly available before the priority date of February 1, 1996 of the '686 Patent (other than a conclusory statement at the end). Ahn only states that he informed the Netrek community that he had put together an archive on Oct. 23, 1998 - after the priority date. He states that during the 1995-1998 "time frame" he became aware that a number of websites and FTP sites were shutting down. (Ahn Decl. para. 11). He does not say that this is when he started downloading copies of Netrek, much less

the particular copies that have been put in the Request. Even if he had, that would only prove a date of 1998, which is again after the priority date.

Ahn admits that he spent "a great deal of time ... modifying the source code to various Netrek software," which directly undermines his unstated assumption that the links in the Usenet postings would take a Netrek player to the same copy of the source code that has been put into this request. (Ahn Decl. para. 7). Ahn has no knowledge of whether the proffered files were on a private computer before the priority date. Therefore, in addition to the cataloging issues, the Ahn Declaration lacks evidence that the proffered source variations were publicly available before Feb. 1, 1996. This is a second, independent basis for finding that Netrek cannot be legally corroborated as a printed publication before the priority date.

The Netrek Variations Were Not Completed By The Priority Date

Ahn's declaration also fails to establish when these source codes were completed. Rather, he only declares that the file creation dates are before the priority date.[10] Ahn is very specific that the time stamps in question are creation dates, and thus are only probative of when the empty file was first opened on some computer. (Ahn Decl. paras. 14 and 15). Ahn has not provided a basis why the files could not have been modified after the creation date and also that the dates on the files provided to it include a range of June 24, 2010, to October 15, 1993. The Patent Owner notes that WinZip, as with other archiving programs, will allow users to

[10] Time stamps are hearsay. *In re Epstein*, 32 F.3d 1559, 1565-56 (a Federal Court is required to find such hearsay inadmissible, while the Patent Office is not required to reject something as hearsay, but may instead leave parties with recourse to introduce further evidence under 37 C.F.R. § 1.132 or to file a civil suit in the United States District Court for the District of Columbia should hearsay be used to justify a determination.)

add, edit and delete files without altering the archive's creation date. Thus, Ahn's Declaration fails to address the possibility that the relied upon aspects of the source code were conceived of and added to the already existing archives, leaving the creation date unchanged.

As did the District Court in the Microsoft case, it is respectfully submitted that the Requestor has not proven that the particular Netrek versions were finished before the priority date, nor have they shown that the completed works were accessible to the public. The Requester also lacks a showing that BRMH-1.7 and server vanilla 2.5 p14 were indexed or catalogued such that persons interested and ordinarily skilled in server group messaging systems and methods for reducing message rate and latency exercising reasonable diligence could locate them.

Ahn's Declaration is Uncorroborated

Mr. Ahn's testimony is uncorroborated. The Federal Circuit succinctly articulated the need for the corroboration requirement in *Woodland Trust v. Flowertree Nursery Inc.* explaining

> In view of the unsatisfactory character of testimony, arising from the forgetfulness of witnesses, their liability to make mistakes, their proneness to recollect things as the party calling them would have them recollect them, aside from the temptation to actual perjury, courts have not only imposed upon defendants the burden of proving such devices, but have required that the proof shall be clear, satisfactory and beyond a reasonable doubt.

148 F.3d1368, 1372 (Fed. Cir. 1998) (quoting *Washburn and Mowen & Mowen Mfg. Co. v. Beat 'Em All Barb-Wired Co.*, 143 US 275, 284 (1892)). The date stamp on the files is not reliable, as generally recognized by people familiar with computer date

stamps and no more apparent than the attachment accompanying the computer program listing appendix for Requestor ex parte reexamination of US Patent No. 6,226,686 filed in the above captioned matter wherein a list of files has mixed dates of June 14, 2010 and then other dates of October 15, 1993. This mixture of dates clearly shows that these records are easily altered both purposely and inadvertently, particularly since these dates are driven by whatever date the computer saving them is set to.

Similarly, the Declarations of Mr. Smith, who is said to have developed the Netrek software, is inconsistent with the actual code. For instance, Mr. Smith refers to an 'aggregation buffer' and was adamant in his deposition that only one buffer existed in Netrek code. See, e.g., Smith Deposition at 138:20-139:20. According to Mr. Smith's Declaration, however, "[a]ll text messaging and game state updates were stored in the same aggregation buffer...". However, contrary to Mr. Smith's understanding, the Netrek code includes multiple buffers, with each buffer handling different data. This simply illustrates the unreliable nature of memory. It has to be understood that each of the Declarants identified that the Netrek software was frequently changed.

7. Response To Anticipation Rejection

A. Netrek

Even if one assumes, *arguendo*, that Netrek is prior art, Netrek uses a server-based game architecture and provides primitive techniques for communicating between players and the server. Netrek provided an incremental

improvement over a prior game called Xtrek. Instead of sending the exact screen image to be shown on the client's computer, it sends updated "player view" data, *i.e.,* the type and location of each object to be displayed on the player's screen. Player view data is generated by the server based on processing a player's action. The player view data for each player is then sent by the server to each client computer. Client (users') computers then simply rendered the player view data on the client computer screen.

Netrek altered the Xtrek architecture by moving the responsibility for rendering the graphics associated with game play to the client computers. Moving the rendering responsibilities to the client computers resulted in less data being transmitted over the network connecting players to the central server. Instead of sending exactly the graphics to be displayed, as Xtrek did, Netrek could simply send what objects existed in the client computer's view (*i.e.,* the player view data) and then have the client computer render its own display. This change reduced the amount of data that needed to be sent to client computers.

Even with this change, however, Netrek still used a server-based game architecture and set game state only on the central server. The central server also continued to perform the calculations which resulted from player actions using the server-located game engine. The data that was sent to players, instead of consisting of the graphical representation itself, consisted of what should be displayed. Software running on the clients' computers then created and rendered the graphical information.

In the Netrek architecture, players sent messages to the Netrek server. The messages contained player commands. The server received these commands and the game engine on the server performed calculations that resulted in updates to the state of the game. Messages sent by players could include commands to speed up their ship, to turn, to fire a torpedo, or to put up their shield for example. The game engine on the server would receive these commands and use them to update the state of the shared memory structure on the server in *interface.c.* The shared memory structure in the server computer maintained the state of the game. Separately, messages were sent to client computers in the form of graphical updates.

Graphical updates representing the new locations of objects viewable by the player (*i.e.,* player view data) were generated from the shared memory structure and would be sent to the players to update their screens. These graphical updates were not the command messages sent from the players, but were graphical update messages that told the client computer how the user's view of the game had changed. For example, if a player fired a torpedo, the server would generate multiple update messages regarding the torpedo's trajectory, one for each time the torpedo's location changed. See, for example, *daemonII.c.*

The Netrek architecture dictates the content of the messages sent from the central server to the client. Since no game state processing occurs on the client machines, the server in this architecture does not send command messages to clients. The client software is capable of receiving and handling only player view

data, *i.e.,* graphical data from the server— which tells it how to update the player's view of the game—not command data. The advantage of a server-based architecture like that used in Netrek was that there was only one game engine and it was located in only one computer (the server). Server-based architectures are generally less complex, more straightforward to implement, but they place greater burdens on the network because they have to send all the data needed to refresh a player's view of the game in each update.

The Netrek source code provided by the Requester includes two separate buffers in which the results of the game state calculations to be sent to users are placed. These two buffers correspond to the two types of connection protocols (TCP and UDP) used to send updates to the players. The two buffers are described in the file *socket. c,* at Lines 144-45 (declaring "buf" and "udpbuf") and also at Lines 900, 939 (*sendClientPacket,* writing from buffers "buf" and "udpbuf").

The file *socket.h* in the Netrek source code divides the client update messages into "critical," "semi-critical" and "non-critical" categories. *socket. c* at lines 911-78. An update message will be placed in either the TCP or UDP buffer depending on the category that the update message belongs to. The TCP buffer carries "critical" updates and text messages.

i. **Netrek Does Not Disclose Aggregation**

Netrek's server-based architecture does not teach the aggregation and transmission recitations of the '686 Patent. These recitations are not found in the Netrek code because the data items received from clients are not aggregated.

As described above, Netrek is a server-based architecture that sends player view data to client computers. Player view data are the type and location of each object on a player's screen. Player view data sent by a Netrek server consist of graphical data generated by the game engine and transmitted to players using the *updateClient()* routine in *socket.c*. Client command data are received from the clients in the *readFromClient()* routine in the same file. The structure of incoming and outgoing packets is defined in the file *packets.h*.

The structure of the packets that would be sent by the client to the server and that would be sent from the server to the client as described in *packets.h*. The "type" field identifies the type of packet. For this example, the client-to-server packet type is "cp_torp" indicating that the packet is a client torpedo packet. The server-to-client packet has type "sp_torp" indicating that the packet is a server torpedo packet. The "dir" field indicates the direction of the torpedo. In a client-to-server packet, this field contains the initial direction of the torpedo. In the 10-20 server-to-client packets that follow receipt of the client-to-server packet, the direction field contains the direction calculated by the game engine on the server. The Netrek game engine at the server calculates the track a torpedo takes as it follows its moving targets and calculates a new value of "dir" based on the moving target. This calculation is performed in *daemonII.c* at Lines 902-913. The "x" and "y" fields in the server-to-client packet are the location of the torpedo for the player's game screen as calculated by the server.

Client to Server Packet	Server to Client Packet

struct torp_cpacket {
char type; /*
CP_TORP */
uchar dir; /*
 	
direction to fire torp */
 	
};
	struct torp_spacket {
	char type; /*
	SP_TORP */
	uchar dir;
	
	short tnum;

The torpedo packet structure and the Netrek source code demonstrate what is typical of a server-based application. The data items in the packets that were sent from client computers and received at the server differ from the data items that were sent from the server to the client. What is sent from a client is a request to fire a torpedo. What comes back is a series of messages that indicate that there is a torpedo in a given location on a player's screen. As long as the torpedo is in the view of a particular player, that player will receive server-to-client packets updating the status of the torpedo. That is true despite the fact that the server has not received any information from a client regarding the torpedo other than the original command to fire the torpedo.

The *updateTorps()* is one example in *updateClient()* that demonstrates that Netrek does not perform the kind of aggregation described in the '686 patent and recited in the pending claims. The other "update" routines in *updateClient()* perform similar to *updateTorps()*. The complete list of update routines that are run in *updateClient()* include: *updateTorps(), updatePlasmas(), updateStatus(), updateSelf(), updatePhasers(), updateShips(), updatePlanets(),* and

updateMessages(). Therefore, none of the routines in *updateClient()* perform the kind of aggregation described in the '523 and '686 Patents.

Netrek also included various text messages. Some text messages originated with the players of the game and could be sent to individuals or to teams. Some text messages originated at the server and contained messages describing events occurring in the game. Examples of messages sent from the server appear throughout the Netrek code, including *orbit.c* ("Helmsman: Captain, the maximum safe speed for docking or orbiting is warp 2!") and *interface.c* ("Those aren't our men."). These messages do not fall within the requirement for aggregation because they do not originate from a client computer.

Even for text messages that do originate from a client computer, the Netrek source code does not plainly demonstrate that the text messages would have been aggregated during game play. Whether text messages would have been aggregated depends on a number of factors, including the frequency and amount of messages that are generated by the players, the bandwidth of the Netrek players' network connections, the congestion on the network between the players and the server and between the server and the players, the time interval between game updates (*i.e.*, the "game tick"), and on the timing of when two messages were received by the Netrek server.

The Netrek server sent updates to players every 0.2 seconds (*i.e.*, the "game tick"). This time period is defined in the file *data.c* with the variable *timerDelay*. The *intrupt()* function calls *updateClient()* in *socket.c* which handles updating the client

including text messages using the *updateMessages()* function. This process would have occurred whether or not there were any text messages to be sent to the client.

The Netrek source code by itself does not inform whether two or more text messages for any single recipient would have ever been aggregated. This would have depended on a variety of factors including that the text messages would have to arrive substantially (in the same 0.2 seconds), which is not possible for chat messages that are replying to each other in a chat, and that there was sufficient room in the buffer.

Unlike the data inputs used for clients to update their own game states, text messages in Netrek were not necessary to keep the game operating consistently on the multiple player computers. The Netrek server used data inputs to calculate the game state, and then provided graphics data from which the Netrek players rendered the state of game play on their computer screens. Players would take action resulting in command messages sent to the server based on the activity that appeared on their screens. If the Netrek server were to stop sending game state updates to a player, that player could no longer participate in the game even if that player were the only one playing the game.

Based on the source code, it cannot be determined whether the aggregation of text messages would occur in the course of a normal operation. For aggregation to have occurred in the Netrek source code, multiple messages sent by the players to a single client would need to be received by the Netrek server within the update

interval of 0.2 seconds. This occurrence is not a necessary result, but instead depends on a variety of factors such as the bandwidth of the players connection, the speed of the players' computer, the chance that multiple players send text messages destined for a single player, whether directly or by that player's team affiliation, within the 0.2 second update interval given that a review of the source code does not reveal whether this would have actually occurred, is respectfully submitted that packing text messages into a single payload is not inherent in the operation of the Netrek.

The Federal Circuit has explained that "[i]nherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient to establish inherency." Scaltec, 178 Fed. Cir. at 1384. Any assertion in this regard would be premised on just that probability and possibilities. Namely, two players would have to have sent a message destined for a third player and the timing, bandwidth and network effects all lined up to result in the message being added to the player's message buffer within the same 0.2 second window. Under the law of inherency, however, it must be established that "the natural result flowing from the operation of the process ... would necessarily result in aggregation. *Id.* (emphasis added). Source code does not show any such necessary result. In fact, many of the messages sent to players originate in Netrek server. Any packing of these messages would not be in "aggregation" within the scope of the present claims because these messages are not sent by a client computer.

ii. **Netrek Does Not Disclose the Reception of Create Messages**

Claims 1 and 3 of the '686 Patent require a "create message." The claims indicate that the create message specifies a message group to be created. Netrek did not support create messages because they were not necessary to the game. The groups in Netrek were predefined and coincided with the four teams that a player could join when the player joined the game. These teams included the Federation, Romulan, Orion, and Klingon teams. The four teams were defined by the source code in the client software in *newwin.c.* A player had to choose one of these four predefined teams or his choice would be rejected by the *getentry()* function in *getentry.c.* A player could not create new teams or any other message groups in Netrek.

A player's selection of one of the four predefined teams did not "create" the team because the shared memory for the teams had already been allocated in the *main()* routine of *daemonII.c* at lines 112-126. The memory allocation for the teams occurs at the startup of a Netrek game on a Netrek server when the first player connected to the Netrek server. The player's connection request commenced a startup process that called the *openmem()* function in *enter.c. openmem()* called the *startdaemon()* function in *startdaemon.c. startdaemon()* started *main()* routine in *daemonII.c,* which set up the shared memory structure including the four teams.

When a player initiated the process described in the preceding paragraph, the player was not required to specify any details regarding the game including the message groups or teams to be created. Instead, the player joins one of the four teams defined by the server, see the *entrywindow()* function in *newwin. c.* All game details were predefined in the Netrek source code as explained above. *Id.*

B. Suzuki et al.

Suzuki et al. is primarily concerned with connecting speech channels of two terminals corresponding to avatars that are identified as being within hearing distance in a virtual space. As stated above, Suzuki identifies a server-based game state system. More specifically, in Figures 1A and 1B, schematically illustrates a distributed connection type system, but there is no central server whatsoever. Therefore, this embodiment is not relevant.

With respect to Figures 2A and 2B, an example of a centralized connection type system is illustrated but the game state is clearly maintained on that server. As Suzuki explains, a terminal is unaware of information that is not provided by the server. For example, when a user uses a control device such as a joystick to generate a "move" instruction, the control device sends the new position information to the central server. Column 5, lines 34-49. Based on the new position information and predetermined conditions known to the server (such as distance and degree of eye-to-eye contact), the central server then tells the terminal what to display. Column 5, line 50, to column 6, line 21. As Suzuki explains, the server has sole responsibility for maintaining application state. Mayer-Patel Declaration, ¶ 55. Hence, Suzuki, like Netrek, is a server-based game state application in which the

server decides who gets information based not on any group concept but on its own individual processing of each client. To the degree audio messages are exchanged between avatars, again the server determines who receives the messages, does not create a message group, and does not keep a shared interactive application operating consistently on each of a plurality of host computers belonging to the message group. Hence, Suzuki fails for at least the same reasons that Netrek fails.

i. **Suzuki Does Not Meet the Claim Recitations**

With specific reference to claim 5, Suzuki therefore fails to implement "a shared, interactive application" using the method in which a host message contains a payload portion and a portion used to identify said message group server does not create message groups but rather determines who receives messages on a per user individualized basis.

Further, the messages do not keep the shared, interactive application operating consistently on each of a plurality of host computers because any command information is processed by the server and any audio file would not cause the shared interactive application to operate consistently on each of the hosts.

Claims 3 and 5 are also specifically discussed as having very similar language.

C. The Independent Claims

In this section, and in accordance with the conclusions drawn by Dr. Mayer-Patel (Exhibit A, paragraphs 61 *et seq.*), specific citation to claim language is used to show how the cited documents fail to anticipate the independent claims. Specifically,

contrary to the Office action, Netrek fails to anticipate independent Claims 1, 3, 7, 12, and 18. Furthermore Suzuki fails to anticipate claim 5.

Claim 1 includes the following steps not anticipated by Netrek:

> **(1) receiving a create message from one of the plurality of host computers, wherein said create message specifies a message group to be created;**

As described above and in Dr. Mayer-Patel's Declaration, Nettrek "teams" are not message groups created at the direction of the clients. The teams are statically defined by the server at the start of the game and are not created as a result of any message sent from any of the clients. This is true of claim 3 as well.

> **(2) receiving join messages from a first subset of the plurality of host computers, wherein each of said join messages specifies said message group;**

Although players do specify what team they would like to join, these teams are not message groups for the reasons described above and the teams are not created as a result of receiving a create message from a client. Again, claim 3 shares this distinction.

> **(3) receiving host messages from a second subset of said first subset of the plurality of host computers belonging to said message group, wherein each of said messages contains a payload portion and a portion that is used to identify said message group;**

Torpedo messages and other like messages sent to the server in order to update application state are not duplicated to other clients and do not include anything that identifies a message group. These messages are intended only for the

server and the recipients of the new messages that may happen to relate to torpedoes from the server are determined on an individual basis by the server. Claims 3, 7 and 18 have this distinction as well.

(4) aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload;

The payloads of torpedo messages and other like messages sent to the server are consumed by the server when processed in order to update application state. Subsequent messages from the server to the client are synthesized from the current application state and are not the result of aggregating payloads received. See, also claims 3 and 18.

(5) forming an aggregated message using said aggregated payload; and

Messages from the server to the client are synthesized from current application state and do not represent an aggregated message formed from an aggregated payload. Again, claim 3 has similar recitations. Claim 7 has recitations similar to steps 4 and 5 in its step 2.

(6) transmitting said aggregated message to said first subset of the plurality of host computers belonging to said message group;

Again, messages from the server to clients are synthesized from the current application state and do not represent an aggregated message. This is true of claims 3, 7 and 18.

wherein said aggregated message keeps the shared, interactive application operating consistently on each of said first subset of the plurality of host computers.

Because Netrek uses a centralized architecture, messages from the server to the clients are not necessary to keep the application operating consistently. Because the server is the only entity calculating and updating shared application state, the application is kept consistent by definition. Only messages from the clients to the server are able to affect this shared application state. Likewise, claims 3, 7 and 18.

Claim 12 includes the following steps not anticipated by Netrek:

(1) communicating with the plurality of host computers using the unicast network and maintaining a list of message groups, each message group containing at least one host computer;

Unlike Claim 1, Claim 12 does not require the step of receiving a create message from a client to create a message group. As such, one might consider teams within Netrek to be a type of message group only with respect to chat messages. . The recipients of message types such as torpedo messages are not based on message groups, but are determined individually by the server and can not be considered part of a message group with respect to these messages.

(2) receiving messages from a subset of the plurality of host computers, each host computer in said subset belonging to a first message group, wherein each of said messages contains a payload portion and a portion that is used to identify said first message group;

Any type of message other than chat messages does not include this step. Furthermore, this step would not be satisfied by any chat messages directed toward

an individual or a team other than the team associated with the chat message originator.

(3) aggregating said payload portions of said messages received from said subset of the plurality of host computers to create an aggregated payload;

The payload of message types other than chat messages (e.g., torpedo messages) are consumed by the server when processed to update application state. These payloads are not used to form outgoing messages from the server. The possibility that the contents of two chat messages are included in the same message from a server to a client is one of extreme coincidence as discussed above.

(4) forming an aggregated message using said aggregated payload; and

(5) transmitting said aggregated message to a recipient host computer belonging to said first message group.

See above with respect to Claim1 steps 5 and 6.

Claim 5 contains the following steps not anticipated by Suzuki:

(1) receiving a host message from one of the plurality of host computers belonging to a message group, wherein said host message contains a payload portion and a portion that is used to identify said message group;

As discussed above, recipients of the messages in the Suzuki system are determined on a per-user basis, not by message groups and, as a result, do not include a portion identifying message groups. This is because these messages are intended for the server in order to update application state maintained by the server.

Similarly, audio messages only contain audio data and do not contain a portion that identifies a message group.

> **(2) forming a server message using said payload portion of said host message;**
>
> **(3) transmitting said server message to each of the plurality of host computers belonging to said message group; and**
>
> **(4) suppressing said server message such that said one of the plurality of host computers which originated said host message does not receive said server message;**
>
> **wherein said server message keeps the shared, interactive application operating consistently on each of the plurality of host computers belonging to said message group.**

A server is present in the Suzuki system only when implemented as a centralized architecture. As such, messages transmitted from the server to the clients are not necessary to keep the application operating consistently. Consistent operation is achieved by the fact that the server is the sole entity responsible for calculating and updating shared application state. Only messages from clients to the server are able to affect this shared application state.

8. Response To Obviousness Rejection

Claims 1-6 stand rejected under 35 U.S.C. §103(a) as being obvious over Netrek in view of Van Hook. Van Hook was cited only for allegedly disclosing a predetermined time interval is a function of the rate that the messages are received from the subset of the plurality of host computers belonging to the first message group. The Patent Owner respectfully notes that Netrek, though there are other

strong distinctions and is not prior art, discloses a mechanism where the messages are sent out when the payload of the server message is full, but at least every 0.2 seconds. Hence, the disclosure of Van Hook about the same basic mechanism would not result in a variation or modification of Netrek.

9. Allowability of Newly Added Claims

Newly added claims 20-72 depend from independent claims 1, 12 and 18, and hence are allowable over the cited art for at least the same reasons discussed above in support of those claims.

CONCLUSIONS

As shown, neither Netrek nor Suzuki anticipates the claims because (1) the applied art is missing one or more claim elements, (2) Netrek is not prior art, and (3) there is no reason to combine Netrek with Van Hook.

In light of the foregoing, the Patent Owner respectfully requests reconsideration and allowance of all the pending claims. Should any residual issues exist or arise, the Examiner is invited to contact the undersigned at the number listed below.

The Director is hereby authorized to charge any appropriate fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: Monday, April 11, 2011 By: _____

Charles F. Wieland III
Registration No. 33096

Customer No. 21839
703 836 6620

CERTIFICATE OF SERVICE

It is hereby certified by the undersigned that a true copy of the foregoing **Amendment, Amendment Transmittal** and accompanying **Declaration of Dr. Ketan Mayer-Patel, Memorandum and Order** and **Order** were sent via e-mail to:

NOVAK DRUCE + QUIGG, LLP
(NDQ Reexamination Group)
1000 Louisiana Street
53rd Floor
Houston, Texas 77002

on this 11th day of April, 2011.

Charles F. Wieland III
Registration No. 33096

EXHIBIT A

DECLARATION OF KETAN MAYER-PATEL UNDER 37 CFR 1.132

Reexamination of U.S. Patent No. 6,226,686
Reexamination Control No. 90/011,036
Attorney Docket No. 0078494-000002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	**MAIL STOP REEXAMINATION**
U.S. Patent No. 6,226,686	Group Art Unit: 3992
Jeffrey J. Rothschild et al.	Examiner: Andrew Nalven
Issued: October 13, 1998	Confirmation No.: 1071
Reexamination Control No.: 90/011,036	
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

DECLARATION OF KETAN MAYER-PATEL UNDER 37 CFR 1.132

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

Sir:

I, Dr. Ketan Mayer-Patel, hereby state as follows:

I. INTRODUCTION

1. I have been retained as an independent expert witness by PalTalk Holdings, Inc., the Assignee of the Patent presently undergoing reexamination (i.e., U.S. Patent No. 6,226,686 (hereinafter "the '686 Patent")).

2. I have reviewed U.S. Patent No. 6,226,686 (Exhibit B, attached hereto), and I did not contribute to the invention described therein.

3. I am an expert in the field of networking protocols including networking protocols supporting multimedia streams including digital audio data. *See* Curriculum Vitae attached as Exhibit 1.

4. I received Bachelors of Arts degrees in Computer Science and Economics in 1992, a Masters of Science in 1997 from the Department of Electrical Engineering and Computer Science and a Ph.D. in 1999 from the Department of Electrical Engineering and Computer Science, all from the University of California, Berkeley.

5. I received the National Science Foundation CAREER Award in 2003 while an Assistant Professor at the University of North Carolina, Chapel Hill.

6. I have had extensive experience in both industry and academia as it relates to the technical fields relevant here. For example, I have been a programmer, a visiting researcher, and an Assistant and Associate Professor.

7. I am a co-author of numerous articles that have appeared in a number of referenced publications and proceedings.

8. Governmental agencies, such as the National Science Foundation and the Office of Naval Research, have provided funding for my research. I have also served on several NSF reviewing panels for funding recommendations.

9. I am an Associate Editor for both IEEE Transactions on Multimedia and ACM Transactions on Mutimedia Computing, Communications, and Applications, which are the two leading journals in the field.

10. I regularly serve as a member of the technical program committee for a number of different conferences and workshops including ACM Multimedia, The International Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV), IFIP Networking, ACM Multimedia Systems (MMSys), MMEDIA, and SIGMAP.

11. I am also currently co-chair of the standing executive committee for both NOSSDAV and MMSys.

II. RETENTION AND COMPENSATION

12. I have been retained to offer an expert opinion on the applied art relevant to the '686 Patent (and other patents currently under reexamination) and the patentability of the claims undergoing reexamination.

13. My work on this case is being billed at a rate of $480 per hour, with reimbursement for actual expenses and additional fees for travel. My compensation is not contingent upon the outcome of the case.

III. BASIS OF MY OPINION AND MATERIALS CONSIDERED

14. In preparation for this report, I have considered and relied on data or other documents identified in this report. For example, I have reviewed the Office Action dated February 10, 2011 as well as the Request for Reexamination that was filed for the '686 Patent, including several Exhibits to the Request for Reexamination. I have also reviewed the file history of the '686 Patent.

15. I have familiarized myself with the state of the art at the time the '686 Patent was filed by reviewing both patent and non-patent documents applied in the Office Action and the file histories of the '686 Patent and its related patent, U.S. Patent No. 5,822,523.

16. My opinions are also based upon my education, training, research, knowledge, and experience in this technical field.

IV. SUMMARY OF MY OPINIONS

17. Based on my prior experience in the field of computer systems and networking, including network communication protocols, and based on my review of the documents relating to the pending reexamination proceeding, I have developed an understanding of the '686 Patent and the claimed invention.

18. I have been asked to compare the claims of the '686 Patent to the documents applied in the outstanding Office Action. The results of my comparison are provided below.

Overview

19. My analysis begins by reviewing the basic characteristics of a shared distributed interactive application. I introduce the key concept of "application state" and what it means for this state to be consistent. I illustrate the differences between centralized and decentralized architectures and explain how the patent specifically addresses the challenges of a decentralized architecture. I also explain why messages from the server to a client are not relevant to keeping an application operating consistently in a centralized architecture.

20. In light of the fundamental differences between a centralized architecture and a decentralized architecture, the role of communication in each, and the benefits of a group message service as described in the '686 patent, I will analyze each of the three documents included in the Office action: Netrek, Suzuki, and Van Hook. I will show how Netrek and Suzuki are examples of centralized architectures and as such do not include and would not benefit from a group messaging service as described in the patent. I will also identify flaws in the analysis presented in the re-examination Request and show how this analysis mischaracterizes the role and content of messages in each of these systems.

21. Finally, I review each of the independent claims in the '686 patent and relate the analysis to the steps of these claims in order to show that these documents do not anticipate the claims of the patent.

Shared Distributed Interactive Applications

22. A shared distributed interactive application is a type of computer program in which a number of clients interact with each other within a shared context. One example of such an application would be a first-person shooter game set in a virtual world. In such an application, the users are the individual players and the shared context is the virtual world within which the game is set. Players interact with this application by performing actions that have meaning within the game such as moving and shooting.

23. A key concept within a shared distributed interactive application is the notion of "shared application state" (also known as "game state" if the application happens to be a game). Shared application state represents information about the application that must be maintained in order for the application to make sense. For example, in a game, this could include the position and speed of the various players and objects within the game. It is especially important that this shared application state be consistent with respect to each client, at least to the extent that each user can perceive and interact with that state. In other words, the interactions of different clients within the application must be interpreted with respect to a common understanding of the current state of the application. For example, if two avatars within a game are shooting at each other, the shooting action must be interpreted

with respect to a consistent understanding of the positions of the avatars and the results of the action (i.e., whether or not one or both of the avatars hit the other) must be consistent for both clients.

24. In addition to the shared application state, there may be "local" state information that is only pertinent to a particular client and is not important with respect to semantics of the application as a whole. For example, client interface preferences (e.g., size and location of various windows, rendering options, etc.) are part of a client's local state.

25. A shared distributed interactive application can be organized using one of two architectures: centralized or decentralized. In a centralized architecture, the shared application state is updated and maintained at a central location and clients receive a "render-only" representation of the state. In a decentralized architecture, each client is responsible for running its own game engine to translate its shared application state data into graphical information. These two architectures are fundamentally different. The difference is important because it imposes different requirements on the role of communication between clients within the application.

Centralized Architectures

26. Figure 1 illustrates a model architecture for a centralized shared distributed interactive application. The circles labeled Client A, Client B, Client C, and Client D represent clients of the application. The circle labeled Server represents the entity responsible for calculating and updating the shared application state. In a centralized architecture, shared application state is kept consistent because it is maintained and updated in only one place. Communication within this architecture is clearly divided into two types: messages from clients to the server and messages from the server to the clients.

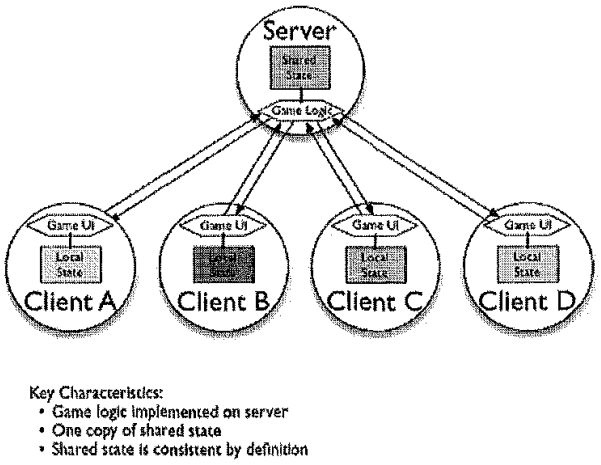


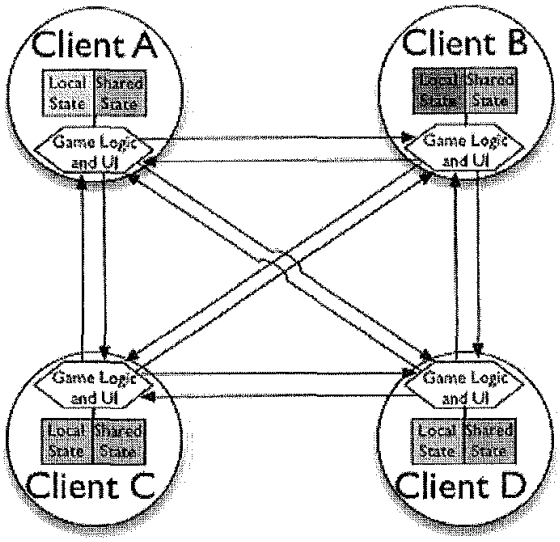
Figure 1. Model Architecture for a Centralized Shared Interactive Application

27. The payloads of client to server messages represent how the client wishes to interact with the application. These are processed by the server with respect to the logic of the application (i.e., what is allowed and how these interactions pertain to the current state of the application). The server then updates the shared application state as appropriate.

28. Messages from the server to the clients are used to communicate the current state of the application. These messages reflect the results of having processed the payloads received from the clients.

Decentralized Architectures

29. Figure 2 illustrates a general model for a decentralized architecture for a shared distributed interactive application. The circles labeled Client A, Client B, Client C, and Client D represent clients of the application.



Key Characteristics:
- Game logic implemented on each client
- Many copies of shared state
- Shared state must be actively kept consistent
- Clients must send/receive lots of messages to/from many others.

Figure 2. Model Architecture for a Decentralized Shared Interactive Application

30. In a decentralized architecture the shared state is maintained and updated by each of the clients. This means that all of the clients must learn about any interactions that occur that involve other clients and process these interactions with respect to the application logic and current application state. This processing may also have to deal with resolving any conflicting interactions. Because each client learns about and processes any interactions in the same way, each individual copy of the shared state is maintained and updated in a consistent manner.

31. In this model of a decentralized architecture, communication occurs between all of the clients. Each client is responsible for transmitting messages describing any interactions initiated by the local client that may affect the shared game state. Similarly, each client must be able to receive and process messages from any of the other clients. This need to both communicate any local interactions to other clients as well as to receive and process messages that report the interactions

from other clients presents a communications challenge that the invention of the '686 patent directly addresses.

32. One of these challenges is that in a unicast networking environment each client will need to send separate copies of each message to every other client. For example, with respect to Client A in Figure 2 this is represented by arrows from Client A to each of Client B, Client C, and Client D. Conversely, another challenge is that each client will have to receive and process the many messages sent to it from each of the other clients. With respect to Client A in Figure 2 the arrows that arrive at Client A from each of Client B, Client C, and Client D represent this. While this may be reasonable for a small number of clients, the situation becomes untenable as the number of clients involved grows.

33. The '686 patent describes a group communication service that specifically addresses the communication challenges of interactive applications that are organized with a decentralized architecture. Figure 3 illustrates a revised model architecture for a decentralized interactive application that takes advantage of the patented group messaging service. In this figure, a new entity labeled Server has been introduced to represent the group messaging service described by the patent.

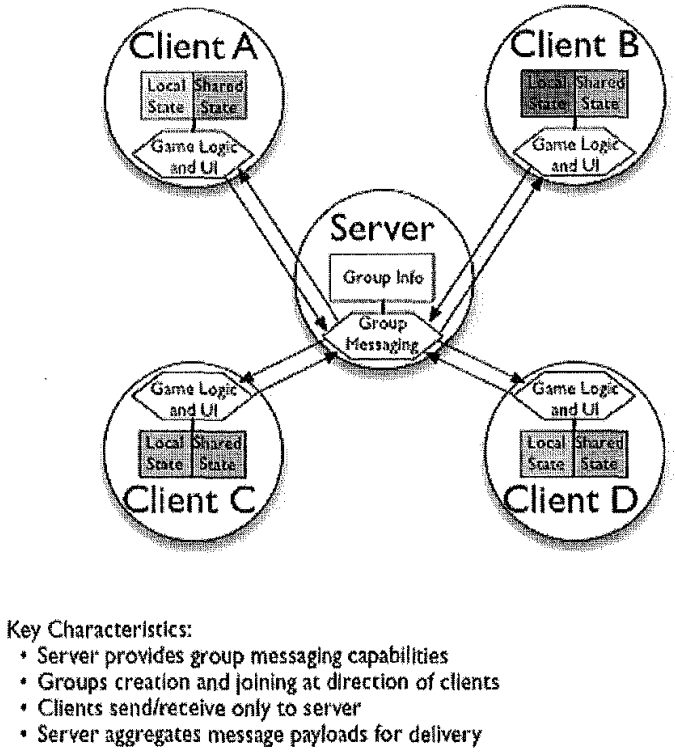


Figure 3. Model Architecture for a Decentralized Shared Interactive Application Using the '686 Patent

34. The purpose of the group messaging service is to allow clients to more efficiently exchange the messages required to maintain and update the shared application state. The group messaging server may, but need not, maintain or update the shared application state. The clients have responsibility for interpreting messages and updating the application state. Instead, the group messaging service allows the clients to organize themselves into groups that facilitate the exchange of message payloads that would otherwise have to be sent directly from client to client

35. Clients are able to create and join groups dynamically as needed. Once a group has been formed, a client can distribute a message payload to all of the group members simply by sending the message once to the group messaging service along with some indication of which group the message should be distributed

to. The group messaging service maintains which clients are in which groups and is responsible for sending a copy of the message payload to each of the group members in turn. This lessens the burden on clients by allowing participating clients to only receive information that is pertinent to the portion of the shared game state that the particular client can perceive and affect. Furthermore, when multiple clients send messages to the same group simultaneously or nearly simultaneously, the group messaging service is able to aggregate these messages into a single aggregate payload for distribution to each of the members.

36. The advantage of using the group messaging service described by the patent is to simplify communication at the client and improve communication efficiency. Each client now only needs to send its messages to the group messaging service. This frees the client from having to send a message to each of the other clients separately. In Figure 3 with respect to Client A this is illustrated by the single arrow between Client A and the Server. Similarly, instead of having to process individual messages received from each of the other clients, the use of the group messaging service allows a client to receive from the group messaging service a single aggregate payload comprised of messages from a multitude of other clients. In Figure 3 with respect to Client A this is illustrated as the single arrow from the Server to Client A. Once received, the individual payloads that comprise the aggregate payload can be unpacked and processed to update the local copy of the shared application state.

Netrek

37. Netrek is an interactive multiplayer game based on the Star Trek science fiction television series. The Netrek software includes a client that renders the game for the user and accepts input from the user and a server that maintains the shared game state.

38. Most messages from the client to the server describe requests on behalf of the client for interactive actions such as firing torpedoes. The server processes these messages in order to update the shared game state. Additionally, some messages from the client to the server are requests to send auxiliary chat messages to other clients. The chat content of these messages are also processed

by the server and possibly redistributed to other clients, but do not affect the shared game state necessary to keep the application operating consistently. In fact, chat messages that are delivered to other clients are not processed by the game engine at all.

39. Messages from the server to the client communicate the current state of the application so that the client can update the interface presented to the user. These messages can be thought of as high-level graphical descriptions of what to render at each client.

40. Netrek is clearly organized according to a centralized architecture. As such, the shared application state is kept consistent by the very fact that only the Netrek server maintains and updates this information. The server processes the payloads of messages from the clients to the server that affect the state of the game. These payloads are not intended for redistribution to the other clients and doing so would not serve to keep the application in a consistent state. Similarly, the server synthesizes messages sent to the clients in order to represent a "read-only" description of the current graphical state of the game for purposes of rendering the game to the user. The individual clients do not interpret these messages with respect to game logic nor do they maintain or update shared application state.

The analysis presented in the re-examination request that is included by reference in the office action severely mischaracterizes the role of communication in Netrek and the contents of messages exchanged between the clients and the server. This analysis identifies and analyzes only two specific types of messages in the game: torpedo messages and chat messages. As noted before, torpedo messages represent interactions that require the server to update shared game state necessary for consistent operation while chat messages do not. This is an important distinction that is not recognized by the presented analysis. I identify specific flaws in the analysis below.

NetTrek "teams" are not message groups created at the direction of the clients.

41. Independent claims 1 and 3 of '686 patent both include a step that requires a specific create message from the client to the group messaging service

that specifies a message group to be created. The re-examination analysis points specifically to the function getEntry in Server\ntserv\getentry.c as performing the step of receiving the create message and to line 325 of main.c which calls the function enter as performing the step of creating the group. Specifically, the analysis claims, "The create message specifies which team the player wishes to create," and that, "the call to function enter creates the team that the player specifies in the create message."

42. This analysis is fundamentally flawed because the "teams" that are referred to are in fact already in existence and are statically defined within the game. In other words, there is no ability for players to create new teams other than the ones already built into the game. This is clearly demonstrated by the fact that the getEntry function contains, on lines 125-130 of Server\ntserver\getentry.c, code that specifically checks the choice of team to be within a specific range of 4 values. Furthermore, while the function enter creates and initializes data structures that relate to this player and his specific choice of existing teams, it does nothing to create or initialize any data structures related to the team as a whole (i.e., it does not do anything to create the team). This is because the teams have already been defined.

43. The analysis also states that message groups can be defined by proximity to other players in the game, referencing data structures maintained for each player that keeps track of the player's position within the game. This line of analysis does not make sense with respect to the enter function which the analysis points to as performing the step of creating the message group. The message received by the getEntry function does not indicate position information and the entry function does not create anything analogous to a message group based on player position. In fact, the entry function initializes the player's position information randomly (lines 106-107 in entry.c).

Torpedo messages do not include a portion that identifies a message group.

44. Throughout the presented analysis, torpedo messages are characterized as identifying a message group by virtue of including direction information that the server then uses to determine which other players will need to know about this particular torpedo. This line of reasoning is flawed for several reasons. First, the direction information in the torpedo message by itself is not sufficient to identify a group of players. The direction of the torpedo simply does not correspond to any data structure or grouping on the Netrek server that could be characterized as a message group. Second, the group of affected players is not a message group that was created by a prior create message thus failing to satisfy the message group creation step specified in claims 1 and 3. Third, a player affected by the torpedo does not specifically send a join message to be included in the group of players informed about the torpedo, a step specifically present in claims 1 and 3.

Torpedo messages do not include a payload that is aggregated within a message from the server to the client.

45. Torpedo messages from the client to the server are in fact messages intended for the server and are processed only by the server to update the shared game state maintained at the server. The data structure corresponding to a torpedo message is defined on lines 529-534 of packets.h. In this data strcture, a torpedo message is comprised of two one byte values: type and dir.

46. The type byte is used in the doRead function defined in socket.c in order to determine the appropriate handler needed to process an incoming message as a torpedo message. For torpedo messages, the type byte is set to the value 6 (line 104, packets.h) and the associated handler is a function called handleTorpReq. This handler's only purpose is to invoke the ntorp function defined torp.c. In doing so, it sends in the dir byte from the torpedo message as a parameter.

47. The ntorp function is where the dir byte is processed and the game state updated to reflect the results of the torpedo message. Included in this processing is checking whether or not the player is allowed to fire the torpedo (e.g., a torpedo is not allowed to be fired if the player's ship is "cloaked" or does not have enough fuel). If the torpedo is allowed, appropriate structures kept as part of the

game state are initialized using the direction information combined with currently known information about the player's position.

48. After ntorp completes, the dir byte from the torpedo message has been fully processed and is no longer needed. At no time was the dir byte copied to the payload of an aggregate message to be transmitted to other clients. The presented analysis suggests that this occurs in the function updateTorps function in socket.c. This function, however, is not called when the torpedo message is processed nor does it in any way use the payload dir byte from a torpedo message. Instead, updateTorps is used to construct and transmit a render-only graphical message to the clients for rendering. This outgoing message contains information derived from the game state and does include direction information associated with the torpedo. This direction information, however, is not the same direction information delivered in the payload of the torpedo message from the client to the server. Instead, the server alters the direction information randomly over time in order to create a "wobbling" effect (line 1218, daemonII.c).

49. Another major flaw in the presented analysis is that if the direction information is supposed to play the role of the message portion that identifies a message group as the analysis claims, then there is no other part of the message to play the role of the payload portion to be aggregated as required by the patent. There simply is no other data in the message other than the dir byte. This further reinforces the fact that torpedo messages do not include a payload that is aggregated within a message from the server to the client.

Chat messages distributed to clients have no relevance to the consistent operation of the game.

50. Because Netrek uses a centralized architecture, all of the application state that is necessary for consistent operation of the game is maintained and updated on the server. The contents of chat messages received by the server and distributed to clients are not used to update this state information and thus are not relevant to the consistent operation of the game.

The inclusion of two or more separate chat messages in a message from the server to the client is a matter of extreme coincidence.

51. The Netrek server generates and transmits a representation of the current application state suitable for rendering the game to each client every 200ms. This representation is synthesized from the maintained application state and as such is not an aggregation of payloads sent from the clients, but is instead an original message constructed by the server. Such a message may include chat messages that have arrived since the last transmission and that need to be distributed. For two such chat messages to occupy space in the same server message requires that the messages arrive nearly simultaneously, which seems improbable given that there are only 4 players on a team and only four teams in Netrek. Because chat messages are produced at relatively long human timescales on the order of many seconds or even minutes and because chat messages are not important for the consistent operation of the application, the near simultaneous arrival of two different chat messages is a matter of coincidence and not a key feature of how the application communicates to the client.

Suzuki

52. Suzuki describes an avatar-based virtual world system. Users interact with the application by controlling the position and gaze direction of their avatars within the world. Additionally, users are able to talk to other users by providing audio data. The proximity and gaze direction of other avatars determines which users can be heard.

53. In describing the system, Suzuki explicitly recognizes that the system can be organized using either a centralized or decentralized architecture (Col 4, lines 38-40). Furthermore, Suzuki specifically recognizes that the primary difference between the two architectures is that in a decentralized system, data is sent from each client to all of the other clients directly in order to maintain application state at each client while in a centralized system, data is sent to and from a server that maintains and updates the application state (Col 4, lines 40-67, Col 5, lines 1-8).

54. The analysis presented in the re-examination request only refers to the centralized architecture. The same general arguments presented in the above

discussion about the role of communication in a centralized architecture apply here as well. In particular, outgoing messages from the server to the client are "render-only" data meant to inform the clients of the current application state in order to render the world (both visually and sonically), but are not necessary for the consistent operation of the application. Because the server has sole responsibility for calculating application state, only messages sent to the server can affect this state and are important for consistent operation.

55. Two different types of messages are described in the Suzuki system: move messages and audio messages. Move messages are messages from clients to the server that indicate where an avatar is within the virtual world as well as gaze direction. Audio messages contain audio data representing what an avatar is saying. The server uses the current application state in order to derive which avatars are within earshot of other avatars and to then mix the audio data as appropriate.

56. The presented analysis mischaracterizes the role of communication in the Suzuki system and the content of messages sent to and from the server. Flaws in the analysis include:

Messages with position information do not contain a portion that identifies a message group.

57. Move messages are described in Suzuki at Col 6, lines 40-43. The components of a move message are listed as, "an avatar identifier AID, a message identifier MID, a space identifier SID, a coordinate value COV, the direction of eyes ED and a state flag SFLG." None of these components play the role of identifying a message group. Instead, the server processes the position information to maintain the application state and to determine which avatars are within view and earshot of each other. Additionally, the server does redistribute the position information to all of the other clients so that each can appropriately render their user's view. However, this information is given to all other clients regardless of the contents of the move message. No part of the move message is needed to identify which clients should receive this information. Thus, no part of the move message plays the role of identifying a message group.

Messages with audio information do not contain a portion that identifies a message group.

58. When the server in the Suzuki system receives audio messages from a client, the server redistributes the audio information for rendering to those clients with avatars within earshot. The server uses prior move messages to maintain application state about avatar proximity and viewpoints. Thus, the server derives the identities of clients that should receive the audio data from this application state information. The audio message is not directed to a "group" at all. The server determines the recipients of the audio information on an ad hoc basis without any reference to any group membership.

Van Hook

59. Van Hook is only used in combination with Netrek and applied only to dependent claims 11 and 17. The apparent purpose of combining Van Hook with Netrek with respect to these claims seems to be for the concept of a pre-determined time interval for aggregating payloads by the group message service. However, since Netrek already includes a timing mechanism by which messages from the server to the clients are generated and sent periodically, this combination is redundant. Furthermore, because Netrek does not anticipate the steps of the independent claims 7 and 12 upon which claims 11 and 17 ultimately depend, the combination of Netrek and Van Hook is moot.

The Independent Claims

60. In this section, I show how the cited documents fail to anticipate each the independent claims. Specifically, contrary to the Office action, Netrek fails to anticipate independent Claims 1, 3, 7, 12, and 18. Furthermore Suzuki fails to anticipate claim 5.

61. Claim 1 includes the following steps not anticipated by Nettrek:

> **(1) receiving a create message from one of the plurality of host computers, wherein said create message specifies a message group to be created;**

62. As I described above, Nettrek "teams" are not message groups created at the direction of the clients. The teams are statically defined by the server at the start of the game and are not created as a result of any message sent from any of the clients.

(2) receiving join messages from a first subset of the plurality of host computers, wherein each of said join messages specifies said message group;

63. Although players do specify what team they would like to join, these teams are not message groups created as a result of receiving a create message from a client.

(3) receiving host messages from a second subset of said first subset of the plurality of host computers belonging to said message group, wherein each of said messages contains a payload portion and a portion that is used to identify said message group;

64. Torpedo messages and other like messages sent to the server in order to update application state do not include anything that identifies a message group. These messages are intended only for the server and consumed by the server.

(4) aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload;

65. The payloads of torpedo messages and other like messages sent to the server are consumed by the server when processed in order to update application state. Subsequent messages from the server to the client are synthesized from the current application state and are not the result of aggregating payloads received.

(5) forming an aggregated message using said aggregated payload; and

66. Messages from the server to the client are synthesized from current application state and do not represent an aggregated message formed from an aggregated payload.

(6) transmitting said aggregated message to said first subset of the plurality of host computers belonging to said message group;

67. Again, messages from the server to clients are synthesized from the current application state and do not represent an aggregated message.

wherein said aggregated message keeps the shared, interactive application operating consistently on each of said first subset of the plurality of host computers.

68. Because Netrek uses a centralized architecture, messages from the server to the clients are not necessary to keep the application operating consistently. Because the server is the only entity calculating and updating shared application state, the application is kept consistent by definition. Only messages from the clients to the server are able to affect this shared application state.

69. Claim 3 includes the following steps not anticipated by Netrek:

(1) receiving a create message from one of the plurality of host computers, wherein said create message specifies a message group to be created;

70. See above with respect to step 1 of Claim 1.

(2) receiving join messages from a first subset of the plurality of host computers, wherein each of said join messages specifies said message group;

71. See above with respect to step 2 of Claim 1.

(3) receiving host messages from a second subset of said first subset of the plurality of host computers belonging to said message group, wherein each of said messages contains a payload portion and a portion that is used to identify said message group;

72. See above with respect to step 3 of Claim1.

(4) aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated message;

73. See above with respect to steps 4 and 5 of Claim 1.

(5) transmitting said aggregated message to said first subset of the plurality of host computers belonging to said message group;

74. See above with respect to step 6 of Claim 1.

wherein said aggregated message keeps the shared, interactive application operating consistently on each of said first subset of the plurality of host computers.

75. See above with respect to the wherein clause of Claim 1.

76. Claim 7 includes the following steps not anticipated by Netrek:

(1) receiving messages from a subset of the plurality of host computers belonging to a message group, wherein each of said messages contains a payload portion and a portion that is used to identify said message group;

77. See above with respect to step 3 of Claim 1.

(2) aggregating said payload portions of said messages to create an aggregated payload; and

78. See above with respect to steps 4 and 5 of Claim 1.

(3) transmitting said aggregated message to each of the plurality of host computers belonging to said message group;

79. See above with respect to step 6 of Claim 1.

wherein said aggregated message keeps the shared interactive application operating consistently on each of the plurality of host computers belonging to said message group.

80. See above with respect to the wherein clause of Claim 1.

81. Claim 12 includes the following steps not anticipated by Netrek:

(2) receiving messages from a subset of the plurality of host computers, each host computer in said subset belonging to a first message group, wherein each of said messages contains a payload portion and a portion that is used to identify said first message group;

82. Any type of message other than chat messages does not include this step. Furthermore, this step would not be satisfied by any chat messages directed

toward an individual or a team other than the team associated with the chat message originator.

(3) aggregating said payload portions of said messages received from said subset of the plurality of host computers to create an aggregated payload;

83. The payload of message types other than chat messages (e.g., torpedo messages) are consumed by the server when processed to update application state. These payloads are not used to form outgoing messages from the server. The possibility that the contents of two chat messages are included in the same message from a server to a client is one of extreme coincidence as discussed above.

(4) forming an aggregated message using said aggregated payload; and

(5) transmitting said aggregated message to a recipient host computer belonging to said first message group.

84. See above with respect to Claim1 steps 5 and 6.

85. Claim 18 contains the following steps not anticipated by Netrek:

(1) receiving a host message from one of the plurality of host computers belonging to a message group, wherein said host message contains a payload portion and a portion that is used to identify said message group;

86. See above with respect to Claim 1 step 3.

(2) forming a server message by using said payload portion of said host message; and aggregating said payload portion with the payload portion of a second host message received from another of the plurality of host computers belonging to said message group;

87. See above with respect to Claim 1 step 4.

(3) transmitting said server message to each of the plurality of host computers belonging to said message group;

88. See above with respect to Claim 1 step 6.

whereby said server message keeps the shared, interactive application operating consistently on each of the plurality of host computers belonging to said message group.

89. See above with respect to the wherein clause of Claim 1.

90. Claim 5 contains the following steps not anticipated by Suzuki:

(1) receiving a host message from one of the plurality of host computers belonging to a message group, wherein said host message contains a payload portion and a portion that is used to identify said message group;

91. As discussed above, messages in the Suzuki system do not contain a portion that identifies a message group. The audio message is not directed to a "group" at all. The server determines the recipients of the audio information on an ad hoc basis without any reference to any group membership. This is because these messages are intended for the server in order to update application state maintained by the server. Similarly, audio messages only contain audio data and do not contain a portion that identifies a message group.

(2) forming a server message using said payload portion of said host message;

(3) transmitting said server message to each of the plurality of host computers belonging to said message group; and

(4) suppressing said server message such that said one of the plurality of host computers which originated said host message does not receive said server message;

wherein said server message keeps the shared, interactive application operating consistently on each of the plurality of host computers belonging to said message group.

92. A server is present in the Suzuki system only when implemented as a centralized architecture. As such, messages transmitted from the server to the clients are not necessary to keep the application operating consistently. Consistent operation is achieved by the fact that the server is the sole entity responsible for calculating and updating shared application state. Only messages from clients to the server are able to affect this shared application state.

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.

4/11/2011

Date

Dr. Ketan Mayer-Patel

Ketan Mayer-Patel

154 Fred Brooks Building
Department of Computer Science, CB #3175
University of North Carolina, Chapel Hill

kmp@cs.unc.edu
http://www.cs.unc.edu/~kmp

Education

Ph.D. University of California, Berkeley, 1999
Parallel Software-only Video Effects Processing

M.S. University of California, Berkeley, 1997
Design and Performance of the Berkeley Continuous Media Toolkit

B.A. University of California, Berkeley, 1992
Majors: Computer Science and Economics

Professional Experience

Associate Professor
University of North Carolina, Chapel Hill, NC (August 2005 – present)

Assistant Professor
University of North Carolina, Chapel Hill, NC. (January 2000 – August 2005)

Visiting Researcher
Microsoft Bay Area Research Center (BARC), San Francisco, CA. (June 2003 – December 2003)

Graduate Student Researcher
University of California, Berkeley, CA. (June 1993 – November 1999)

Graduate Student Instructor
University of California, Berkeley, CA. (August 1997 – December 1997)

Programmer
University of California, Berkeley, CA. (June 1992 – June 1993)

Programmer
United States Department of Agriculture, Albany, CA. (May 1991 – June 1992)

Honors and Notables

- National Science Foundation CAREER Award, 2003
- Computer Science Student Association Teaching Award, 2003
- Invited to three major meetings (one domestic and two international) of top multimedia researchers to discuss future directions for the field.
- Associate Editor for both leading journals in the field of multimedia computing (IEEE Transactions on Multimedia and ACM Transactions on Multimedia Computing, Communications, and Applications).
- Standing executive committee member for the MMSys Conference and NOSSDAV workshop.

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K. Mayer-Patel and L.A. Rowe, "Exploiting temporal parallelism for software-only video effects processing," *Proceedings of the 6th International ACM Conference on Multimedia*, Bristol, England, 1998, pp. 161-169.

T.H. Wong, K. Mayer-Patel and L.A. Rowe, "A software-only video production switcher for the Internet MBone," *Proceedings of the SPIE conference on Multimedia Computing and Networking*, vol. 3310, San Jose, CA, 1998, pp. 28-41.

K. Mayer-Patel and L.A. Rowe, "Design and performance of the Berkeley Continuous Media Toolkit," *Proceedings of the SPIE conference on Multimedia Computing and Networking*, vol. 3020, San Jose, CA, 1997, pp. 194-206.

K. Mayer-Patel, D. Simpson, D. Wu, and L.A. Rowe, "Synchronized continuous media playback through the World Wide Web," *Proceedings of the 4th International ACM Conference on Multimedia,* Boston, MA, 1997, pp. 435-436.

L.A. Rowe, K. Patel, and B. Smith, "MPEG video in software: representation, transmission, and playback," *Proceedings of the SPIE conference on High-Speed Networking and Multimedia Computing*, vol. 2188, San Jose, CA, 1994, pp. 134-144.

K. Patel, B. Smith, and L.A. Rowe, "Performance of a software MPEG video decoder," *Proceedings of the 1st International ACM Conference on Multimedia,* Los Angeles, CA, 1993, pp. 75-82.

Teaching

COMP 416: Introduction to Web Programming

My goal with this course is to pique student interest for more detailed upper-division courses in operating systems, networking, databases, security, etc. while satisfying their practical interest in developing web programming skills.

COMP 426: Advanced Web Programming
A follow-on course to COMP 416, this course expands on client-server programming concepts and concentrates more attention to the design and use of databases and XML-related technologies.

COMP 249: Multimedia Computing and Networking
This course is an advanced graduate-level course that covers the fundamental concepts in multimedia computing and networking. Students are expected to complete an extensive final project, some of which have led to publications in refereed conferences and workshops.

COMP 249-080: Topics in Multimedia Systems
This seminar course provides students with an opportunity to read and present the most research literature in multimedia systems.

Research Areas

Encoding and Transmission of 3D Scenes from Multiple Cameras
The project explores ways to efficiently transmit video data from a set of cameras viewing the same scene. This problem is at the heart of most tele-immersion applications. Our hypothesis is that it is possible to exploit depth information (even if imperfect) derived from stereo correlation between cameras to more efficiently encode the original color information.

Recoverable Video Adaptation
Existing video adaptation techniques generally lead to irreversibly loss of video quality. In this project, we are exploring adaptation techniques that can be used to recover high (or at least higher) quality video from a set of independently constructed lower quality representations.

Supporting the DVR Nation
Prior approaches for supporting distributed caching of multimedia data (i.e., video) rely on centralized control and allocation of resources to support optimizing for a global performance objective (i.e., reduced server load, maximized revenue, etc.). If distributed caches are independently managed to optimize for the utility of local users (e.g., a network of digital video recorders associated with independent households) an entirely different approach that creates incentives for sharing among peers is required.

Streaming for Machine Vision
Existing video compression and streaming techniques assume that the ultimate consumer of the video data is human. This central assumption is fundamental to all of the design choices at the heart of these mechanisms. If instead the video is intended to be processed by a machine vision algorithm (e.g., face detection as part of an automated surveillance system),

these design choices must be revisited and new techniques must be developed to address challenges specific to the machine vision domain.

Streaming for Visualization
High-performance scientific simulations are an essential tool for scientists investigating a number of real-world problems including molecular structure, high-energy physics, and climate modeling to name a few. These applications run on super computers and produce huge amounts of data. Scientists require a way to remotely and interactively visualize the data as part of their scientific process. We are developing a framework that allows for integrated model and view streaming in support of remote visualization for this domain.

Funding

CAREER: Enabling Futuristic Distributed Applications with Integrative Multistream Networking
PI's: K. Mayer-Patel
Agency: National Science Foundation (ANI-0238260)
Amount: $404,387
Duration: 8/15/2003 – 8/14/2008

ITR: Protocol Coordination for Multi-Stream Applications
PI's: K. Mayer-Patel
Agency: National Science Foundation (ANI-0219780)
Amount: $368, 047
Duration: 10/1/2002 – 9/30/2005

RI: Tera-Pixels - Using High-Resolution Pervasive Displays to Transform Collaboration and Teaching
PI's: K. Jeffay, A. Lastra, F.D. Smith, K. Mayer-Patel and L. McMillan
Agency: National Science Foundation (EIA-0303590)
Amount: $590,986
Duration: 8/15/2003 – 8/14/2008

3D Telepresence for Medical Consultation: Extending Medical Expertise Throughout, Between, and Beyond Hospitals
PI's: H. Fuchs, B. Cairns, K. Mayer-Patel, D. Sonnenwald, G. Welch
Agency: National Library of Medicine
Amount: $2,549,980
Duration: 09/30/2003-09/29/2006

Video-Based Representation and Rendering of Large Real and Synthetic Environments
PI's: D. Manocha and K. Mayer-Patel
Agency: Office of Naval Research
Amount: $112,384
Duration: 01/01/2001-12/31/2003

Video Quality Metric Oracle

PI's: K. Mayer-Patel
Agency: North Carolina Networking Initiative Fellowship Program
Amount: $20,000
Duration: 08/15/2001 – 5/15/2002

SCOUT: An On-Line Network Path Measurement and Characterization Tool
PI's: K. Mayer-Patel
Agency: North Carolina Networking Initiative Fellowship Program
Amount: $20,000
Duration: 08/15/2000 – 5/15/2001

Professional Activities

Editorships

- Associate Editor, ACM Transactions on Multimedia Communications, Computing, and Applications (TOMCCAP)
- Associate Editor, IEEE Multimedia Magazine

Executive Committees

- Co-Chair, International Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV)
- ACM Multimedia Systems (MMSys)

Organizing Committees

- General Co-Chair, ACM Multimedia Systems 2011
- Program Chair, ACM Multimedia Systems 2010
- General Co-Chair, Multimedia Networking and Computing 2009
- Program Co-Chair, Multimedia Modeling (MMM) 2009
- General Co-Chair, NOSSDAV 2005
- Program Co-Chair, ACM Multimedia, 2006
- Open Source Software Competition Chair, ACM Multimedia (2004, 2005)
- Tutorial Program Chair, ACM Multimedia (2003)
- Doctoral Symposium Chair, ACM Multimedia (2000, 2001)

Program Committees

- ACM Multimedia
- NOSSDAV
- Multimedia Computing and Networking (MMCN)
- Multimedia Interactive Protocols and Systems Workshop
- IFIP Networking Conference
- Multimedia Information Systems Conference
- International World Wide Web Conference
- SPIE Conference on Multimedia Computing and Networking
- IEEE International Conference on Distributed Computing Systems
- Interactive Distributed Multimedia Systems Workshop
- Global Internet Symposium

Other Professional Service

- Guest Editor, Special Issue of Multimedia Systems Journal featuring expanded papers from the SPIE Conference on Multimedia Computing and Networking, 2003.
- In 2004, participated in a by invitation-only meeting of leaders within ACM SIGMultimedia. A report of the meeting outlining important directions for multimedia research will appear in Transactions on Multimedia Computing, Communications, and Applications.
- Invited to an international meeting of leading multimedia researchers being organized for Spring 2005 in Dagstuhl, Germany to discuss the future of multimedia research.

Past Ph.D. Students

- David Gotz, *Supporting adaptive scalable access to multiresolutional multidimensional data,* May 2005.
- David Ott, *Coordination mechanisms for distributed multistream applications*, November 2005.
- Sang-Uok Kum, *Encoding and transmission of 3D depth streams*, November 2008.

University Service

University Committees

- Tar Heel Bus Tour Advisory Committee (Fall 2001).

Department Service

- Chair of Undergraduate Curriculum Committee (Fall 2009 – present).
- Member of Undergradate Advising Committee (Fall 2009 – present).
- Chair of Graduate Admissions Committee (Spring 2005 – Fall 2009).
- Member of Graduate Admissions Committee (Spring 2001 – present).

Other Service

- Project UPLIFT participant (recruitment of minority high school students)
- Co-coach of the UNC ACM Programming Competition team (Fall 2000 – present).

EXHIBIT B

MEMORANDUM OPINION AND ORDER

Reexamination of U.S. Patent No. 6,226,686
Reexamination Control No. 90/011,036
Attorney Docket No. 0078494-000002

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PALTALK HOLDINGS, INC.	§	
	§	
vs.	§	CASE NO. 2:09-CV-274-DF-CE
	§	
SONY COMPUTER ENTERTAINMENT AMERICA, INC., ET AL.	§	
	§	

MEMORANDUM OPINION AND ORDER

I. OVERVIEW OF THE PATENTS AND TECHNOLOGY

In 2002, plaintiff PalTalk purchased U.S. Patent Nos. 5,822,523 (the "'523 Patent") and 6,226,686 (the "'686 Patent") (collectively the "PalTalk Patents). The PalTalk Patents are related. The application for the '523 Patent was filed on February 1, 1996. The application for the '686 Patent was filed on September 28, 1999 as a continuation of U.S. Patent No. 6,017,766 ("the '766 Patent"), which itself is a continuation of the '523 Patent. The '523, '766, and '686 Patents all share the same specification. Therefore, references to the written description of PalTalk Patents will generally be limited to the '523 Patent.

The PalTalk Patents are both titled "Server-Group Messaging System for Interactive Applications." The PalTalk Patents describe a system for reducing both the network load and the message processing requirements that arise because of network communications in a multi-user interactive application. The system reduces the load by using a group messaging server ("GMS") as a central destination for messages between host computers. The GMS is responsible for tracking groups and group membership. The GMS may further reduce the load on the network by aggregating the messages that it receives from a particular host computer.

Aggregation allows more efficient data communication by reducing the number of messages that a recipient host must process. In one of its key applications—online gaming—the GMS allows for more efficient communication of large amounts of information between players, thus enabling games to become quicker.

Claim 1 of '523 Patent recites:

> A method for providing group messages to a plurality of host computers connected over a unicast wide area communication network, comprising the steps of:
>
> > providing a group messaging server coupled to said network, said server communicating with said plurality of host computers using said unicast network and maintaining a list of message groups, each message group containing at least one host computer;
> >
> > sending, by a plurality of host computers belonging to a first message group, messages to said server via said unicast network, said messages containing a payload portion and a portion for identifying said first message group;
> >
> > aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload;
> >
> > forming an aggregated message using said aggregated payload; and
> >
> > transmitting, by said server via said unicast network, said aggregated message to a recipient host computer belonging to said first message group.

Claim 1 of the '686 Patent recites:

> A method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of:
>
> > (1) receiving a create message from one of the plurality of host computers, wherein said create message specifies a message group to be created;

(2) receiving join messages from a first subset of the plurality of host computers, wherein each of said join messages specifies said message group;

(3) receiving host messages from a second subset of said first subset of the plurality of host computers belonging to said message group, wherein each of said messages contains a payload portion and a portion that is used to identify said message group;

(4) aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload;

(5) forming an aggregated message using said aggregated payload; and

(6) transmitting said aggregated message to said first subset of the plurality of host computers belonging to said message group;

wherein said aggregated message keeps the shared, interactive application operating consistently on each of said first subset of the plurality of host computers.

II. PRIOR PROCEEDINGS

The '523 Patent was litigated in 2000 in the Northern District of California before Judge Alsup in the case captioned *HearMe v. Lipstream Networks, Inc.*, No. C 99-04506 WHA. During those proceedings, Judge Alsup construed some of the same claim terms that are at issue in this proceeding; however, the court did not have the benefit of reviewing the claims in light of the later-issued '686 Patent. Judge Alsup issued his final claim construction ruling on August 25, 2000.

This court construed the claims of the PalTalk Patents twice during *PalTalk v. Microsoft Corp.*, 2:06-CV-00367-DF ("PalTalk I"). The claims were first construed in the court's July 29, 2008 claim construction order, and again construed in the court's February 20, 2009 supplemental claim construction order (the "Supplemental Order"). Following claim

construction, the court presided over the PalTalk I trial in March 2009. The parties settled after PalTalk had presented its entire case-in-chief and Microsoft had completed part of its case.

III. GENERAL PRINCIPLES GOVERNING CLAIM CONSTRUCTION

"A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention." *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1340 (Fed. Cir. 1999). Claim construction is an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996).

To ascertain the meaning of claims, the court looks to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. The specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. *Id.* A patent's claims must be read in view of the specification, of which they are a part. *Id.* For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed. Cir. 2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee's invention. Otherwise, there would be no need for claims. *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388 (Fed. Cir. 1992). Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim

language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

This court's claim construction decision must be informed by the Federal Circuit's decision in *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). In *Phillips*, the court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that "the *claims* of a patent define the invention to which the patentee is entitled the right to exclude." 415 F.3d at 1312 (emphasis added) (*quoting Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1313. This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention and that patents are addressed to and intended to be read by others skilled in the particular art. *Id.*

The primacy of claim terms notwithstanding, *Phillips* made clear that "the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of "a fully integrated written instrument." *Id.* at 1315 (quoting *Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id.* at 1314-17. As the Supreme Court stated long ago, "in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive

portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims." *Bates v. Coe*, 98 U.S. 31, 38 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998):

> Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Phillips, 415 F.3d at 1316. Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. Like the specification, the prosecution history helps to demonstrate how the inventor and the PTO understood the patent. *Id.* at 1317. Because the file history, however, "represents an ongoing negotiation between the PTO and the applicant," it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence that is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims. *Id.*

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion made by *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes.

Phillips, 415 F.3d at 1319-24. The approach suggested by *Texas Digital*—the assignment of a limited role to the specification—was rejected as inconsistent with decisions holding the specification to be the best guide to the meaning of a disputed term. *Id.* at 1320-21. According to *Phillips*, reliance on dictionary definitions at the expense of the specification had the effect of "focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent." *Id.* at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id.* What is described in the claims flows from the statutory requirement imposed on the patentee to describe and particularly claim what he or she has invented. *Id.* The definitions found in dictionaries, however, often flow from the editors' objective of assembling all of the possible definitions for a word. *Id.* at 1321-22.

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 1323-25. Rather, *Phillips* held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

IV. DISPUTED ISSUES

At core, the disputed claim terms stem from a disagreement regarding two issues: 1) whether the "aggregated payload," "aggregated message," and "server message" must be "single" identical payloads/messages or can be one or more payloads/messages; and 2) whether

the aggregating limitations require aggregating all payload portions of incoming messages or only data items from those payloads.

A. "Aggregated Message" / "Aggregated Payload" / "Server Message"

The dispute regarding whether the aggregated payload/message and server message terms means "one or more" payloads/messages, or is limited to a single payload/message, spans several disputed claim limitations. Each of the contested claim limitations that involve this dispute will be discussed individually in section V below. The following limitations put the dispute in context:

Representative Claim Language	**Plaintiff's Proposed Construction**	**Defendants' Proposed Construction**
'523 Patent, Claim 1: 1. A method for providing group messages to a plurality of host computers connected over a unicast wide area communication network, comprising the steps of: ... aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload; **forming an aggregated message** using said aggregated payload; and **'686 Patent, Claim 18:** 18. A method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of: (1) receiving a host message from one of the plurality of host computers belonging to a message group, wherein said host message contains a payload portion and a portion that is used to identify said message group; (2) **forming a server message** by using said payload portion of said host message; and aggregating said payload portion with the payload portion of a second host message received from another of the plurality of host computers belonging to said message group...	"Creating **one or more** aggregated messages that contain **data items from** an aggregated payload."	"Creating a **single** aggregated message that contains **the aggregated payload.**"

PalTalk argues that the "aggregated message" transmitted to multiple host computers can be "one or more" different messages. Defendants, however, argue that the "aggregated message"

must be a "single" message—i.e., all of the aggregated messages transmitted to the plurality of host computers must be identical.

i. Prior Construction

In PalTalk I, this issue was raised in the context of claim 5 of the '686 Patent. Claim 5 recites:

> A method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of:
>
> ...
>
> (2) forming a server message using said payload portion of said host message;
>
> (3) **transmitting said server message** to each of the plurality of host computers belonging to said message group; and
>
> (4) suppressing said server message such that said one of the plurality of host computers which originated said host message does not receive said server message;
>
> ....

In PalTalk I, defendant Microsoft argued that claim 5 of the '686 Patent required "that the server transmit the same message to each member of a group." *See* Supplemental Order at 7, attached as Ex. E to PalTalk's Opening Claim Construction Brief. The court relied on its prior constructions and the specification to reject Microsoft's argument:

> In its Claim Construction Order, the Court construed the claimed "server message" to mean "a message formed by a server for delivery to *one or more* group members." Dkt. No. 107 at 38 (emphasis added). Microsoft's position would redefine this term to mean "a message formed by a server for delivery to *all* group members." The plain language of this Court's construction, however, allows for an embodiment in which a server message is sent to one group member. This means that another server message could be sent to separate group member. This reading is supported by the '686 Patent specification. Specifically, this reading is supported by Figure 7, in which individually tailored messages are sent to four different host computers—styled 100, 101, 102, and 103. Moreover, this Court has recognized that Figure 7 in the '686 Patent depicts the claimed echo suppression. Dkt. No. 107 at 35. Because Figure 7 depicts server messages of varying content being sent to different host computers, Microsoft's position

> would vitiate the preferred embodiment depicted therein. Such a result is improper in this case. *See Vitrionics*, 90 F.3d at1583.
>
> In sum, this Court finds that claim 5 does not require that the server send the same message to each host computer.

Id. at 7-8. In other words, the court previously held that the "server message" of claim 5 can be "individually tailored messages"—i.e., one or more messages sent to different host computers. *Id.*

Claims 1, 3, and 18 of the '686 Patent require aggregated messages/payloads and server messages to be sent to a plurality of host computers. PalTalk argues that the court's prior construction of "server message" recited in claim 5 of the '686 Patent is equally applicable to the construction of the "aggregated message," "aggregated payload," and "server message" recited in claims 1, 3, and 18 of the '686 Patent. As such, PalTalk argues that the court should construe these terms in a manner consistent with its prior reasoning by concluding that the "server message," "aggregated message," and "aggregated payload" recited in claims 1, 3, and 18 mean "one or more" messages/payloads.

In response, Defendants first note that claim 5 of the '686 Patent employs echo suppression,[1] while claims 1, 3, and 18 do not. Defendants concede that there is no dispute that echo suppression can result in one host receiving a different "server message" than another host given the different manner in which echo-suppressed server messages are created. But, according to Defendants, even in claim 5, other than the material excluded due to echo suppression, a common server message must be sent to all of the host computers in the recited "plurality."

Furthermore, Defendants argue that claim 5 presents an entirely different issue from that presented in claims 1, 3, and 18 because it does not recite an aggregation step. In claim 5, the

[1] Echo suppression is the technique by which the GMS avoids sending back to a host the same message that the host previously sent to the server for distribution to the other group members.

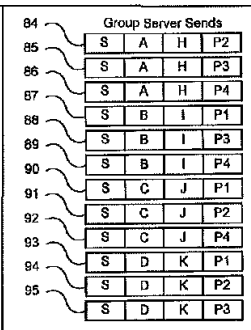
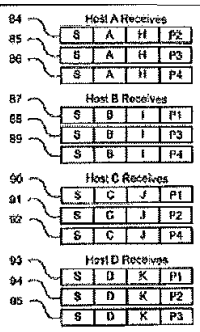
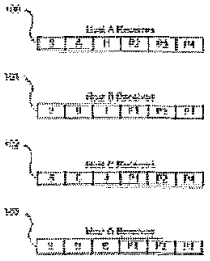
"server message" is formed by "using said payload portion of said host message." In contrast, the "server message" in claim 18 is formed by "using said payload portion of said host message; and aggregating said payload portion with the payload portion of a second host message...." Defendants, therefore, argue that the court should conclude that its previous construction of "server message" recited in claim 5 of the '686 Patent, which found that the server does not have to send the same message to the various host computers, is not applicable to claims 1, 3, and 18.

ii. Plaintiff's Arguments

In addition to its argument regarding the court's prior claim construction, PalTalk contends that its proposed construction follows from the plain language of the claims. PalTalk notes that the Federal Circuit has consistently held that "an indefinite article 'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising.'" *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000; *see also Baldwin Graphic Systems, Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1342 (Fed. Cir. 2008). Claims 1, 3, and 18 of the '686 Patent recite either "*an* aggregated message," "*an* aggregated payload," or "*a* server message." Furthermore, PalTalk contends that, as explained below, the specification of the PalTalk Patents describes more than one "aggregated message," "aggregated payload," and "server message." As such, PalTalk argues that because the asserted claims use the open-ended transitional phrase "comprising" and the specification teaches more than one message/payload, the aggregated message, aggregated payload, and server message terms must be construed to mean "one or more" messages/payloads.

PalTalk also contends that its proposed construction is supported by the written description and disclosed embodiments of the PalTalk Patents. PalTalk argues that figures 6 and 7 support its contention that the GMS creates a different aggregated payload/message or server

message for each of a plurality of host computers – i.e., "Host A" has a destination address of "A" and receives payloads "P2," "P3," and "P4," while "Host B" has a destination address of "B" and receives payloads "P1," "P3," and "P4":

'523 Patent; Figure 6		
'523 Patent; Figure 7		

As such, PalTalk argues that the "aggregated message," "aggregated payload," and "server message" must be construed to mean "one or more" messages/payloads to avoid excluding these embodiments of the PalTalk Patents.

In response, Defendants argue that, contrary to PalTalk's contentions, not every claim of the PalTalk Patents must read on figures 6 and 7, which both employ echo suppression. *Beneficial Innovations, Inc. v. Blockdot, Inc.*, Nos. 2:07-CV-263-TJW-CE, 2:07-CV-555-TJW-CE, 2010 WL 1441779 at *8 (E.D. Tex. Apr. 12, 2010) ("Every claim does not need to cover every disclosed embodiment of a patent."). Defendants note that claim 5 of the '686 Patent is the only claim that specifically recites "suppressing said server message such that said one of the

plurality of host computers which originated said host message does not receive said server message...." Furthermore, there is no dispute that both figure 6 and 7 of the PalTalk Patents disclose echo suppression – i.e., in both figures neither "Host A," "Host B," "Host C", or "Host D" receives the payload that it originally sends. As such, Defendants argue that claim 5 of the '686 Patent, and the aspects of the specification that require echo suppression, do not alter the scope of claims that are explicitly worded to capture specific approaches to aggregation that do not employ echo suppression.

In reply, PalTalk contends that, even if echo suppression were not employed in figures 6 and 7, each host would still receive different messages because the destination addresses in each message are different. In surreply, Defendants argue that although an "aggregated message" contains, in part, "destination data," there is no requirement that this destination data be the host's destination address.

iii. Defendants' Arguments

Defendants argue that the specification supports their proposed construction – i.e., that aggregating claims require the creation and delivery of a "single" identical message/payload to the various host computers. Defendants argue that the patents are clear that combining all payload portions from multiple hosts to create a "single" identical outgoing message from the GMS is essential to "the present invention:"

> Aggregation
>
> A key concept in the present invention is the aggregation of multiple messages in a message queue into a single ULP receive message to a host that contains multiple payload items in the payload.[2]

'523 Patent at 23:49-53. Considering that the specification states that aggregation of multiple messages into a "single" message is a "key concept of the present invention," Defendants argue

[2] The specification refers to the messages generated by the (GMS) as "ULP receive" messages.

that the aggregating claims must be limited to the creation and delivery of a single identical message. In response, PalTalk argues that the cited specification language merely describes the "concept" of aggregation and is completely silent about whether the same "single ULP receive message" that results from aggregation is sent to multiple host computers.

Finally, Defendants note that claims 1, 3, and 18 of the '686 Patent require that the aggregated message/payload be sent to multiple recipients and explain that the "aggregated message keeps the shared, interactive application operating consistently on each of said first subset of the plurality of host computers." Defendants also note that the PalTalk Patents do not explain how to maintain such application consistency in a method where the server generates a number of distinct messages for each recipient. Therefore, Defendants argue that, to maintain consistent application operation, the multi-recipient aggregating claims must be construed to require the creation and delivery of "single" identical messages/payloads to the various host recipients.

iv. Analysis

Defendants are correct that the court should not blindly apply its previous analysis and construction of claim 5 of the '686 Patent to claims 1, 3, and 18 of the '686 Patent. In the Supplemental Order, the court specifically stated that its construction of claim 5's "server message" is supported by figure 7, which the court recognized "depicts the claimed echo suppression." As noted above, claims 1, 3, and 18 do not employ echo suppression. As such, the court rejects PalTalk's contention that it should apply its prior construction of claim 5 to claims 1, 3, and 18 without first analyzing those claims in light of both the intrinsic and extrinsic records.

The court, however, agrees with PalTalk's argument that the claim language supports its contention that the aggregated message/payload and server message recited in claims 1, 3, and 18 of the '686 Patent should be construed to mean "one or more" aggregated messages/payloads. As PalTalk notes, the indefinite article "'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising.'" *KCJ Corp.*, 223 F.3d at 1356. This convention is overcome "only in rare circumstances when the patentee evinces a clear intent to...limit the article." *Id.*; *see also Free Motion Fitness, Inc. v. Cybex Int'l, Inc.*, 423 F.3d 1343, 1350 (Fed. Cir. 2005). In fact, in *Free Motion Fitness* the Federal Circuit concluded that "a cable" meant "one or more cables" despite the fact that the specification of the patent-in-suit made numerous references to a single cable. *Free Motion Fitness*, 423 F.3d at 1350. In this case, although there are numerous references to a "single" message/payload in the specification, nothing in the intrinsic record indicates that the patentee intended to limit claims 1, 3, and 18 of the '686 Patent to a *single* message/payload – much less a single *identical* message/payload, as Defendants contend. As such, the court concludes that the "aggregated message," "aggregated payload," and "server message" recited in claims 1, 3, and 18 of the '686 Patent mean "one or more" messages/payloads.

This construction is also supported by the written description of the invention. As Defendants note, "[i]t is often the case that different claims are directed to and cover different disclosed embodiments." *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1383 (Fed. Cir. 2008). Therefore, as mentioned above, Defendants are correct that the varying payloads delivered to the hosts in figures 6 and 7 are not dispositive of the court's construction of claims 1, 3, and 18 of the '686 Patent because none of those claims explicitly employ echo suppression. Nevertheless, figures 6 and 7 also show that the aggregated messages/payloads and

server messages contain different destination addresses, which supports the conclusion that the claims do not require the delivery of a single identical message/payload.

Finally, the court rejects Defendants' argument that, to maintain application consistency as required by claims 1, 3, and 18 of the '686 Patent, the court must construe aggregated message/payload and server message to mean a "single" identical message/payload. Claim 5 of the '686 Patent, which the court previously concluded did not require the GMS to send the same message to each host computer, also explains that the "server message keeps the shared, interactive application operating consistently on each of the plurality of host computers." As such, in accordance with the claim construction orders in PalTalk I, the court rejects this argument.

In summary, the court concludes that the "aggregated message," "aggregated payload," and "server message" recited in claims 1, 3, and 18 of the '686 Patent means "one or more" messages/payloads. Furthermore, in accordance with the court's prior claim construction, the court concludes that "server message," as recited in claim 5 of the '686 Patent, means "one or more" messages.

B. "Aggregating" / "Aggregated"

The parties' dispute centers around whether the "aggregating" limitations require aggregating all payloads of incoming messages or only data items from those payloads. Most claims of the PalTalk Patents require that the GMS aggregate payloads of data sent to it from a plurality of host computers. As a representative example, claim 1 of the '523 Patent claims a method comprising the steps of sending messages "containing a payload portion" to a server and "aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages." PalTalk's proposed constructions of the

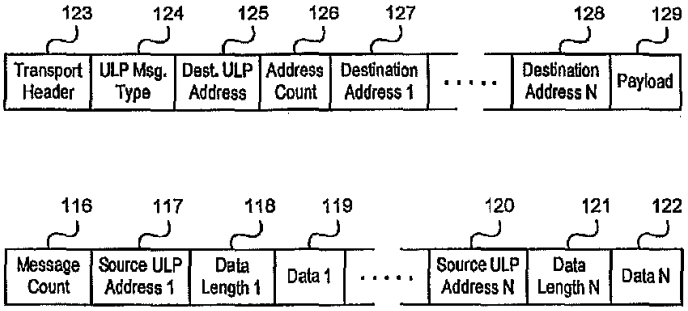
"aggregating" terms would require the server to aggregate at least one data item from the payload portions received from the host computers. Defendants' proposed constructions, on the other hand, would require the server to aggregate the entire payload portion of the messages received from the host computers.

i. Prior Construction

The court previously addressed this very same issue in PalTalk I. There, the court initially construed "*aggregating, by said server* in a time interval determined in accordance with a predefined criterion, said *payload portions* of said messages to create an aggregated payload" to mean "the group messaging server forms an aggregated payload *by aggregating the payloads of all the claimed messages it receives* from the claimed plurality of host computers within a certain time period. The payloads may be aggregated in any order and the time period is certain in that it must arise from criteria specified prior to the beginning of the time interval." Original Claim Construction Order at 25, attached as Ex. D to PalTalk's Opening Claim Construction Brief. Following the court's first claim construction order, Microsoft asked the court to construe "said payload portions" to mean "the *entire payload portions* of the claimed messages." Essentially, Microsoft was seeking to obtain the exact same construction that Defendants seek here – i.e., that the GMS aggregates the entire payload portion of every message it receives from a host computer. The court rejected Microsoft's proposed construction, stating:

> this Court finds no support in the claim language or the specification for Microsoft's proposed limitation. The patent claims at issue nowhere require that the entire payload portion be aggregated—words of degree are absent from the claims' reference to payload portions and this Court find [sic] no reason to insert such limitations into the claims. In addition, this Court finds no support in the specification for the proposition that all payload elements, much less all data items, must be aggregated.

Supplemental Order at 5-6, attached as Ex. E to PalTalk's Opening Claim Construction Brief. The court went on to note that the PalTalk Patents teach that some data items within a payload may never be aggregated into an outgoing message. *Id.* Specifically, as illustrated below, one preferred embodiment of the PalTalk Patents discloses a payload portion with a single payload element, number 129, that consists of four data items, number 116, 117, 118, and 119:



Id. (citing '523 Patent at 14-25:51; 20:4-14); *see also* '523 Patent at Figure 9. Although the PalTalk Patents teach that 117, 118, and 119 are aggregated, data item 116 is not aggregated in this preferred embodiment. *Id.* (citing '523 Patent at 20:26-29 ("The ULP server process 140 will extract the single payload item from the message 117, 118, and 119 and place the payload item in each of the message queues 143."). The court concluded that "[b]ecause data item 116 is not aggregated, a construction that requires aggregation of the entire payload would vitiate this preferred embodiment. Such a result is not proper." *Id.* at 6 (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996)).

In light of its ruling, however, the court concluded that its prior construction of "aggregating, by said server...said payload,"[3] which referenced the full payload, was

[3] "The group messaging server forms an aggregated payload *by aggregating the payloads of all the claimed messages it receives* from the claimed plurality of host computers within a certain time period. The payloads may be aggregated in any order and the time period is certain in that it must arise from criteria specified prior to the beginning of the time interval."

inconsistent with its constructions of "aggregate"[4] and "payload portion,"[5] which referenced the payload's constituent data items. *Id.* To avoid jury confusion, the court revised its construction as follows: "aggregating, by said server...said payload portions of said messages to create an aggregated payload" means "the group messaging server forms an aggregated payload by aggregating *at least one data item from the payloads* of all the claimed messages it receives from the claimed plurality of host computers within a certain time period. *The data items* may be aggregated in any order and the time period is certain in that it must arise from criteria specified prior to the beginning of the time interval." *Id.* at 7.

ii. The Parties' Arguments

PalTalk first argues that the court should adopt its previous construction, which does not require the server to aggregate the entire payload portion of each host message it receives. In support of its proposed constructions, PalTalk makes the same arguments that the court addressed in PalTalk I – namely, that: (1) the specification supports alteration of payloads because it expressly suggests processing the contents of the messages that the server receives ('523 Patent at 27:22-34); (2) the open-ended nature of the claims (i.e., the use of "comprising" and "contains") compels a non-restrictive reading of the patents; and (3) in one embodiment of the PalTalk Patents certain data items within the payload are never aggregated, even when the payload consists of only one payload element ('523 Patent at 20:9-11; 20:26-29; 23:53-55). In PalTalk I, the court concluded that it agreed with PalTalk's various arguments and, as discussed above, concluded that the aggregating terms require aggregation of only some of the data items that comprise the payload portion received by the GMS. Supplemental Order at 5-7, attached as Ex. E to PalTalk's Opening Claim Construction Brief.

[4] "To collect *two or more data items* together as a unit, however, where each data item retains its identity and may be extracted from the unit."
[5] The part of a message that *contains data item(s)* conveying information.

Defendants' response is premised on the following argument: (1) the parties agree that "payload portion" means "the part of a message that contains data items *conveying information*;" (2) data item 116, referenced in figure 9 and described at 14:37-50, does not convey information – it merely indicates how many payload portions are in the message; (3) as such, the "payload portion" is comprised only of data items 117, 118, and 119 – not data item 116; (4) the embodiment that the court concluded would be vitiated in PalTalk I requires that data items 117, 118, and 119 are aggregated, while data item 116 is not; and (5) therefore, contrary to the court's prior conclusion, construing the "aggregating" terms to require aggregation of the entire payload portion of every host message does not vitiate any embodiment of the '523 Patent because only data items 117, 118, and 119 are included in the definition of "payload portion." Defendants' rely on the following section of the specification for their argument:

> The payload format for ULP datagrams is defined by items 116, 117, 118, 119, 120, 121 and 122. Item 116 is the message count and defines how many payload elements will be contained in the payload. A single payload element consists of a triplet of source ULP address, data length and data. Items 117, 118 and 119 comprise the first payload element of the payload.

'523 Patent at 14:37-45.

iii. Analysis

As discussed above, in PalTalk I, the court concluded that the PalTalk Patents teach that some data items within a payload may never be aggregated into an outgoing message. In fact, the court concluded that a construction requiring aggregation of the entire payload would vitiate a preferred embodiment of the invention. Having carefully considered the parties' arguments, the court is not convinced that the construction of the "aggregating" terms adopted in PalTalk I is incorrect. As such, in accordance with the previous construction of the "aggregating" terms, the

court concludes that it is not necessary for the GMS to aggregate the entire payload portion of each message it receives from the host computers.

V. DISPUTED LIMITATIONS

Each of the disputed terms is construed below, taking into account the court's conclusions regarding the disputed issues.

a. "Aggregating, by said server . . . to create an aggregated payload"

Term	PalTalk's Proposed Construction	Defendants' Proposed Construction
"aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload" **('523 Patent, Claim 1)**	"The group messaging server forms an aggregated payload by aggregating at least one data item from the payloads of all the claimed messages it receives from the claimed plurality of host computers within a certain time period. The data items may be aggregated in any order and the time period is certain in that it must arise from criteria specified prior to the beginning of the time interval."	"The group messaging server forms an aggregated payload by aggregating the payload portions of all the claimed messages it receives from the claimed plurality of host computers within a certain time period. The payload portions may be aggregated in any order and the time period is certain in that it must arise from criteria specified prior to the beginning of the time interval."

The court adopts its prior construction of the "aggregating, by said server...to create an aggregated payload," which is the construction recommended by PalTalk. As such, the court concludes that "aggregating, by said server...to create an aggregated payload" means "the group messaging server forms an aggregated payload by aggregating at least one data item from the payloads of all the claimed messages it receives from the claimed plurality of host computers within a certain time period. The data items may be aggregated in any order and the time period is certain in that it must arise from criteria specified prior to the beginning of the time interval."

b. "aggregating said payload portions..." / "aggregating said payload portions...to create an aggregated payload" / "aggregating said payload portions...to create an aggregated message"

Term	PalTalk's Proposed Construction	Defendants' Proposed Construction
"aggregating said payload portions..." **('686 Patent, Claims 1, 3 and 12)**	"Aggregating at least one data item from the payloads of all the claimed messages from the claimed plurality of host computers. The data items may be aggregated in any order."	"Collecting all of the payloads portions together as a unit, however, where each payload portion retains its identity and may be extracted from the unit."
"aggregating said payload portions of said host messages ...to create an aggregated payload" **('686 Patent, Claim 1)**	"Aggregating said payload portions of said host messages...to create one or more aggregated payloads."	"The aggregated payload comprises all the payload portions received in the claimed host messages from the second subset of host computers."
"aggregating said payload portions of said messages...to create an aggregated payload" **('686 Patent, Claim 12)**	"Aggregating said payload portions of said messages...to create one or more aggregated payloads."	"The aggregated payload comprises all the payload portions received in the claimed host messages from the second subset of host computers."
"aggregating said payload portions...to create an aggregated message" **('686 Patent, Claim 3)**	"Aggregating said payload portions of said host messages...to create one or more aggregated messages."	"The aggregated message comprises all the payload portions received in the claimed host messages from the second subset of host computers."

The court adopts PalTalk's proposed constructions of the "aggregating said payload portions...to create an aggregated" payload/message terms. PalTalk's proposed construction of "aggregating" references the payload's constituent data items and does not require aggregation of the entire payload. Furthermore, its proposed construction of "aggregated payload" and "aggregated message" reflects that the aggregated messages/payloads can be one or more messages sent to the host computers – i.e., there is no requirement that the server send a single identical message to each host computer.

c. "forming a server message..."

Term	PalTalk's Proposed Construction	Defendants' Proposed Construction
"aggregating said payload portion with the payload portion of a second host message received from another of the plurality of host computers belonging to said message group" **('686 Patent, Claim 18)**	No additional construction necessary.	"Collecting the payload portions together as a unit, however, where each payload portion retains its identity and may be extracted from the unit."
"forming a server message by using said payload portion of said host message; and aggregating said payload portion with the payload portion of a second host message received from another of the plurality of host computers belonging to said message group" **('686 Patent, Claim 18)**	"Forming one or more server messages, each containing one or more data items from the payload portion of the host message and one or more data items from the payload portion of a second host message received from another of the plurality of host computers belonging to said message group, where each of the data items retains its identity and may be extracted from the one or more server messages."	"Creating a server message that contains the payload portion of the claimed host message and the payload portion of the claimed second host message."

PalTalk's proposed construction of "forming a server message by using said payload portion of said host message..." incorporates the court's prior construction of "aggregating" and addresses the "one or more" issue in the context of this limitation. As such, the court adopts PalTalk's proposed constructions – i.e., "forming a server message by using said payload portion of said host message..." means "forming one or more server messages, each containing one or more data items from the payload portion of the host message and one or more data items from the payload portion of a second host message received from another of the plurality of host computers belonging to said message group, where each of the data items retains its identity and may be extracted from the one or more server messages." Furthermore, in light of the court's decision to adopt PalTalk's proposed construction of the "forming a server message..." limitation, the court concludes that further construction of the "aggregating said payload portion..." language recited therein is not necessary and would not assist the jury.

d. "aggregating" / "aggregated" / "aggregated payload" / "aggregated message" / "forming an aggregated message using said aggregated payload

Term	PalTalk's Proposed Construction	Defendants' Proposed Construction
"aggregating" / "aggregated"	"To collect two or more data items together as a unit, however, where each data item retains its identity and may be extracted from the unit."	No construction necessary in light of other "aggregation" terms. Or "To collect the payload portions together as a unit, however, where each payload portion retains its identity and may be extracted from the unit."
Representative Claim Language: aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an **aggregated payload;** forming an aggregated message using said aggregated payload; **('523 Patent, Claim 1; '686 Patent, Claims 1 and 12)**	No construction necessary. Or "One or more collections of at least one data item from the payloads of all the claimed messages from the claimed plurality of host computers, where each data item retains its identity and may be extracted from the collection. The data items may be aggregated in any order."	"The aggregated payload comprises all the payload portions received in the claimed host messages."
Representative Claim Language: aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload; forming an **aggregated message** using said aggregated payload; **('523 Patent, Claim 1; '686 Patent, Claims 1, 3 and 12)**	"One or more messages containing destination data and data items from an aggregated payload."	"A message containing destination data and an aggregated payload."
Representative Claim Language: aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload; **forming an aggregated message using said aggregated payload;** **('523 Patent, Claim 1; '686 Patent, Claims 1 and 12)**	"Creating one or more aggregated messages that contain data items from an aggregated payload."	"Creating a single aggregated message that contains the aggregated payload."

PalTalk's proposed constructions of "aggregating" / "aggregated," "aggregated message," and "forming an aggregated message using said aggregated payload" reflect the court's rulings outlined above. Furthermore, considering PalTalk's proposed construction of "aggregated," the court agrees with PalTalk that no further construction of "aggregated payload" is necessary – any further construction would likely confuse the jury. As such, the court adopts the following constructions: (1) "aggregating" / "aggregated" means "to collect two or more data items together as a unit, however, where each data item retains its identity and may be extracted from the unit;" (2) "aggregated payload" needs no further construction in light of the court's construction of "aggregated;" (3) "aggregated message" means "one or more messages containing destination data and data items from an aggregated payload;" and (4) "forming an aggregated message using said aggregated payload" means "creating one or more aggregated messages that contain data items from an aggregated payload."

e. "server message" ('686 Patent, Claims 5 and 18)

Term	PalTalk's Proposed Construction	Defendants' Proposed Construction
"server message"	"One or more messages formed by a server for delivery to one or more group members."	"Collecting the payload portions together as a unit, however, where each payload portion retains its identity and may be extracted from the unit."

The court adopts PalTalk's proposed construction of the "server message" recited in claim 5 of the '686 Patent because it aligns with the court's construction in PalTalk I. Furthermore, the court adopts PalTalk's proposed construction of the "server message" recited in claim 18 of the '686 Patent because, as explained above, it is supported by both the claim language and the written description of the '686 Patent. As such, the court construes "server

message" to mean "one or more messages formed by a server for delivery to one or more group members."

VI. CONCLUSION

The court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit. The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the court.

It is so ORDERED.

SIGNED this 5th day of April, 2011.

CHARLES EVERINGHAM IV
UNITED STATES MAGISTRATE JUDGE

Bianca Nealious

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MEMORANDUM AND OPINION regarding claim construction. The court adopts the constructions set forth in this opinion for the disputed terms of thepatents-in-suit. Signed by Magistrate Judge Charles Everingham on 4-5-2011. (delat,)

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Samuel Franklin Baxter sbaxter@mckoolsmith.com, jgarrett@mckoolsmith.com

Elliot N Brown ebrown@irell.com, marteaga@irell.com

Robert Christopher Bunt rcbunt@pbatyler.com, dattaway@pbatyler.com

Sidney Calvin Capshaw, III ccapshaw@capshawlaw.com, , bbell@capshawlaw.com, ederieux@capshawlaw.com, hpeterson@capshawlaw.com, jrambin@capshawlaw.com, lonfedserv@capshawlaw.com, msteward@capshawlaw.com, rhurse@capshawlaw.com

Otis W Carroll, Jr Fedserv@icklaw.com, nancy@icklaw.com

Elizabeth L DeRieux ederieux@capshawlaw.com, bbell@capshawlaw.com, ccapshaw@capshawlaw.com, hpeterson@capshawlaw.com, jrambin@capshawlaw.com, lonfedserv@capshawlaw.com, msteward@capshawlaw.com, rhurse@capshawlaw.com

Harry Lee Gillam, Jr gil@gillamsmithlaw.com, janet@gillamsmithlaw.com

Jack Wesley Hill wh@wsfirm.com, ak@wsfirm.com, tdaniels@wsfirm.com, twilliams@wsfirm.com, wbc@wsfirm.com

John Michael Pickett jpickett@youngpickettlaw.com, jpickett83@aol.com

Daymon Jeffrey Rambin jrambin@capshawlaw.com, ccapshaw@capshawlaw.com, ederieux@capshawlaw.com, lonfedserv@capshawlaw.com, rhurse@capshawlaw.com

Damon Michael Young dyoung@youngpickettlaw.com

Clyde Moody Siebman siebman@siebman.com, clydesiebman@siebman.com, kellyjohnson@siebman.com, siebmanecfin@siebman.com, siebmanecfout@siebman.com

Lawrence Augustine Phillips larryphillips@siebman.com, kellyjohnson@siebman.com, siebmanecfin@texoma.net

Deborah J Race drace@icklaw.com, fedserv@icklaw.com, johnna@icklaw.com

Thomas John Ward, Jr jw@wsfirm.com, ak@wsfirm.com, tdaniels@wsfirm.com, twilliams@wsfirm.com, wbc@wsfirm.com

Jesse J Jenner jesse.jenner@ropesgray.com

Max Lalon Tribble, Jr mtribble@susmangodfrey.com, pgoff@susmangodfrey.com

Charles Ainsworth charley@pbatyler.com, dyoungman@pbatyler.com

Gene W Lee gene.lee@ropesgray.com

Ellisen S Turner eturner@irell.com, ITiapula@irell.com, klayugan@irell.com, marteaga@irell.com, mschulman@irell.com, rbooker@irell.com

Brooke Ashley-May Taylor btaylor@susmangodfrey.com, bnealious@susmangodfrey.com, sschulze@susmangodfrey.com

Michael F Heim mheim@hpcllp.com, abranum@hpcllp.com, awilson@hpcllp.com, canderson@hpcllp.com

Byron Willie Cooper bcooper@teklaw.co

Franklin D Kang franklin.kang@lw.com

Jason Dodd Cassady jcassady@mckoolsmith.com, cfullen@mckoolsmith.com

Robert Steinberg bob.steinberg@lw.com, paula.kamshad@lw.com

Kalpana Srinivasan ksrinivasan@susmangodfrey.com, hdaniels@susmangodfrey.com

Douglas Ron Wilson dwilson@hpcllp.com, nbaudoin@hpcllp.com

Charles Courtenay charles.courtenay@lw.com

Eric B Hanson ehanson@irell.com

David S Chun david.chun@ropesgray.com

Brian P Biddinger brian.biddinger@ropesgray.com, Biddingerbp@yahoo.com

Amira Mae El-Hakam aelhakam@susmangodfrey.com, dward@susmangodfrey.com

Tal Kedem tal.kedem@ropesgray.com, CourtAlert@Ropesgray.com

Matthew R Clements matthew.clements@ropesgray.com, CourtAlert@ropesgray.com

Hanyong Lee Hanyong.Lee@ropesgray.com, CourtAlert@RopesGray.com

Jeff Myung jeff.myung@lw.com

Jason J Lee jlee@mofo.com, elaris@mofo.com

Jennifer Leigh Truelove jtruelove@mckoolsmith.com, jltruelove@earthlink.net

Andrew Phuc Nguyen anguyen@irell.com

Jorge L Fernandez jfernandez@irell.com

Edward A Infante einfante@jamsadr.com

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PALTALK HOLDINGS, INC.	§	
	§	
vs.	§	CASE NO. 2:09-CV-274-DF-CE
	§	
SONY COMPUTER ENTERTAINMENT AMERICA, INC., ET AL.	§	

MEMORANDUM OPINION AND ORDER

I. OVERVIEW OF THE PATENTS AND TECHNOLOGY

In 2002, plaintiff PalTalk purchased U.S. Patent Nos. 5,822,523 (the "'523 Patent") and 6,226,686 (the "'686 Patent") (collectively the "PalTalk Patents). The PalTalk Patents are related. The application for the '523 Patent was filed on February 1, 1996. The application for the '686 Patent was filed on September 28, 1999 as a continuation of U.S. Patent No. 6,017,766 ("the '766 Patent"), which itself is a continuation of the '523 Patent. The '523, '766, and '686 Patents all share the same specification. Therefore, references to the written description of PalTalk Patents will generally be limited to the '523 Patent.

The PalTalk Patents are both titled "Server-Group Messaging System for Interactive Applications." The PalTalk Patents describe a system for reducing both the network load and the

EXHIBIT C

ORDER

Reexamination of U.S. Patent No. 6,226,686
Reexamination Control No. 90/011,036
Attorney Docket No. 0078494-000002

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PALTALK HOLDINGS, INC.,	§	
	§	
Plaintiff,	§	
	§	
vs.	§	**CIVIL ACTION NO. 2:06-CV-367 (DF)**
	§	
MICROSOFT CORPORATION,	§	
	§	
Defendant.	§	

ORDER

Before the Court is Microsoft's Motion for Summary Judgment of Anticipation in view of Netrek and TinyMUD. Dkt. No. 113. Also before the Court are PalTalk's response, Microsoft's reply, and PalTalk's sur-reply. Dkt. Nos. 118, 122, and 126. The Court held a hearing on this and other matters on January 27, 2009. Dkt. No. 167. Having considered the arguments of counsel, all relevant papers and pleadings, the Court finds that Microsoft's Motion for Summary Judgment should be **DENIED**.

I. BACKGROUND

Plaintiff PalTalk Holdings, Inc. ("PalTalk") filed this patent infringement action on September 12, 2006. Dkt. No. 1. PalTalk alleges that Microsoft Corporation ("Microsoft") infringes U.S. Patent Nos. 5,822,523 ("the '523 Patent") and 6,226,686 ("the '686 Patent"). *Id.* Both asserted patents have the same title, "Server-group messaging system for interactive applications," and teach a method for managing message flow in interactive computer applications operating over a computer network. PalTalk is asserting a total of eight claims from the two patents: claims 1 and 6 from the '523 Patent, and claims 1, 3, 4, 12, 15, and 18 from the '686 Patent.

Microsoft now moves for partial summary judgment, alleging that all asserted claims of the patents-in-suit are anticipated by two computer games, Netrek and TinyMUD, which were in use prior to the critical date. Dkt. No. 113.

II. LEGAL PRINCIPLES

In a motion for summary judgment, the moving party has the initial burden of showing that there is no genuine issue of any material fact and that judgment should be entered as a matter of law. Fed. R. Civ. P. 56(c); *Celotex Corp. v. Catrett,* 477 U.S. 317, 322-23 (1986). "The evidence of the non-movant is to be believed, and all justifiable inferences are to be drawn in his favor." *Anderson v. Liberty Lobby, Inc.,* 477 U.S. 242, 255 (1986). An issue is "material" where it involves a fact that might affect the outcome of the suit under the governing law of the underlying cause of action. *See Burgos v. S.W. Bell Tel. Co.,* 20 F.3d 633, 635 (5th Cir. 1994) (citing *Anderson,* 477 U.S. at 248). The nonmovant is not required to respond to a motion for summary judgment until the movant first meets its burden of demonstrating that there are no factual issues warranting trial. *Ashe v. Corley,* 992 F.2d 540 (5th Cir. 1993). Once the movant has shown the absence of material fact issues, however, the opposing party has a duty to respond, via affidavits or other means, asserting specific facts showing that there is a genuine issue for trial. Fed. R. Civ. P. 56(e). "Summary judgment will not lie if the dispute about a material fact is 'genuine,' that is, if the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Liberty Lobby,* 477 U.S. at 248.

III. PARTIES' POSITIONS AND DISCUSSION

Microsoft argues that two prior art references anticipate the asserted claims of PalTalk's patents. Dkt. No. 113. Microsoft contends that claims 1 and 6 of the '523 Patent and claims 1, 3, 12, 14, and 18 of the '686 Patent are anticipated by the computer game Netrek, which was used by

the public at least six years before the '523 Patent was filed. *Id.* at 1. In addition, Microsoft contends that claim 5 of the '686 Patent is anticipated by the computer game TinyMUD, which was used by the public at least seven years before that patent was filed. *Id.* Finally, Microsoft contends that because the source code for both games was posted on the internet prior to the critical date, the codes constitute printed publication that anticipate both patents. *Id.* at 2.

In support of its motion, Microsoft has provided declarations from the developers of Netrek and TinyMUD, who were graduate students at the time the games were developed. *Id.* at 9. In addition, Microsoft has provided excerpts of the NetTrek source code. *Id.* Microsoft contends that Netrek implemented the "exact embodiment of group messaging that the PalTalk specification describes." *Id.* at 19. Microsoft also argues that TinyMUD practiced the form of echo suppression claimed in the '686 patent. *Id.*

PalTalk responds first by arguing that the evidence presented by Microsoft does not satisfy a clear and convincing evidentiary burden. Dkt. No. 118 at 16-18. PalTalk argues that the oral testimony provided by the Netrek and TinyMUD inventors is uncorroborated and thus insufficient as a matter of law. *Id.* (citing *Finnigan Corp. v. Int'l Trade Comm'n*, 180 F.3d 1354, 1369 (Fed. Cir. 1999). Moreover, PalTalk contends that the oral testimony regarding Netrek actually contradicts the game source code that was provided. *Id.* at 18-19. Finally, PalTalk contends that Microsoft's evidence cannot be linked to any particular version of either Netrek or TinyMUD. *Id.* at 13-14, 30. As such, there is no evidence that the game versions relied on by Microsoft were in use prior to the critical date. *Id.*

Even if the evidence presented by Microsoft is found to be corroborate, PalTalk argues that neither Netrek or TinyMUD anticipate the claims of either patent-in-suit. PalTalk contends that

nothing in the Netrek source code or in the declaration of its inventor suggest that messages would be aggregated in the course of normal game operation, as required by the patents. *Id.* at 21-23. Furthermore, PalTalk argues that Netrek does not dislcose a "create message" operation as required by certain claims in the '686 Patent. *Id.* at 25-26. Finally, PalTalk contends that TinyMUD is not an shared interactive application because it was a text-based game that did not operate using a shared "application" or "experience" as required by this Court's claim construction. *Id.* at 31-32.

In order to prevail in its motion for summary judgment on the grounds of anticipation, Microsoft must show that a single prior art reference discloses each and every limitation of the asserted claims. *See Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002) ("A single prior art reference anticipates a patent claim if it expressly or inherently describes each and every limitation set forth in the patent claim."). In addition, since issued patents are presumed valid, Microsoft must show the patent to be anticipated by clear and convincing evidence. *Oakley, Inc. v. Sunglass Hut Int'l*, 316 F.3d 1331, 1339 (Fed Cir. 2003).

This Court finds that Microsoft has not met this burden of proof. PalTalk has raised genuine issues of material fact with respect to the validity of the patents-in-suit. Based on the evidence currently before the Court, a reasonable jury could find that the patents-in-suit are not anticipated by either Netrek or TinyMUD. A reasonable jury could find that Netrek does not aggregate as required and the TinyMUD is not a shared interactive application. Even if the evidence before the Court was sufficient to prove anticipation, this Court would still deny Microsoft's motion as that evidence is not sufficiently corroborated by reliable documentary or physical evidence. *See Finnagan*, 180 F.3d at 1369 ("[C]orroboration is required of any witness whose testimony alone is asserted to invalidate a patent, regardless of his or her level of interest.").

IV. CONCLUSION

For the reasons set forth in this order, Defendant's Motion for Summary Judgment of Anticipation (Dkt. No. 113) is hereby **DENIED.**

SIGNED this 2nd day of February, 2009.

DAVID FOLSOM
UNITED STATES DISTRICT JUDGE

Electronic Patent Application Fee Transmittal	
Application Number:	90011036
Filing Date:	14-Jun-2010
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Filer:	Charles F. Wieland III/Jean Bayou
Attorney Docket Number:	18330.0004
Filed as Large Entity	

ex parte reexam Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Reexamination claims in excess of 20	1822	53	52	2756
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**2756**

Electronic Acknowledgement Receipt	
EFS ID:	9857387
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	21839
Filer:	Charles F. Wieland III/Jean Bayou
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	18330.0004
Receipt Date:	11-APR-2011
Filing Date:	14-JUN-2010
Time Stamp:	23:43:24
Application Type:	Reexam (Patent Owner)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$2756
RAM confirmation Number	6849
Deposit Account	024800
Authorized User	WIELAND,CHARLES F.
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Trans Letter filing of a response in a reexam	90011036AMDT_TL.pdf	50873 d6b5efd1c3fe13a4a365a67f28582bace40184a1	no	1
Warnings:					
Information:					
2	Response after non-final action-owner timely	90011036AMDT.pdf	5644462 78c3a9df92e219a6da697b4584d184d26b296546	no	128
Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	30383 3a6df10ad3b57dee9297dc3f5b157b6916416ce5	no	2
Warnings:					
Information:					
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<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/011,036	06/14/2010	6226686	18330.0004	1071

21839 7590 05/02/2011

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EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 05/02/2011

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

PTO-90C (Rev. 10/03)

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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

NOVAK DRUCE & QUIGG, LLP

(NDQ REEXAMINATION GROUP)

1000 LOUISIANA STREET

FIFTY-THIRD FLOOR

HOUSTON, TX 77002

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/011,036*.

PATENT NO. *6226686*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Notice of Intent to Issue Ex Parte Reexamination Certificate	Control No.	Patent Under Reexamination	
	90/011,036	6226686	
	Examiner	Art Unit	
	ANDREW L. NALVEN	3992	

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

1. ☒ Prosecution on the merits is (or remains) closed in this *ex parte* reexamination proceeding. This proceeding is subject to reopening at the initiative of the Office or upon petition. *Cf.* 37 CFR 1.313(a). A Certificate will be issued in view of
   - (a) ☒ Patent owner's communication(s) filed: *11 April 2011*.
   - (b) ☐ Patent owner's late response filed: _____.
   - (c) ☐ Patent owner's failure to file an appropriate response to the Office action mailed: _____.
   - (d) ☐ Patent owner's failure to timely file an Appeal Brief (37 CFR 41.31).
   - (e) ☐ Other: _____.

   Status of *Ex Parte* Reexamination:
   - (f) Change in the Specification: ☐ Yes ☒ No
   - (g) Change in the Drawing(s): ☐ Yes ☒ No
   - (h) Status of the Claim(s):
     - (1) Patent claim(s) confirmed: *1-19*.
     - (2) Patent claim(s) amended (including dependent on amended claim(s)): _____
     - (3) Patent claim(s) canceled: _____.
     - (4) Newly presented claim(s) patentable: 20-72.
     - (5) Newly presented canceled claims: _____.
     - (6) Patent claim(s) ☐ previously ☐ currently disclaimed: _____
     - (7) Patent claim(s) not subject to reexamination: _____.

2. ☒ Note the attached statement of reasons for patentability and/or confirmation. Any comments considered necessary by patent owner regarding reasons for patentability and/or confirmation must be submitted promptly to avoid processing delays. Such submission(s) should be labeled: "Comments On Statement of Reasons for Patentability and/or Confirmation."

3. ☐ Note attached NOTICE OF REFERENCES CITED (PTO-892).

4. ☒ Note attached LIST OF REFERENCES CITED (PTO/SB/08 or PTO/SB/08 substitute).

5. ☐ The drawing correction request filed on _____ is: ☐ approved ☐ disapproved.

6. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some* c)☐ None of the certified copies have
   - ☐ been received.
   - ☐ not been received.
   - ☐ been filed in Application No. _____.
   - ☐ been filed in reexamination Control No. _____.
   - ☐ been received by the International Bureau in PCT Application No. _____.

   * Certified copies not received: _____.

7. ☐ Note attached Examiner's Amendment.

8. ☐ Note attached Interview Summary (PTO-474).

9. ☐ Other: _____.

/Andrew L Nalven/
Primary Examiner, Art Unit 3992

cc: Requester (if third party requester)

NOTICE OF INTENT TO ISSUE REEXAMINATION CERTIFICATE

The following Office Action is in response to the Patent Owner's response submitted April 11, 2011.

I. Summary of the Reexamination Proceeding

1. Reexamination was granted as to claims 1-19 on July 29, 2010.
2. Claims 1-19 were rejected in a non-final rejection on February 10, 2011.
3. Patent Owner responded to the February 10, 2011 rejection by traversing the rejections and adding new claims 20-72.

II. Status of the Claims

1. Original claims 1-19 are confirmed.
2. Newly added claims 20-72 are patentable.

III. STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

The following is an examiner's statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding:

The prior art cited in the Request, alone or in combination, fails to teach the claimed feature of "aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload."

For example, the Netrek reference fails to teach aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload. Netrek is a multiplayer game where users join teams and participate in a space war game. Netrek teaches that each user sends its game commands to the group messaging server. However, Netrek differs in that the payload messages are not explicitly aggregated into an aggregated message. Instead, the group messaging server processes the received commands and sends out a status update to all of the players informing them of the change in game play. The commands sent by the users to the group messaging server are not stripped of their payloads and aggregated. Netrek further teaches the sending of chat commands to the group messaging server. However, the source code of Netrek is unclear as to whether the chat messages would be aggregated. Accordingly, Netrek fails to teach aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload.

Further, Friedman teaches a total ordering protocol where messages are buffered and then sent out as an aggregated message (*Friedman, Page 5).* However, Friedman's buffering takes place at the host computer instead of the claimed group messaging server. Accordingly, Friedman fails to teach aggregating said payload portions of said host messages *received from said second subset of the plurality of host computers* to create an aggregated payload.

The remaining references, Ring, IRC RFC, Van Hook, DIS, Suzuki, McFadden, and IRDC 2.7h similarly do not teach the claimed feature of aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said

messages to create an aggregated payload. Accordingly, the prior art cited by the Request fails to anticipate or render obvious the claims of the '686 patent.

Any comments considered necessary by PATENT OWNER regarding the above statement must be submitted promptly to avoid processing delays. Such submission by the patent owner should be labeled: "Comments on Statement of Reasons for Patentability and/or Confirmation" and will be placed in the reexamination file.

CORRESPONDENCE

All correspondence relating to this ex parte reexamination proceeding should be directed:

By EFS: Registered users may submit via the electronic filing system EFS-Web, at https://sportal.uspto.gov/authenticate/authenticateuserlocalepf.html.

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For EFS-Web transmissions, 37 CFR 1.8(a)(1)(i) (C) and (ii) states that correspondence (except for a request for reexamination and a corrected or replacement request for reexamination) will be considered timely filed if (a) it is transmitted via the Office's electronic filing system in accordance with 37 CFR 1.6(a)(4), and (b) includes a certificate of transmission for each piece of correspondence stating the date of transmission, which is prior to the expiration of the set period of time in the Office action.

Any inquiry concerning this communication or earlier communications from the Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Andrew Nalven/

Andrew Nalven
CRU Examiner
GAU 3992
(571) 272-3839

Conferee: ESK

Conferee:

Substitute for form 1449/PTO & 1449B/PTO

THIRD INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

In re Reexamination of U.S. Patent No. / Control No.:	6,226,686 / 90/011,036
Issue Date:	September 28, 1999
First Named Inventor	Jeffrey J. Rothschild et al.
Confirmation/Group Art Unit No.	1071 / 3992
Attorney Docket No.	0078494-000002

U.S. PATENT DOCUMENTS

Exmr. Initials	Ref. No.	Document Number-Kind Code	Publication/Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear

FOREIGN PATENT DOCUMENTS

Exmr. Initials	Ref. No.	Foreign Patent Document: Country Code[1], Number, Kind Code	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant of Cited Document	STATUS: Translation	Partial Translation	Eng. Lang. Summary	Search Report	IPER	Abstract	Cited in Spec. / Pg. No(s).

[1]Enter Office that issued the document, by the two-letter code.

NON-PATENT LITERATURE DOCUMENTS

Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Exmr. Initials	Ref. No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
ESK		BENNETT, J. et al., "Munin: Distributed Shared Memory Based on Type-Specific Memory Coherence", Proceedings of 2nd ACM SIGPLAN Symposium on PPoPP, 1990, pp. 168-176
		CARTER, J. et al., "Implementation and Performance of Munin", Proceedings of 13th Symposium on Operating System Principles", 1991, pp. 152-164
		COLEMAN, S. et al., "The TCP/IP Internet DOOM FAQ", http://www.gamers.org/dhs/helpdocs/inetdoom.html, August, 1998, pp. 1-10
		COTTON, J. et al., "The TCP/IP Internet Gamer's FAQ", http://x8.dejanews.com/getdoc.xp?AN-1031, July, 1998, pp. 1-9
		COULOURIS, G. et al., "Distributed Systems: Concepts and Design", Addison-Wesley Publishing Co., 1994, pp. 333-348
		FUNKHOUSER, T., "RING: A Client-Server System for Multi-User Virtual Environments", pp. 1-9
		JAMES, R. et al., "Creating Your Own Multiplayer Game Systems", Dr. Dobb's Information Highway Sourcebook, Winter, 1994, pp. 56-64
		MACEDONIA, M. et al., "MBone Provides Audio and Video Across the Internet", IEEE Computer, Vol. 27, Issue 4, 30-36, April, 1994, pp. 1-12
		MACEDONIA, M. et al., "NPSNET: A Network Software Architecture for Large Scale Virtual Environments", Presence, Vol. 3, No. 4, Fall, 1994, pp. 1-30
		SCHULZRINNE, H. et al., "A Transport Protocol for Real-Time Applications", IETF Internet Draft draft-ietf-avt-rtp-05.txt, 1994, pp. 1-16
		WOLFE, D., "The BBS Construction Kit", 1st Ed., 1994, John Wiley & Sons, Inc., New York, pp. 1-37

Examiner Signature	/Eric Keasel/ & Valvez	Date Considered	1 MAY 2011

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90011036	6226686
	Examiner	Art Unit
	ANDREW L NALVEN	3992

ORIGINAL		INTERNATIONAL CLASSIFICATION	
CLASS	SUBCLASS	CLAIMED	NON-CLAIMED
709	245	G 0 6 F 15 / 16 (2006.01.01)	

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
709	218				

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

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		17		33		49		65						
	2		18		34		50		66						
	3		19		35		51		67						
	4		20		36		52		68						
	5		21		37		53		69						
	6		22		38		54		70						
	7		23		39		55		71						
	8		24		40		56		72						
	9		25		41		57								
	10		26		42		58								
	11		27		43		59								
	12		28		44		60								
	13		29		45		61								
	14		30		46		62								
	15		31		47		63								
	16		32		48		64								

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	72	
/ANDREW L NALVEN/ Primary Examiner.Art Unit 3992	04/19/2011	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90011036	6226686
	Examiner	Art Unit
	ANDREW L NALVEN	3992

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Reviewed Patented File's Prosecution History	7/20/2010	aln

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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BIB DATA SHEET

CONFIRMATION NO. 1071

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
90/011,036	06/14/2010 RULE	709	3992	18330.0004

APPLICANTS

6226686, Residence Not Provided;
PALTALK HOLDINGS, INC.(OWNER), New York, NY;
NOVAK DRUCE & QUIGG, LLP(3RD PTY REQ), Houston, TX;
Tracy W. Druce, Houston, TX

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

This application is a REX of 09/407,371 09/28/1999 PAT 6,226,686
which is a CON of 08/896,797 07/18/1997 PAT 6,018,766
which is a CON of 08/595,323 02/01/1996 PAT 5,822,523

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

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ANDREW L NALVEN/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
				19	6

ADDRESS

BUCHANAN, INGERSOLL & ROONEY PC
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UNITED STATES

TITLE

SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS

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Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90/011,036	6226686
	Certificate Date	Certificate Number
		C1

Requester Correspondence Address: ☐ **Patent Owner** ☒ **Third Party**

NOVAK DRUCE & QUIGG, LLP
(NDQ REEXAMINATION GROUP)
1000 LOUISIANA STREET
FIFTY-THIRD FLOOR
HOUSTON, TX 77002

LITIGATION REVIEW ☒	**aln** (examiner initials)	**7/28/10** (date)
Case Name		Director Initials
Status (OPEN) 2:09cv274 Paltalk Holdings, Inc v. Sony Computer Entertainment America, Inc		Lm Treal for RY
Status (CLOSED) 2:06cv367 Paltalk Holdings, Inc v. Microsoft Corporation		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	**NUMBER**
1. none	
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3.	
4.	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	**MAIL STOP REEXAMINATION**
U.S. Patent No. 6,226,686	Group Art Unit: 3992
Jeffrey J. Rothschild et al.	Examiner: Andrew Nalven
Issued: May 1, 2001	Confirmation No.: 1071
Reexamination Control No.: 90/011,036	
Filing Date: June 14, 2010	
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

COMMENTS ON STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

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

Sir:

In the Notice of Intent to Issue Ex Parte Reexamination Certificate dated May 2, 2011, the Examiner provided a Statement of Reasons for Patentability and/or Confirmation in which reference was made to the phrase "aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload." This phrase is not present in all of the independent claims and it is understood that the phrase is representative of the various significant but distinct features recited in the claims of record. In this respect, each of the claims of record must be considered separately and it is the elements recited in each claim taken as a whole that distinguishes the individual claim over the prior art.

Should the Examiner wish to discuss any aspect of the foregoing Comments, he is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

By: _____
Charles F. Wieland III
Registration No. 33096

Customer No. 21839
703 836 6620

Date: May 25, 2011

CERTIFICATE OF SERVICE

It is hereby certified by the undersigned that a true copy of the foregoing COMMENTS ON STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION were sent via e-mail to:

NOVAK DRUCE + QUIGG, LLP
(NDQ Reexamination Group)
1000 Louisiana Street
53rd Floor
Houston, Texas 77002

on this 25th day of May, 2011.

Charles F. Wieland III
Registration No. 33096

Electronic Acknowledgement Receipt	
EFS ID:	10165709
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	21839
Filer:	Charles F. Wieland III/Monica Pogue
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	0078494-000002
Receipt Date:	25-MAY-2011
Filing Date:	14-JUN-2010
Time Stamp:	13:22:45
Application Type:	Reexam (Patent Owner)

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		002CommentsonStmtandCertSvc.pdf	71607 40d913cc6b7fe8337bb779bacf504cd5fc44c653	yes	3

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Patent Owner Comments after Action Closing Prosecution	1	2
	Reexam Certificate of Service	3	3
Warnings:			
Information:			
	Total Files Size (in bytes):	71607	

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.

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

PATENT WITHDRAWAL NOTICE

DATE WITHDRAWN	WITHDRAWAL NUMBER
6/16/2011	19509

The following application has been **WITHDRAWN** from the

7/5/2011 issue.

SERIAL NO.	PATENT NUMBER
90/011,036	6,226,686
DRAWINGS	**CLASS**
000	709/245

TITLE

SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS

NAME AND ADDRESS

JEFFREY J. ROTHSCHILD, ET AL
LOS GATOS, CA

REASON FOR WITHDRAWAL

Administrative withdrawal after issue build.
ADMINISTRATIVE WITHDRAWAL

APPROVED

/Kimberly Terrell/, Manager

Patent Publication Branch
Office of Data Management

FORM PTO-302 -- (REV. 05-2009)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/011,036	06/14/2010	6226686	0078494-000002	1071

21839 7590 06/17/2011

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 06/17/2011

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

PTO-90C (Rev. 10/03)

UNITED STATES PATENT AND TRADEMARK OFFICE

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

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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

NOVAK DRUCE & QUIGG, LLP

(NDQ REEXAMINATION GROUP)

1000 LOUISIANA STREET

FIFTY-THIRD FLOOR

HOUSTON, TX 77002

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/011,036*.

PATENT NO. *6226686*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/011,036	Patent Under Reexamination 6226686	
	Examiner ANDREW NALVEN	Art Unit 3992	

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

a☒ Responsive to the communication(s) filed on *5/25/2011* . b☐ This action is made FINAL.
c☒ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire *2* month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☒ Information Disclosure Statement, PTO/SB/08.
3. ☐ Interview Summary, PTO-474.
4. ☐ _____.

Part II SUMMARY OF ACTION

1a. ☒ Claims *1-72* are subject to reexamination.
1b. ☐ Claims _____ are not subject to reexamination.
2. ☐ Claims _____ have been canceled in the present reexamination proceeding.
3. ☒ Claims *1-4,7-36 and 39-72* are patentable and/or confirmed.
4. ☒ Claims *5, 6, 37, and 38* are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ The drawings, filed on _____ are acceptable.
7. ☐ The proposed drawing correction, filed on _____ has been (7a)☐ approved (7b)☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some* c)☐ None of the certified copies have
   1☐ been received.
   2☐ not been received.
   3☐ been filed in Application No. _____ .
   4☐ been filed in reexamination Control No. _____.
   5☐ been received by the International Bureau in PCT application No. _____.
   * See the attached detailed Office action for a list of the certified copies not received.
9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate 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.
10. ☐ Other: _____

cc: Requester (if third party requester)

DETAILED ACTION

Status of the Reexamination Proceeding

- On June 14, 2010, reexamination was requested as to claims 1-19 of US Patent No. 6,226,686 ("the '686 Patent").
- On July 29, 2010, reexamination was ordered for all requested claims.
- On February 10, 2011, a non-final office action was issued rejecting claims 1-15 and 17-19 and confirming claim 16.
- On, May 2, 2011, a notice of intent to issue a reexamination certificate (NIRC) was mailed that confirmed as patentable and/or allowed claims 1-19 and 20-72
- On May 25, 2011, Patent Owner filed comments on the statement of reasons for patentability and/or confirmation.

Summary of the Present Office Action

- **The May 2, 2011 NIRC is hereby withdrawn.**
- Claims 1-4, 7-36, and 39-72 remain confirmed as patentable and/or allowed.
- Claims 5, 6, 37, and 38 are subject to a non-final rejection detailed below.

I. Procedures Governing Reexamination

Service

After the filing of a request for reexamination by a third party requester, any document filed by either the patent owner or the third party requester must be served on the other party (or parties where two or more third party requester proceedings are merged) in the reexamination proceeding in the manner provided in 37 CFR 1.248. See 37 CFR 1.550(f).

Proposed Amendments, Affidavits, or Declarations

In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116, after final rejection and 37 CFR 41.33 after appeal, which will be strictly enforced.

Patent owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 CFR 1.530(d)-(j), must be formally presented pursuant to 37 CFR 1.52(a) and (b), and must contain any fees required by 37 CFR 1.20(c).

Extensions of Time

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a

reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

Concurrent Litigation

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the patent at issue in this reexamination proceeding throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

II. Grounds of Rejection

Claims 5-6 and 37-38 are rejected under 35 U.S.C. 102(b) as being anticipated by IRCD 2.7h as detailed below. Further, the proposed rejection of claims 5 and 6 set forth in the June 14, 2010 request for reexamination in Claim Chart-E is incorporated by reference.

With regards to claim 5, IRCD 2.7h teaches a method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of: (*IRCD 2.7h, doc\Manual at 31-36 – IRC allows more than 2 users to talk at once with access across the aggregate Internet)*

(1) receiving a host message from one of the plurality of host computers belonging to a message group, wherein said host message contains a payload portion and a portion that is used to identify said message group (*IRCD 2.7h, doc\Comms at 242-250 – PRIVMSG – private message function takes two parameters – the text to be sent as the payload and the receiver as the identifier of the group - the receiver may be a name, list of names, or a channel)*;

(2) forming a server message using said payload portion of said host message (*IRCD 2.7h, ircd\s_msg.c at lines 658-742 – m_message is formed using payload from the client sent message in parv[2])*;

(3) transmitting said server message to each of the plurality of host computers belonging to said message group (*IRCD 2.7h, common\send.c at lines 296-326 – sendto_channel; see also ircd\s_msg.c at lines 733-742 – sendto_channel_butone functions send the message to each client in the channel)*; and

(4) suppressing said server message such that said one of the plurality of host computers which originated said host message does not receive said server message (*IRCD 2.7h, common\send.c at lines 296-326 – sendto_channel_butone function sends the message to each client, but if the FROM matches the current group member pointer then it does not send)*;

wherein said server message keeps the shared, interactive application operating consistently on each of the plurality of host computers belonging to said message group (*IRCD 2.7h, doc\Manual at 31-36 – IRC allows more than 2 users to talk at once with access across the aggregate Internet – each channel/group member receives each message sent to the channel in order to keep the chat application consistent).*

With regards to claim 6, IRCD 2.7h teaches the network is at least a portion of the Internet (*IRCD 2.7h, doc\Manual at 31-36 – IRC allows more than 2 users to talk at once with access across the aggregate Internet).*

With regards to claim 37, IRCD 2.7h teaches said host message comprises application specific state information (*IRCD 2.7h, common\send.c at lines 296-326 – sendto_channel; see also ircd\s_msg.c at lines 733-742 – sendto_channel_butone functions send the message to each client in the channel – Host Message sent by Sender includes the group identifier and a message payload that indicates the latest message state of the group chat – this message is distributed to each group member*).

With regards to claim 38, IRCD 2.7h teaches said host message comprises information that other host computers in said message group use to maintain a consistent application state (*IRCD 2.7h, common\send.c at lines 296-326 – sendto_channel; see also ircd\s_msg.c at lines 733-742 – sendto_channel_butone functions send the message to each client in the channel – Host Message sent by Sender includes the group identifier and a message payload that indicates the latest message state of the group chat – this message is distributed to each group member*).

Claims 5-6 and 37-38 are rejected under 35 U.S.C. 103(a) as being obvious over IRC RFC in view of IRCD 2.7h as detailed below. Further, the proposed rejection of claims 5 and 6 set forth in the June 14, 2010 request for reexamination in Claim Chart-F is incorporated by reference.

With regards to claim 5, IRC RFC teaches a method for facilitating communications among a plurality of host computers over a network to implement a shared, interactive application, comprising the steps of: (*IRC RFC, §1 - IRC...is a teleconferencing system, which...is well suited to running on many machines in a distributed fashion...a central point for clients...to connect to, performing the required message delivery/multiplexing and other functions; §3.2.2 - if there are multiple users on a server in the same channel, the message text is sent only once to that server and then sent to each client on the channel. This action is then repeated for each client-server combination until the original message has fanned out and reached each member of the channel)*

(1) receiving a host message from one of the plurality of host computers belonging to a message group, wherein said host message contains a payload portion and a portion that is used to identify said message group (*IRC RFC, §4.4.1 – PRIVMSG – private message function takes two parameters – the text to be sent as the payload and the receiver as the identifier of the group - the receiver may be a name, list of names, or a channel separated by commas)*;

(2) forming a server message using said payload portion of said host message (*IRC RFC, §3.2.2 – Example 6 – all messages to the channel are sent to all clients; §4.4.1)*;

(3) transmitting said server message to each of the plurality of host computers belonging to said message group (*IRC RFC, §3.2.2 - "In IRC the channel has a role equivalent to that of the multicast group; their existence is dynamic (coming and going as people join and leave channels) and the actual conversation carried out on a channel is only sent to servers which are supporting users on a given channel. If there are multiple users on a server in the same channel, the message text is sent only once to that server and then sent to each client on the channel. This action is then repeated for each client-server combination until the original message has fanned out and reached each member of the channel.")*; and

wherein said server message keeps the shared, interactive application operating consistently on each of the plurality of host computers belonging to said message group (*IRC FRC, §1 - IRC...is a teleconferencing system, which...is well suited to running on many machines in a distributed fashion...a central point for clients...to connect to, performing the required message delivery/multiplexing and other functions; §3.2.2 - if there are multiple users on a server in the same channel, the message text is sent only once to that server and then sent to each client on the channel. This action is then repeated for each client-server combination until the original message has fanned out and reached each member of the channel).*

IRC RFC suggests the suppressing of the server message such that said one of the plurality of host computers which originated said host message does not receive said server message by disclosing an example where a message sent by client 1 is forwarded to clients 2 and 3 (*IRC RFC, §3.2.2 - "Example 6: Clients 1, 2 and 3 in a channel. All messages to the channel are sent to all clients and only those servers which must be traversed by the message if it were a*

private message to a single client. If client 1 sends a message, it goes back to client 2 and then via server B to client 3."). However, IRC RFC does not explicitly state that suppression occurs.

However, IRCD 2.7 teaches suppressing said server message such that said one of the plurality of host computers which originated said host message does not receive said server message (*IRCD 2.7h, common\send.c at lines 296-326 – sendto_channel_butone function sends the message to each client, but if the FROM matches the current group member pointer then it does not send).*

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize IRCD 2.7h's method of message suppression because it offers the advantage of providing efficient teleconferencing by reducing the number of messages that must be transmitted (*IRC RFC § 3.2).*

With regards to claim 6, IRC RFC as modified teaches the network is at least a portion of the Internet (*IRCD 2.7h, doc\Manual at 31-36 – IRC allows more than 2 users to talk at once with access across the aggregate Internet; IRC RFC, §1).*

With regards to claim 37, IRC RFC as modified teaches said host message comprises application specific state information (*IRC RFC, §3.2.2 - "Example 6: Clients 1, 2 and 3 in a channel. All messages to the channel are sent to all clients and only those servers which must be traversed by the message if it were a private message to a single client. If client 1 sends a message, it goes back to client 2 and then via server B to client 3." – Host Message sent by*

Client 1 includes the group identifier and a message payload that indicates the latest message state of the group chat – this message is distributed to each group member).

With regards to claim 38, IRC RFC as modified teaches said host message comprises information that other host computers in said message group use to maintain a consistent application state (*IRC RFC, §3.2.2 - "Example 6: Clients 1, 2 and 3 in a channel. All messages to the channel are sent to all clients and only those servers which must be traversed by the message if it were a private message to a single client. If client 1 sends a message, it goes back to client 2 and then via server B to client 3." – Host Message sent by Client 1 includes the group identifier and a message payload that indicates the latest message state of the group chat – this message is distributed to each group member*).

STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

Claims 1-4 and 7-19 are confirmed as patentable.

Claims 20-36 and 39-72 are allowed.

The following is an examiner's statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding:

Beginning with claims 1, 3, 12, and 18, the prior art cited in the Request, alone or in combination, fails to teach the claimed feature of "aggregating."

Claim 1 recites the feature as "aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload."

Claim 3 recites the feature as "aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated message."

Claim 12 recites the feature as "aggregating said payload portions of said messages received from said subset of the plurality of host computers to create an aggregated payload."

Claim 18 recites the feature as "aggregating said payload portion with the payload portion of a second host message received from another of the plurality of host computers belonging to said message group."

For example, the Netrek reference fails to teach aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload. Netrek is a multiplayer game where users join teams and participate in a space war game. Netrek teaches that each user sends its game commands to the group messaging server. However, Netrek differs in that the payload messages are not explicitly aggregated into an aggregated message. Instead, the group messaging server processes the received commands and sends out a status update to all of the players informing them of the change in game play. The commands sent by the users to the group messaging server are not stripped of their payloads and aggregated. Netrek further teaches the sending of chat commands to the group messaging server. However, the source code of Netrek is unclear as to whether the chat messages would be aggregated. Accordingly, Netrek fails to teach aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload.

Further, Friedman teaches a total ordering protocol where messages are buffered and then sent out as an aggregated message (*Friedman, Page 5).* However, Friedman's buffering takes place at the host computer instead of the claimed group messaging server. Accordingly, Friedman fails to teach aggregating said payload portions of said host messages *received from said second subset of the plurality of host computers* to create an aggregated payload.

The remaining references, Ring, IRC RFC, Van Hook, DIS, Suzuki, McFadden, and IRDC 2.7h similarly do not teach the claimed feature of aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload. Accordingly, the prior art cited by the Request fails

to anticipate or render obvious claims 1, 3, 12, 18 and all claims dependent therefrom of the '686 patent.

Turning to claim 16, claim 16 requires that the pre-determined time interval be equivalent to the amount of time for the group messaging server to receive at least one message from each of the plurality of host computers belonging to the first message group. None of the prior art submitted by Requester teaches this feature. The closest submitted art, Van Hook, teaches that the pre-determined time interval is decided by when the maximum bundle size (ie – the bundle of payloads received from the host computers reaches a maximum) is reached or when a predetermined amount of time passes without reception of an additional message from one of the host computers. However, neither Van Hook nor any of the other submitted references teach that a pre-determined time interval is equivalent to the amount of time for the group messaging server to receive at least one message from each of the plurality of host computers belonging to the first message group.

Any comments considered necessary by PATENT OWNER regarding the above statement must be submitted promptly to avoid processing delays. Such submission by the patent owner should be labeled: "Comments on Statement of Reasons for Patentability and/or Confirmation" and will be placed in the reexamination file.

CORRESPONDENCE

All correspondence relating to this ex parte reexamination proceeding should be directed:

By EFS: Registered users may submit via the electronic filing system EFS-Web, at https://sportal.uspto.gov/authenticate/authenticateuserlocalepf.html.

By Mail to: Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
Central Reexamination Unit

By hand: Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

For EFS-Web transmissions, 37 CFR 1.8(a)(1)(i) (C) and (ii) states that correspondence (except for a request for reexamination and a corrected or replacement request for reexamination) will be considered timely filed if (a) it is transmitted via the Office's electronic filing system in accordance with 37 CFR 1.6(a)(4), and (b) includes a certificate of transmission for each piece of correspondence stating the date of transmission, which is prior to the expiration of the set period of time in the Office action.

Any inquiry concerning this communication or earlier communications from the Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Andrew Nalven/

Andrew Nalven
CRU Examiner
GAU 3992
(571) 272-3839

Conferee: JS

Conferee: ESK

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90/011,036	6226686
	Certificate Date	Certificate Number

Requester Correspondence Address: ☐ Patent Owner ☒ Third Party
NOVAK DRUCE & QUIGG, LLP (NDQ REEXAMINATION GROUP) 1000 LOUISIANA STREET FIFTY-THIRD FLOOR HOUSTON, TX 77002

LITIGATION REVIEW ☒	aln (examiner initials)	7/28/10 (date)
Case Name		Director Initials
Status (OPEN) 2:09cv274 Paltalk Holdings, Inc v. Sony Computer Entertainment America, Inc		Lee Pearl for RY
Status (CLOSED) 2:06cv367 Paltalk Holdings, Inc v. Microsoft Corporation		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	NUMBER
1. none	
2.	
3.	
4.	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	**MAIL STOP REEXAMINATION**
U.S. Patent No. 6,226,686	Group Art Unit: 3992
Jeffrey J. Rothschild et al.	Examiner: Andrew Nalven
Issued: May 1, 2001	Confirmation No.: 1071
Reexamination Control No.: 90/011,036	
Filing Date: June 14, 2010	
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

SECOND AMENDMENT

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

Sir:

In response to the Office Action dated June 17, 2011, please amend the above-identified patent as follows:

AMENDMENTS TO THE CLAIMS:

Please cancel claims 5, 6, 37 and 38 without prejudice or disclaimer.

REMARKS

In reply to the Office Action of June 17, 2011, the Patent Owner (PalTalk Holdings, Inc.) respectfully requests reconsideration. Claims 1-4, 7-36 and 39-72 are pending and claims 5, 6, 37 and 38 are cancelled. Patent Owner appreciates the indication in the Office Action of June 17, 2011 that claims 1-4, 7-36 and 39-72 are patentable and/or confirmed.

The Office Action of June 17, 2011, also includes a rejection of claims 5, 6, 37 and 38 under 35 U.S.C. § 102(b) as allegedly being anticipated by IRCD 2.7h; and an alternative rejection of claims 5, 6, 37 and 38 under 35 U.S.C. § 103(a) as allegedly being anticipated by IRC RFC in view of IRCD 2.7h. These rejections are respectfully traversed.

Patent Owner respectfully submits that the applied art, alone or in combination, at least does not teach or suggest, *inter alia*, a "server message [formed by using the payload portion] that keeps the shared, interactive application operating consistently on each of the plurality of host computers belonging to said message group" as recited in rejected independent claim 5.

However, out of expediency and without acquiescing to the grounds of the rejection, Patent Owner has elected to cancel all of the rejected claims without prejudice or disclaimer to the subject matter contained therein.

With respect to the Examiner's Statement of Reasons for Allowance, Patent Owner notes that the Office identified recitations from each of claims 1, 3, 12 and 18, and understands that the Office is identifying these in the context of the claims from

which they were copied, rather than suggesting those features are patentable in isolation. The Office also specifically addressed the recitations of dependent claim 16, which is appreciated, but does not suggest other dependent claims are any less independently separately patentable.

In light of the foregoing, the Patent Owner respectfully requests re-issuance of a Notice of Intent to Issue a Reexamination Certificate. Should any residual issues exist or arise, the Examiner is invited to contact the undersigned at the number listed below.

The Director is hereby authorized to charge any appropriate fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: June 21, 2011

By: _____
Charles F. Wieland III
Registration No. 33096

Customer No. 21839
703 836 6620

CERTIFICATE OF SERVICE

It is hereby certified by the undersigned that a true copy of the foregoing **Second Amendment** was sent via e-mail to:

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1000 Louisiana Street
53rd Floor
Houston, Texas 77002

on this 21st day of June, 2011.

Charles F. Wieland III
Registration No. 33096

Electronic Acknowledgement Receipt

EFS ID:	10356527
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	21839
Filer:	Charles F. Wieland III/Jean Bayou
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	0078494-000002
Receipt Date:	21-JUN-2011
Filing Date:	14-JUN-2010
Time Stamp:	19:15:33
Application Type:	Reexam (Patent Owner)

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	Response after non-final action-owner timely	6226686_2ND_AMDT.pdf	120465 19d305408038232d6c199faa8019a25170d6ab65	no	5

Warnings:	
Information:	

Total Files Size (in bytes):	120465

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

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

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

Reexamination
Attorney Docket No. 0078494-000002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of	**MAIL STOP REEXAMINATION**
U.S. Patent No. 6,226,686	Group Art Unit: 3992
Jeffrey J. Rothschild et al.	Examiner: Andrew Nalven
Issued: May 1, 2001	Confirmation No.: 1071
Reexamination Control No.: 90/011,036	
Filing Date: June 14, 2010	
For: SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS	

CERTIFICATE OF SERVICE

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

Sir:

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(NDQ Reexamination Group)
1000 Louisiana Street
53rd Floor
Houston, Texas 77002

on this 30th day of June, 2011.

Charles F. Wieland III
Registration No. 33096

Electronic Acknowledgement Receipt

EFS ID:	10431561
Application Number:	90011036
International Application Number:	
Confirmation Number:	1071
Title of Invention:	SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS
First Named Inventor/Applicant Name:	6226686
Customer Number:	21839
Filer:	Charles F. Wieland III/Rosemary Shelton
Filer Authorized By:	Charles F. Wieland III
Attorney Docket Number:	0078494-000002
Receipt Date:	30-JUN-2011
Filing Date:	14-JUN-2010
Time Stamp:	17:21:03
Application Type:	Reexam (Patent Owner)

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	Reexam Certificate of Service	0078494002COS.pdf	34455 499ce9fe8c4da4de16c342f37327315afde3466b	no	1

Warnings:	
Information:	

Total Files Size (in bytes):	34455

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

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

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

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/011,036	06/14/2010	6226686	0078494-000002	1071

21839 7590 07/06/2011

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 07/06/2011

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

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NOVAK DRUCE & QUIGG, LLP

(NDQ REEXAMINATION GROUP)

1000 LOUISIANA STREET

FIFTY-THIRD FLOOR

HOUSTON, TX 77002

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/011,036*.

PATENT NO. *6226686*.

ART UNIT *3992*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Notice of Intent to Issue Ex Parte Reexamination Certificate	Control No.	Patent Under Reexamination	
	90/011,036	6226686	
	Examiner	Art Unit	
	ANDREW NALVEN	3992	

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

1. ☒ Prosecution on the merits is (or remains) closed in this *ex parte* reexamination proceeding. This proceeding is subject to reopening at the initiative of the Office or upon petition. *Cf.* 37 CFR 1.313(a). A Certificate will be issued in view of
   - (a) ☒ Patent owner's communication(s) filed: *21 June 2011*.
   - (b) ☐ Patent owner's late response filed: _____.
   - (c) ☐ Patent owner's failure to file an appropriate response to the Office action mailed: _____.
   - (d) ☐ Patent owner's failure to timely file an Appeal Brief (37 CFR 41.31).
   - (e) ☐ Other: _____.

   Status of *Ex Parte* Reexamination:
   - (f) Change in the Specification: ☐ Yes ☒ No
   - (g) Change in the Drawing(s): ☐ Yes ☒ No
   - (h) Status of the Claim(s):
     - (1) Patent claim(s) confirmed: *1-4 and 7-19*.
     - (2) Patent claim(s) amended (including dependent on amended claim(s)): _____
     - (3) Patent claim(s) canceled: _____.
     - (4) Newly presented claim(s) patentable: 20-36 and 39-72.
     - (5) Newly presented canceled claims: 5,6,37 and 38.
     - (6) Patent claim(s) ☐ previously ☐ currently disclaimed: _____
     - (7) Patent claim(s) not subject to reexamination: _____.

2. ☒ Note the attached statement of reasons for patentability and/or confirmation. Any comments considered necessary by patent owner regarding reasons for patentability and/or confirmation must be submitted promptly to avoid processing delays. Such submission(s) should be labeled: "Comments On Statement of Reasons for Patentability and/or Confirmation."
3. ☐ Note attached NOTICE OF REFERENCES CITED (PTO-892).
4. ☐ Note attached LIST OF REFERENCES CITED (PTO/SB/08 or PTO/SB/08 substitute).
5. ☐ The drawing correction request filed on _____ is: ☐ approved ☐ disapproved.
6. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All b)☐ Some* c)☐ None of the certified copies have
   - ☐ been received.
   - ☐ not been received.
   - ☐ been filed in Application No. _____.
   - ☐ been filed in reexamination Control No. _____.
   - ☐ been received by the International Bureau in PCT Application No. _____.

   * Certified copies not received: _____.
7. ☐ Note attached Examiner's Amendment.
8. ☐ Note attached Interview Summary (PTO-474).
9. ☐ Other: _____.

/Andrew L Nalven/
Primary Examiner, Art Unit 3992

cc: Requester (if third party requester)

NOTICE OF INTENT TO ISSUE REEXAMINATION CERTIFICATE

The following Office Action is in response to the Patent Owner's submission received June 21, 2011.

I. Summary of the Reexamination Proceeding

1. On June 14, 2010, reexamination was requested as to claims 1-19 of US Patent No. 6,226,686 ("the '686 Patent").
2. On July 29, 2010, reexamination was ordered for all requested claims.
3. On February 10, 2011, a non-final office action was issued rejecting claims 1-15 and 17-19 and confirming claim 16.
4. On, May 2, 2011, a notice of intent to issue a reexamination certificate (NIRC) was mailed that confirmed as patentable and/or allowed claims 1-19 and 20-72
5. On May 25, 2011, Patent Owner filed comments on the statement of reasons for patentability and/or confirmation.
6. On June 17, 2011, the prior NIRC was withdrawn and a non-final office action was issued rejecting claims 5, 6, 37, and 38 while confirming claims 1-4, 7-36, and 39-72.
7. On June 21, 2011, Patent Owner responded by canceling claims 5, 6, 37, and 38.

II. Status of the Claims

1. Original claims 1-4 and 7-19 are confirmed.
2. Newly added claims 20-36 and 39-72 are patentable.

3. Original claims 5 and 6 and newly presented claims 37 and 38 are canceled.

III. STATEMENT OF REASONS FOR PATENTABILITY AND/OR CONFIRMATION

Claims 1-4 and 7-19 are confirmed as patentable.

Claims 20-36 and 39-72 are allowed.

The following is an examiner's statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding and is identical to what was presented in the June 17, 2011 non-final office action:

Beginning with claims 1, 3, 12, and 18, the prior art cited in the Request, alone or in combination, fails to teach the claimed feature of "aggregating."

Claim 1 recites the feature as "aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload."

Claim 3 recites the feature as "aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated message."

Claim 12 recites the feature as "aggregating said payload portions of said messages received from said subset of the plurality of host computers to create an aggregated payload."

Claim 18 recites the feature as "aggregating said payload portion with the payload portion of a second host message received from another of the plurality of host computers belonging to said message group."

For example, the Netrek reference fails to teach aggregating said payload portions of said host messages received from said second subset of the plurality of host computers to create an aggregated payload. Netrek is a multiplayer game where users join teams and participate in a space war game. Netrek teaches that each user sends its game commands to the group messaging server. However, Netrek differs in that the payload messages are not explicitly aggregated into an aggregated message. Instead, the group messaging server processes the received commands and sends out a status update to all of the players informing them of the change in game play. The commands sent by the users to the group messaging server are not stripped of their payloads and aggregated. Netrek further teaches the sending of chat commands to the group messaging server. However, the source code of Netrek is unclear as to whether the chat messages would be aggregated. Accordingly, Netrek fails to teach aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload.

Further, Friedman teaches a total ordering protocol where messages are buffered and then sent out as an aggregated message (*Friedman, Page 5).* However, Friedman's buffering takes place at the host computer instead of the claimed group messaging server. Accordingly, Friedman fails to teach aggregating said payload portions of said host messages *received from said second subset of the plurality of host computers* to create an aggregated payload.

The remaining references, Ring, IRC RFC, Van Hook, DIS, Suzuki, McFadden, and IRDC 2.7h similarly do not teach the claimed feature of aggregating, by said server in a time interval determined in accordance with a predefined criterion, said payload portions of said messages to create an aggregated payload. Accordingly, the prior art cited by the Request fails to anticipate or render obvious claims 1, 3, 12, 18 and all claims dependent therefrom of the '686 patent.

Turning to claim 16, claim 16 requires that the pre-determined time interval be equivalent to the amount of time for the group messaging server to receive at least one message from each of the plurality of host computers belonging to the first message group. None of the prior art submitted by Requester teaches this feature. The closest submitted art, Van Hook, teaches that the pre-determined time interval is decided by when the maximum bundle size (ie – the bundle of payloads received from the host computers reaches a maximum) is reached or when a predetermined amount of time passes without reception of an additional message from one of the host computers. However, neither Van Hook nor any of the other submitted references teach that a pre-determined time interval is equivalent to the amount of time for the group messaging server to receive at least one message from each of the plurality of host computers belonging to the first message group.

Any comments considered necessary by PATENT OWNER regarding the above statement must be submitted promptly to avoid processing delays. Such submission by the

patent owner should be labeled: "Comments on Statement of Reasons for Patentability and/or Confirmation" and will be placed in the reexamination file.

CORRESPONDENCE

All correspondence relating to this ex parte reexamination proceeding should be directed:

By EFS: Registered users may submit via the electronic filing system EFS-Web, at https://sportal.uspto.gov/authenticate/authenticateuserlocalepf.html.

By Mail to:
Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to:
(571) 273-9900
Central Reexamination Unit

By hand:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

For EFS-Web transmissions, 37 CFR 1.8(a)(1)(i) (C) and (ii) states that correspondence (except for a request for reexamination and a corrected or replacement request for reexamination) will be considered timely filed if (a) it is transmitted via the Office's electronic filing system in accordance with 37 CFR 1.6(a)(4), and (b) includes a certificate of transmission for each piece of correspondence stating the date of transmission, which is prior to the expiration of the set period of time in the Office action.

Any inquiry concerning this communication or earlier communications from the Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

/Andrew Nalven/

Andrew Nalven
CRU Examiner
GAU 3992
(571) 272-3839

Conferee: ESK

Conferee: MON

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BIB DATA SHEET

CONFIRMATION NO. 1071

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
90/011,036	06/14/2010 RULE	709	3992	18330.0004

APPLICANTS

6226686, Residence Not Provided;
PALTALK HOLDINGS, INC.(OWNER), New York, NY;
NOVAK DRUCE & QUIGG, LLP(3RD PTY REQ), Houston, TX;
Tracy W. Druce, Houston, TX

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

This application is a REX of 09/407,371 09/28/1999 PAT 6,226,686
which is a CON of 08/896,797 07/18/1997 PAT 6,018,766
which is a CON of 08/595,323 02/01/1996 PAT 5,822,523

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

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ANDREW L NALVEN/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
				19	6

ADDRESS

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404
UNITED STATES

TITLE

SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS

FILING FEE RECEIVED		
2520	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90011036	6226686
	Examiner	Art Unit
	ANDREW L NALVEN	3992

SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Reviewed Patented File's Prosecution History	7/20/2010	aln

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90011036	6226686
	Examiner	Art Unit
	ANDREW L NALVEN	3992

ORIGINAL		INTERNATIONAL CLASSIFICATION									
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED				
709	245	G	0	6	F	15 / 16 (2006.01.01)					

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
709	218				

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

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	17	17	33	33	47	49	63	65						
2	2	18	18	34	34	48	50	64	66						
3	3	19	19	35	35	49	51	65	67						
4	4	20	20	36	36	50	52	66	68						
	5	21	21		37	51	53	67	69						
	6	22	22		38	52	54	68	70						
7	7	23	23	37	39	53	55	69	71						
8	8	24	24	38	40	54	56	70	72						
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10	10	26	26	40	42	56	58								
11	11	27	27	41	43	57	59								
12	12	28	28	42	44	58	60								
13	13	29	29	43	45	59	61								
14	14	30	30	44	46	60	62								
15	15	31	31	45	47	61	63								
16	16	32	32	46	48	62	64								

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	68	
/ANDREW L NALVEN/ Primary Examiner.Art Unit 3992	06/28/11	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90/011,036	6226686
	Certificate Date	Certificate Number
		C1

Requester Correspondence Address: ☐ Patent Owner ☒ Third Party
NOVAK DRUCE & QUIGG, LLP (NDQ REEXAMINATION GROUP) 1000 LOUISIANA STREET FIFTY-THIRD FLOOR HOUSTON, TX 77002

LITIGATION REVIEW ☒	aln (examiner initials)	6/28/11 (date)
Case Name		Director Initials
Status (OPEN) 2:09cv274 Paltalk Holdings, Inc v. Sony Computer Entertainment America, Inc		Eric Keasel for RY
Status (CLOSED) 2:06cv367 Paltalk Holdings, Inc v. Microsoft Corporation		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	NUMBER
1. none	
2.	
3.	
4.	

US006226686C1

(12) **EX PARTE REEXAMINATION CERTIFICATE** (9065th)

United States Patent
Rothschild et al.

(10) **Number: US 6,226,686 C1**
(45) **Certificate Issued: Jun. 12, 2012**

(54) **SERVER-GROUP MESSAGING SYSTEM FOR INTERACTIVE APPLICATIONS**

(75) Inventors: **Jeffrey Jackiel Rothschild**, Los Gatos, CA (US); **Daniel Joseph Samuel**, Sunnyvale, CA (US); **Marc Peter Kwiatkowski**, Los Gatos, CA (US)

(73) Assignee: **Cricket Communications, Inc.**, San Diego, CA (US)

Reexamination Request:
No. 90/011,036, Jun. 14, 2010

Reexamination Certificate for:
Patent No.: **6,226,686**
Issued: **May 1, 2001**
Appl. No.: **09/407,371**
Filed: **Sep. 28, 1999**

Related U.S. Application Data

(63) Continuation of application No. 08/896,797, filed on Jul. 18, 1997, now Pat. No. 6,018,766, which is a continuation of application No. 08/595,323, filed on Feb. 1, 1996, now Pat. No. 5,822,523.

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

(52) **U.S. Cl.** **709/245**; 709/218
(58) **Field of Classification Search** ..... None
See application file for complete search history.

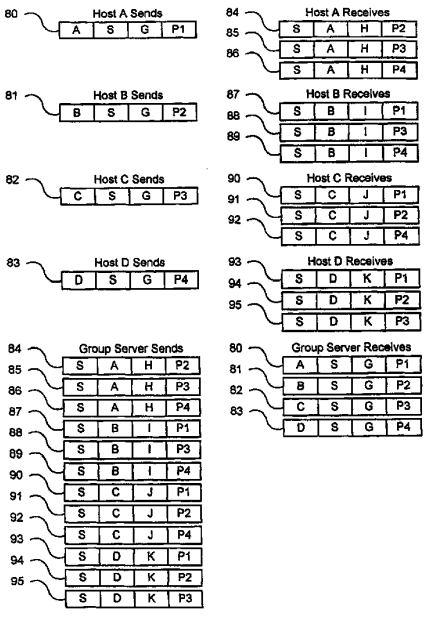
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/011,036, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner—Andrew L Nalven

(57) **ABSTRACT**

A method for deploying interactive applications over a network containing host computers and group messaging servers is disclosed. The method operates in a conventional unicast network architecture comprised of conventional network links and unicast gateways and routers. The hosts send messages containing destination group addresses by unicast to the group messaging servers. The group addresses select message groups maintained by the group messaging servers. For each message group, the group messaging servers also maintain a list of all of the hosts that are members of the particular group. In its most simple implementation, the method consists of the group server receiving a message from a host containing a destination group address. Using the group address, the group messaging server then selects a message group which lists all of the host members of the group which are the targets of messages to the group. The group messaging server then forwards the message to each of the target hosts. In an interactive application, many messages will be arriving at the group server close to one another in time. Rather than simply forward each message to its targeted hosts, the group messaging server aggregates the contents of each of messages received during a specified time period and then sends an aggregated message to the targeted hosts. The time period can be defined in a number of ways. This method reduces the message traffic between hosts in a networked interactive application and contributes to reducing the latency in the communications between the hosts.



EX PARTE REEXAMINATION CERTIFICATE ISSUED UNDER 35 U.S.C. 307

THE PATENT IS HEREBY AMENDED AS INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

The patentability of claims **1-4** and **7-19** is confirmed.

Claims **5** and **6** are cancelled.

New claims **20-70** are added and determined to be patentable.

20. The method of claim 1, wherein a server implements a group messaging protocol layered on top of a transport protocol of said network, wherein said group messaging protocol uses an address space that is separate from an address space of said transport protocol.

21. The method of claim 20, wherein said group messaging protocol is performed at a session layer.

22. The method of claim 1, further comprising the step of performing, by said server, echo suppression.

23. The method of claim 1, wherein said plurality of host computers belonging to said message group correspond to players that are in close proximity to one another within a three-dimensional space of a computer game.

24. The method of claim 1, further comprising the step of changing membership of said message group based on activities of players within a computer game.

25. The method of claim 1, further comprising the step of changing membership of said message group based on changes in player position within a three-dimensional space of a computer game.

26. The method of claim 1, wherein membership of said message group changes dynamically over time.

27. The method of claim 1, wherein said application is a game.

28. The method of claim 1, wherein said transmitting is performed by an upper-level protocol implemented above a transport layer protocol of said network, wherein said transport layer protocol is TCP/IP.

29. The method of claim 1, wherein said transmitting are performed by an upper-level protocol implemented above a transport layer protocol of said network, wherein said plurality of host computers are unable to send upper-level protocol messages to one another except through said group messaging server.

30. The method of claim 1, further comprising the steps of:

a server receiving a control message to close said message group; and

removing said message group in response to receiving said request.

31. The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query message groups of said server; and

providing said list of message groups to said first host computer in response to said receiving said control message.

32. The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query members of said message group; and

providing a list of members of said message group to said first host computer in response to receiving said control message.

33. The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query attributes of said message group; and

providing attributes of said message group to said first host computer in response to receiving control message.

34. The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to connect to said group messaging server; and

storing information regarding said first host computer in response to receiving said control message.

35. The method of claim 1, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to disconnect from said group messaging server; and

removing information regarding said first host computer in response to receiving said control message.

36. The method of claim 1, further comprising the step of forming said aggregated message by compressing said aggregated payload.

37. The method of claim 5, wherein said host message comprises application specific state information.

38. The method of claim 5, wherein said host message comprises information that other host computers in said message group use to maintain a consistent application state.

39. The method of claim 12, wherein a server implements a group messaging protocol layered on top of a transport protocol of said network, wherein said group messaging protocol uses an address space that is separate from an address space of said transport protocol.

40. The method of claim 39, wherein said first group messaging protocol is performed at a session layer.

41. The method of claim 12, further comprising the step of performing, by said server, echo suppression.

42. The method of claim 12, wherein said plurality of host computers belonging to said first message group correspond to players that are in close proximity to one another within a three-dimensional space of a computer game.

43. The method of claim 12, further comprising the step of changing membership of said first message group based on activities of players within a computer game.

44. The method of claim 12, further comprising the step of changing membership of said first message group based on changes in player position within a three-dimensional space of a computer game.

45. The method of claim 12, wherein membership of said first message group changes dynamically over time.

46. The method of claim 12, wherein said application is a game.

47. The method of claim 12, wherein said transmitting are performed by an upper-level protocol implemented above a transport layer protocol of said unicast network, wherein said transport layer protocol is TCP/IP.

48. The method of claim 12, wherein said transmitting are performed by an upper-level protocol implemented above a transport layer protocol of said unicast network, wherein said plurality of host computers are unable to send upper-level protocol messages to one another except through said group messaging server.

49. The method of claim 12, further comprising the steps of:

a server receiving a control message to close said first message group; and

removing said first message group in response to receiving said request.

50. The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query message groups of said server; and

providing said list of message groups to said first host computer in response to said receiving said control message.

51. The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query members of said first message group; and

providing a list of members of said first message group to said first host computer in response to receiving said control message.

52. The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query attributes of said first message group; and

providing attributes of said first message group to said first host computer in response to receiving control message.

53. The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to connect to said first group messaging server; and

storing information regarding said first host computer in response to receiving said control message.

54. The method of claim 12, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to disconnect from said first group messaging server; and

removing information regarding said first host computer in response to receiving said control message.

55. The method of claim 12, further comprising the step of forming said aggregated message by compressing said aggregated payload.

56. The method of claim 18, wherein a server implements a group messaging protocol layered on top of a transport protocol of said network, wherein said group messaging protocol uses an address space that is separate from an address space of said transport protocol.

57. The method of claim 56, wherein said group messaging protocol is performed at a session layer.

58. The method of claim 18, further comprising the step of performing, by said server, echo suppression.

59. The method of claim 18, wherein said plurality of host computers belonging to said message group correspond to players that are in close proximity to one another within a three-dimensional space of a computer game.

60. The method of claim 18, further comprising the step of changing membership of said message group based on activities of players within a computer game.

61. The method of claim 18, further comprising the step of changing membership of said message group based on changes in player position within a three-dimensional space of a computer game.

62. The method of claim 18, wherein membership of said message group changes dynamically over time.

63. The method of claim 18, wherein said application is a game.

64. The method of claim 18, wherein said transmitting is performed by an upper-level protocol implemented above a transport layer protocol of said network, wherein said transport layer protocol is TCP/IP.

65. The method of claim 18, wherein said transmitting are performed by an upper-level protocol implemented above a transport layer protocol of said network, wherein said plurality of host computers are unable to send upper-level protocol messages to one another except through said group messaging server.

66. The method of claim 18, further comprising the steps of:

a server receiving a control message to close said message group; and

removing said message group in response to receiving said request.

67. The method of claim 18, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query message groups of said server; and

providing said list of message groups to said first host computer in response to said receiving said control message.

68. The method of claim 18, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query members of said message group; and

providing a list of members of said message group to said first host computer in response to receiving said control message.

69. The method of claim 18, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to query attributes of said message group; and

providing attributes of said message group to said first host computer in response to receiving control message.

70. The method of claim 18, further comprising the steps of:

a server receiving, from a first host computer of said plurality of host computers, a control message to connect ot said group messaging server; and

storing information regarding said first host computer in response to receiving said control message.

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