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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	11/11/2014	8886831	CPOL.778793	7705

62147 7590 10/22/2014

PATTERSON & SHERIDAN, LLP/CISC
24 Greenway Plaza
SUITE 1600
HOUSTON, TX 77046-2472

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

The Patent Term Adjustment is 1168 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

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

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

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

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

Gokul S. Tirumalai, San Jose, CA;
Albert Hyde Mitchell, San Jose, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PART B - FEE(S) TRANSMITTAL

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

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

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

62147 7590 07/08/2014
PATTERSON & SHERIDAN, LLP/CISC
24 Greenway Plaza
SUITE 1600
HOUSTON, TX 77046-2472

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

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

Victoria Kubitskey	(Depositor's name)
/Victoria Kubitskey/	(Signature)
October 8, 2014	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tirumalai	CPOL.778793	7705

TITLE OF INVENTION: System and methodology for fast link failover based on remote upstream failures

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	10/08/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
MA, WING	2456	709-239000

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

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

1 Patterson & Sheridan LLP
2
3

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

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

(A) NAME OF ASSIGNEE: Cisco Technology, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): San Jose, California

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

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

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☑ Payment by credit card.
- ☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number **20-0782/CPOL778793/JKS**

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Jon K. Stewart/ Date October 8, 2014

Typed or printed name Jon K. Stewart Registration No. 54,945

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Quicker Connections - Exhibit 2011
IPR2025-01088 - Page 2

Electronic Patent Application Fee Transmittal

Application Number:	11398519
Filing Date:	05-Apr-2006
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Filer:	Jon K. Stewart/Victoria Kubitskey
Attorney Docket Number:	CPOL778793

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	960	960
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**960**

Electronic Acknowledgement Receipt	
EFS ID:	20362087
Application Number:	11398519
International Application Number:	
Confirmation Number:	7705
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Customer Number:	62147
Filer:	Jon K. Stewart/Victoria Kubitskey
Filer Authorized By:	Jon K. Stewart
Attorney Docket Number:	CPOL778793
Receipt Date:	08-OCT-2014
Filing Date:	05-APR-2006
Time Stamp:	14:21:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$960
RAM confirmation Number	587
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Issue Fee Payment (PTO-85B)	CPOL778793_IssueFee.pdf	90283 32bb31a1c1a4e4d0593892a9d1e8fce8bc3 98d2	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30382 e6aace0959ee7410958d8fd8c867acc25075 56fc2	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	120665		

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

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

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

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

62147 7590 07/08/2014
PATTERSON & SHERIDAN, LLP/CISC
24 Greenway Plaza
SUITE 1600
HOUSTON, TX 77046-2472

EXAMINER	
MA, WING	
ART UNIT	PAPER NUMBER
2456	

DATE MAILED: 07/08/2014

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tirumalai	CPOL.778793	7705

TITLE OF INVENTION: System and methodology for fast link failover based on remote upstream failures

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	10/08/2014

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

PART B - FEE(S) TRANSMITTAL

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

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

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

62147 7590 07/08/2014
PATTERSON & SHERIDAN, LLP/CISC
24 Greenway Plaza
SUITE 1600
HOUSTON, TX 77046-2472

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

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tirumalai	CPOL.778793	7705

TITLE OF INVENTION: System and methodology for fast link failover based on remote upstream failures

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	10/08/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
MA, WING	2456	709-239000

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

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

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

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

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

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

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

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

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Quicker Connections - Exhibit 2011
IPR2025-01088 - Page 8

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.
11/398,519	04/05/2006	Gokul S. Tirumalai	CPOL.778793	7705

62147 7590 07/08/2014
PATTERSON & SHERIDAN, LLP/CISC
24 Greenway Plaza
SUITE 1600
HOUSTON, TX 77046-2472

EXAMINER	
MA, WING	

ART UNIT	PAPER NUMBER
2456	

DATE MAILED: 07/08/2014

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

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

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

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

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	11/398,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	WING MA	2456	

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

(1) *WING MA*. (3)_____.

(2) *JON K. STEWART (Reg. No. 54,945)*. (4)_____.

Date of Interview: *01 May 2014*.

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

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

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

Claim(s) discussed: *1, 5, 28, and 36*.

Identification of prior art discussed: *N/A*.

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

On 05/01/14, the examiner proposed that applicant incorporate dependent claim 5 into claim 1 to make claim 1 allowable. The examiner further proposed amending the other independent claims to recite similar subject matter to make these claims allowable as well. The examiner also stated that claim 28 raised 112 2nd issues because it invoked 112 6th paragraph. Applicant submitted claim proposals on 05/07/14. In communications from 06/25/14-06/26/14, applicant's representative and the examiner discussed amending claim 36 to recite similar subject matter as claim 1.

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

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

☐ Attachment

/WING MA/ Examiner, Art Unit 2456	

Quicker Connections - Exhibit 2011
IPR2025-01088 - Page 11

Notice of Allowability	Application No. 11/398,519	Applicant(s) TIRUMALAI ET AL.	
	Examiner WING MA	Art Unit 2456	AIA (First Inventor to File) Status No

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

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

1. ☒ This communication is responsive to *applicant's response filed 02/27/2014*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-4,6,8-12,14-17,19,20,29-32,34 and 36*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   Certified copies:
   a) ☐ All b) ☐ Some *c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
   * Certified copies not received: _____.

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

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☒ Interview Summary (PTO-413), Paper No./Mail Date *05/01/2014*.
5. ☒ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/WING MA/	/RUPAL DHARIA/
Examiner, Art Unit 2456	Supervisory Patent Examiner, Art Unit 2456

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

2. Claims 1-6, 8-20, and 28-35 were previously pending. In this Examiner's Amendment, claims 1, 10, 15, and 19 are amended. Claims 5, 13, 18, 28, 33, and 35 are canceled. Claim 36 is added. The claims are amended as indicated below. Approval for this amendment was given by Applicant's representative Jon K. Stewart, Reg. No. 54,945, on May 7, 2014 and June 26, 2014.

3. The claims have been amended as follows:

1. (Currently Amended) A method for managing a network path between at least one end station and a network core, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;

sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device, wherein the second network device is in communication with a ~~first~~ plurality of end stations via [[a]] respective first downstream communication links, and wherein the notification identifies a group of one or more of the end stations affected by the loss in connectivity;

disabling the first downstream communication links in a manner that causes [[the]] each end station in the group to failover to a second downstream link between a third network device

and the end station to establish an alternate path between the group of one or more end stations and the network core that does not include the first network device; and

continuing to carry network traffic received on the aggregate link originating from at least ~~a second~~ one end station after sending the notification of change in status to the second network device.

2. (Original) The method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

3. (Previously Presented) The method of claim 1, wherein sending the notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device.

4. (Previously Presented) The method of claim 3, wherein sending the message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more designated network devices specified by a user.

5. (Canceled)

6. (Previously Presented) The method of claim 1, wherein the second network device is configured to forward a message containing the notification to one or more designated network devices specified by a user.

7. (Canceled)

8. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

9. (Previously Presented) The method of claim 1, further comprising:

detecting, by the first network device, recovery of connectivity between the first network device and the network core; and

sending, by the first network device, notification of the recovery in status to the second network device; and

in response to receiving the notification of the recovery in status, enabling by the second network device, the first downstream communication link.

10. (Currently Amended) A network switching system, comprising:

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link between the first network device and the second network device, wherein the notification identifies a group of one or more of the end stations affected by the loss in connectivity

a first downstream communication link between the second network device and each [[a first]] end station in the group that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the network switching system after disabling the first downstream communication link and further continues to carry network traffic originating from at least [[a second]] one end station after sending the notification of change in status to the second network device; and

a second downstream link between a third network device and [[the first]] each end station in the group that is established as an alternate path between the end station and the network core that does not include the first network device when the first downstream communication link is disabled.

11. (Original) The system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device.

12. (Previously Presented) The system of claim 10, wherein the first network device is configured to send notification of the change in status to a plurality of designated network devices specified by a user.

13. (Canceled)

14. (Previously Presented) The system of claim 10, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

15. (Currently Amended) A system, comprising:

a plurality of end stations;

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the first network device and the network core; and

at least a second network device configured to receive, from the first network device, via an aggregate link between the first network device and the second network device, notification of the change in status from the first network device, wherein the notification identifies a group of one or more of the end stations in communication with the second network device affected by the loss in connectivity;

downstream communication links between first network interface devices on the plurality of end stations including a respective first downstream communication link with [[a first one]] each of the identified group of the end stations that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the system after the first downstream communication link is disabled and further continues to carry network traffic originating from at least [[a second]] one of the end stations after sending the notification of change in status to the second network device;

additional downstream communications links between second network interface devices thereon and at least a third network device including a respective second downstream communications link that is established in response to the disabling of the first downstream communication link to provide an alternate path between ~~at least some of the plurality~~ of the identified group of end stations and the network core that does not include the first network device.

16. (Original) The system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface.

17. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes an identifier of a group defined by a user to include the at least some of the plurality of end stations.

18. (Canceled)

19. (Currently Amended) An aggregation device comprising:

a processor; and

a non-transitory computer readable medium containing instructions which, when executed by the processor, cause the aggregation device to perform operations comprising:

detecting a change in status of a first upstream communication link between the aggregation device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the aggregation device and the network core,

sending notification of the change in status, via an aggregate link between the aggregation device and a first network device, to the first network device in communication with a plurality of ~~first~~ end station~~s~~ via [[a]] respective first downstream communication link~~s~~,

identifying a group of one or more of the end stations in communication with the first network device effected by the loss in connectivity,

disabling the first downstream communication link of each end station in the group of one or more end stations in a manner that causes the end station~~s~~ in the group to each failover to a respective second downstream link to ~~between~~ a second network device and the respective end station to establish an alternate path between the respective end station and the network core that does not include the aggregation device and further continues to carry network traffic originating from at least [[a second]] one of the plurality of end stations after sending the notification of change in status to the ~~second~~ first network device, and

maintaining the aggregate link to continue to carry traffic for management of a network after sending the notification and to carry network traffic originating from at least a second end station after sending the notification of change in status to the ~~second~~ first network device.

20. (Previously Presented) The aggregation device of claim 19, wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network core; and

sending notification of the recovery in status to the first network device.

21-27. (Canceled)

28. (Canceled)

29. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes a time stamp of action occurrence.

30. (Previously Presented) The network switching system of claim 10, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

31. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes a time stamp of action occurrence.

32. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

33. (Canceled)

34. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

35. (Canceled)

36. (New) A method for managing network connectivity, comprising:

receiving, at a second network device, a notification of a loss of connectivity in an upstream communication link between a first network device and a network core, wherein the

first network device and the second network device are connected by an aggregate communication link;

identifying a group of one or more end stations in communication with the second network device affected by the loss of connectivity in the upstream communication link between the first network device and the network core;

in response to receiving the notification, disabling a network connection with each end station in the identified group of end stations in a manner that causes each end station in the identified group to failover to a downstream link between that end station and a third network device in order to establish an alternate path to the network core that does not include the first network device; and

continuing to carry network traffic received on the aggregate communication link connecting the first network device and second network device originating from at least one end station not in the identified group of end stations after receiving the notification of the loss of connectivity.

Reason for Allowance

4. **Claims 1-4, 6, 8-12, 14-17, 19-20, 29-32, 34, and 36** are allowed in view of Examiner's Amendment and the cited prior art of record. The following is an examiner's statement of reasons for allowance: Specifically, the prior art fails to teach or suggest

"a notification of a loss of connectivity in an upstream communication link between a first network device and a network core, wherein the first network device and the second network device are connected by an aggregate communication link;

identifying a group of one or more end stations in communication with the second network device affected by the loss of connectivity;

in response to receiving the notification, disabling a network connection with each end station in the identified group of end stations in a manner that causes each end station in the identified group to failover to a downstream link between that end station and a third network

device in order to establish an alternate path to the network core that does not include the first network device; and

continuing to carry network traffic received on the aggregate communication link connecting the first network device and second network device originating from at least one end station not in the identified group of end stations after receiving the notification of the loss of connectivity"

in combination with the remaining subject matter of the independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wing Ma whose telephone number is (571)270-5656. The examiner can normally be reached on Monday thru Friday, during the hours of 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WING MA/
Examiner, Art Unit 2456

/RUPAL DHARIA/

Supervisory Patent Examiner, Art Unit 2456

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	11/398,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	WING MA	2456	

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

(1) *WING MA*. (3)_____.

(2) *JON K. STEWART (Reg. No. 54,945)*. (4)_____.

Date of Interview: *01 May 2014*.

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

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

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

Claim(s) discussed: *1, 5, 28, and 36*.

Identification of prior art discussed: *N/A*.

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

On 05/01/14, the examiner proposed that applicant incorporate dependent claim 5 into claim 1 to make claim 1 allowable. The examiner further proposed amending the other independent claims to recite similar subject matter to make these claims allowable as well. The examiner also stated that claim 28 raised 112 2nd issues because it invoked 112 6th paragraph. Applicant submitted claim proposals on 05/07/14. In communications from 06/25/14-06/26/14, applicant's representative and the examiner discussed amending claim 36 to recite similar subject matter as claim 1.

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

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

☐ Attachment

/WING MA/ Examiner, Art Unit 2456	

Quicker Connections - Exhibit 2011
IPR2025-01088 - Page 22

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

CPC- SEARCHED		
Symbol	Date	Examiner
H04Q3/0087	06/2014	WM
H04L45/22	06/2014	WM

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	238, 239	10/2008	WM
370	241, 244, 245, 248	10/2008	WM
370	217, 218, 225-227	09/2013	WM
370	228	06/2014	WM

SEARCH NOTES		
Search Notes	Date	Examiner
Inventors' names searches on EAST	10/2008	WM
text search only on EAST - see search history printout	10/2008	WM
updated EAST search - see printout	07/2009	WM
updated EAST search - see printout	02/2010	WM
updated EAST search - see printout	08/2010	WM
updated EAST search - see printout	02/2011	WM
updated EAST search - see printout	09/2011	WM
updated EAST search - see printout	09/2013	WM
discussed allowability with HUA FAN (AU 2456)	05/2014	WM
updated EAST search - see printout	06/2014	WM

INTERFERENCE SEARCH

/WING MA/ Examiner.Art Unit 2456	

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
709	238, 239	06/2014	WM
370	218-219, 228	06/2014	WM
H04Q3	0087	06/2014	WM
H04L45	22	06/2014	WM

/WING MA/ Examiner.Art Unit 2456	

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE							
Final	Original	10/15/2008	07/10/2009	02/23/2010	07/30/2010	02/12/2011	09/26/2011	09/19/2013	06/29/2014
1	1	✓	✓	✓	✓	✓	✓	✓	=
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3	3	✓	✓	✓	✓	✓	✓	✓	=
4	4	✓	✓	✓	✓	✓	✓	✓	=
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17	29					✓	✓	✓	=
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	33					✓	✓	✓	-
21	34					✓	✓	✓	=
	35					✓	✓	✓	-
22	36								=

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3	"20010025319".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L2	1	"20010025319".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L3	2	"6985960".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L4	1	"6985960".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L5	16	("5251205" | "6094525").PN. OR ("6985960").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L6	23220	(switch$4 or failover or (fail near over)) and (path or route) and (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L7	884	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L8	103	("2002/0112072").URPN.	USPAT	OR	ON	2014/06/30 11:28
L9	25	("4799215" | "5164939" | "5400329" | "5453980" | "5566170" | "5590366" | "5974467" | "6023471" | "6104700").PN. OR ("6452934").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L10	9043	709/238.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L11	1912	709/238.ccls. and notification	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28

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L13	1014	709/238.ccls. and notification and ((failover or (fail near over)) or switch)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L14	2278	709/239.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L15	55	("2003/0117950").URPN.	USPAT	OR	ON	2014/06/30 11:28
L16	6	US-20040105390-$.DID. OR US-6222820-$.DID. OR US-6738345-$.DID. OR US-370217D-$.DID. OR US-20020186654-$.DID. OR US-6229787-$.DID. OR US-20070159971-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L17	0	"20020152320".pn.	USPAT	OR	ON	2014/06/30 11:28
L18	1	"20020152320".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L19	14	("2002/0152320").URPN.	USPAT	OR	ON	2014/06/30 11:28
L20	4	US-6954787-$.DID. OR US-6987727-$.DID. OR US-3701226-$.DID. OR US-6996065-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L21	15	("2004/0105390").URPN.	USPAT	OR	ON	2014/06/30 11:28
L22	11	US-6112249-$.DID. OR US-3920975-$.DID. OR US-5452115-$.DID. OR US-6373838-$.DID. OR US-5521958-$.DID. OR US-5864284-$.DID. OR US-5509027-$.DID. OR US-6311288-$.DID. OR US-6542934-$.DID. OR US-6657951-$.DID. OR US-6721269-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L23	1	"7200104".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L24	1	"20030179700".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L25	64	("20020191247" | "5049871" | "5093824" | "5412376" | "5590118" | "5590119" | "5596722" | "5646936" | "5687167" | "5737319" | "5781528" | "5805578" | "5805593" | "5835696" | "5881048" | "5881246" | "5884297" | "5920257" | "5933425" | "5959972" | "5987526" | "5995503" | "5999286" | "6011780" | "6041037" | "6041049" | "6047331" | "6075766" | "6075775" | "6097696" | "6097722" | "6115753" | "6130876" | "6130881" | "6134671" |	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28

		"6148000" | "6154778" | "6163525" | "6222653" | "6259673" | "6272107" | "6275492" | "6282170" | "6292464" | "6301244" | "6304549" | "6324162" | "6347078" | "6370119" | "6400681" | "6430150" | "6457050" | "6463062" | "6504845").PN. OR ("7200104").URPN.				
L26	1	"20040105390"	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L27	15	("2004/0105390").URPN.	USPAT	OR	ON	2014/06/30 11:28
L28	884	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L29	103	("2002/0112072").URPN.	USPAT	OR	ON	2014/06/30 11:28
L30	25	("4799215" | "5164939" | "5400329" | "5453980" | "5566170" | "5590366" | "5974467" | "6023471" | "6104700").PN. OR ("6452934").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L31	55	("2003/0117950").URPN.	USPAT	OR	ON	2014/06/30 11:28
L32	11	US-6112249-$.DID. OR US-3920975-$.DID. OR US-5452115-$.DID. OR US-6373836-$.DID. OR US-5521958-$.DID. OR US-5864284-$.DID. OR US-5509027-$.DID. OR US-6311288-$.DID. OR US-6542934-$.DID. OR US-6657951-$.DID. OR US-6721269-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L33	64	("20020191247" | "5049871" | "5093824" | "5412376" | "5590118" | "5590119" | "5596722" | "5646936" | "5687167" | "5737319" | "5781528" | "5805578" | "5805593" | "5835696" | "5881048" | "5881246" | "5884297" | "5920257" | "5933425" | "5959972" | "5987526" | "5995503" | "5999286" | "6011780" | "6041037" | "6041049" | "6047331" | "6075766" | "6075775" | "6097696" | "6097722" | "6115753" | "6130876" | "6130881" | "6134671" | "6148000" | "6154778" | "6163525" | "6222653" | "6259673" | "6272107" | "6275492" | "6282170" | "6292464" | "6301244" | "6304549" | "6324162" | "6347078" | "6370119" | "6400681" | "6430150" | "6457050" | "6463062" | "6504845").PN. OR ("7200104").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L34	931	(L28 or L29 or L30 or L32 or L33 or L31) and user	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L35	825	(L28 or L29 or L30 or L32 or L33 or L31) and user and define$3	US-PGPUB; USPAT; FPRS;	OR	ON	2014/06/30 11:28

			EPO; JPO; DERWENT; IBM_TDB			
L36	509	(L28 or L29 or L30 or L32 or L33 or L31) and (user same define$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L37	444	(L28 or L29 or L30 or L32 or L33 or L31) and (user WITH define$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L38	1	"20070237085".pn. and user	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L39	431	(L28 or L29 or L30 or L32 or L33 or L31) and (network near administrator)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L40	13	(network near administrator) same set same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L41	131	(network near administrator) same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L42	146	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L43	41	link same failure same manually same configure	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L44	6	link same failure same administrator same list same notify	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L45	1	"20070237085".pn. and medium	US-PGPUB; USPAT; FPRS;	OR	ON	2014/06/30 11:28

			EPO; JPO; DERWENT; IBM_TDB			
L46	1	"20040105390".pn. and medium	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L47	0	(failure near over) same administrator same list same notif$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L48	171	(failure near over) and administrator and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L49	69	link same failure same administrator same list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L50	245	link same failure same administrator same (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L51	0	"200201120272".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L52	2	"20020112072".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L53	103	("2002/0112072").URPN.	USPAT	OR	ON	2014/06/30 11:28
L54	24	(L53 or L52) and administrator	USPAT	OR	ON	2014/06/30 11:28
L55	7	US-20020004843-$.DID. OR US-20010032271-$.DID. OR US-6530032-$.DID. OR US-20020060985-$.DID. OR US-6813242-$.DID. OR US-6751190-$.DID. OR US-6725401-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L56	0	L55 and administrator	USPAT	OR	ON	2014/06/30 11:28
L57	0	L55 and administrator	USPAT	OR	ON	2014/06/30 11:28
L58	0	L55 and configure	USPAT	OR	ON	2014/06/30

						11:28
L59	63	(L53 or L55) and user	USPAT	OR	ON	2014/06/30 11:28
L60	1	"20020116669".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L61	44	("2002/0116669").URPN.	USPAT	OR	ON	2014/06/30 11:28
L62	5	US-6721269-$.DID. OR US-6725401-$.DID. OR US-6604208-$.DID. OR US-6530032-$.DID. OR US-6513129-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L63	1	"6513129".pn. and user	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L64	0	"20020116669".pn. and broadcast	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L65	4	US-6721269-$.DID. OR US-6725401-$.DID. OR US-6604208-$.DID. OR US-6530032-$.DID. OR US-6513129-$.DID. and broadcast	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L66	27	US-6(721269-$.DID. OR US-6725401-$.DID. OR US-6604208-$.DID. OR US-6530032-$.DID. OR US-6513129-$.DID.) and broadcast	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L67	0	(US-6721269-$.DID. OR US-6725401-$.DID. OR US-6604208-$.DID. OR US-6530032-$.DID. OR US-6513129-$.DID.) and broadcast	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L68	2307	(link same failure same list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L69	884	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L70	614	L69 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L71	3019	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L72	1715	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table) and ("370"/$$.ccls. or "709"/$$.ccls.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L73	5100	370/241.ccls.	US-PGPUB; USPAT;	OR	ON	2014/06/30 11:28

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
L74	1089	370/244.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L75	653	370/245.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L76	1962	370/248.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L77	249	L74 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L78	1927	(L73 or L74 or L75 or L76 or L77) and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L79	85	(L73 or L74 or L75 or L76 or L77) and list and ((fail near over) or failover or fail$over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L80	132	(L73 or L74 or L75 or L76 or L77) and (list or table) and ((fail near over) or failover or fail$over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L81	114	(L73 or L74 or L75 or L76 or L77) and (table) and ((fail near over) or failover or fail$over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L82	0	"6112249".pn. and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L83	2	"6112249".pn.	US-PGPUB; USPAT;	OR	ON	2014/06/30 11:28

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
L84	49	("4076961" | "4577182" | "4718079" | "4856047" | "4887290" | "4910763" | "4995035" | "5002387" | "5005122" | "5125021" | "5128979" | "5134644" | "5426773" | "5448723" | "5454024").PN. OR ("6112249").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L85	17	("4076961" | "4577182" | "4718079" | "4856047" | "4887290" | "4910763" | "4995035" | "5002387" | "5005122" | "5125021" | "5128979" | "5134644" | "5426773" | "5448723" | "5454024").PN. OR ("6112249").URPN. and administrator	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L86	884	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L87	2729	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L88	11	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L89	2178	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream)) and (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L90	57	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L91	152	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L92	40	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L93	43	(upstream or (up adj stream) or (up adj	US-PGPUB;	OR	ON	2014/06/30

		link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error or disconnect$5) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB			11:28
L94	125	(failure or change or update or error or disconnect$5) same (aggregate adj5 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L95	180	(failure or change or update or error or disconnect$5) same (aggregate near3 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L96	116	L95 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L97	112	L95 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L98	567	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near25 (aggregat$5 near5 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L99	481	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near20 (aggregat$5 near3 (link or path or stream or flow)) near20 (change or disconnect or failure or fail or update or error) near20 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L100	451	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L101	41	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near15 (aggregat$5 near3 (link or path or	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT;	OR	ON	2014/06/30 11:28

		stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) near15 (notificat$5 or alert or message)	IBM_TDB			
L102	49	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) near25 (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L103	36	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) near25 (notificat$5 or alert or message)	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L104	19	L103 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L105	19	L103 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L106	26	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 link) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) near3 up) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L107	355	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L108	355	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT;	OR	ON	2014/06/30 11:28

		stream or flow)) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) or (uplink or upstream) near3 up) or (up?link or up?stream)) same (notificat$5 or alert or message)	IBM_TDB			
L109	45	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) near3 up) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L110	355	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L111	45	L110 same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L112	45	L110 same (((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up)))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L113	10	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert) same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L114	196	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or error) same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L115	85	L114 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS;	OR	ON	2014/06/30 11:28

			EPO; JPO; DERWENT; IBM_TDB			
L116	17	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (fault) same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L117	19	L102 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L118	0	"11398510".aprr. and atm	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L119	0	"20040105390".pn. and atm	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L120	355	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L121	355	L120	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L122	15	("7512337".pn. or "6956824".pn. or "7453900.pn" or "20070047578".pn. or "20060227704".pn. or "20080016402".pn.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L123	5	("7512337".pn. or "6956824".pn. or "7453900.pn" or "20070047578".pn. or "20060227704".pn. or "20080016402".pn.)	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L124	3	L121 and L123	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L125	1	"6956824".pn. and upstream	US-PGPUB; USPAT; IBM_TDB	OR	ON	2014/06/30 11:28
L126	1	"6956824".pn. and fault	US-PGPUB; USPAT; IBM_TDB	OR	ON	2014/06/30 11:28
L127	3	"20010025319".pn.	US-PGPUB;	OR	ON	2014/06/30

			USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB			11:28
L128	1	"20010025319".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L129	2	"6985960".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L130	1	"6985960".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L131	16	("5251205" | "6094525").PN. OR ("6985960").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L132	23220	(switch$4 or failover or (fail near over)) and (path or route) and (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L133	884	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L134	103	("2002/0112072").URPN.	USPAT	OR	ON	2014/06/30 11:28
L135	25	("4799215" | "5164939" | "5400329" | "5453980" | "5566170" | "5590366" | "5974467" | "6023471" | "6104700").PN. OR ("6452934").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L136	9043	709/238.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L137	1912	709/238.ccls. and notification	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L138	155	709/238.ccls. and notification and (failover or (fail near over))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L139	1014	709/238.ccls. and notification and ((failover or (fail near over)) or switch)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28

L140	2278	709/239.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L141	55	("2003/0117950").URPN.	USPAT	OR	ON	2014/06/30 11:28
L142	6	US-20040105390-$.DID. OR US-6222820-$.DID. OR US-6738345-$.DID. OR US-370217D-$.DID. OR US-20020186654-$.DID. OR US-6229787-$.DID. OR US-20070159971-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L143	0	"20020152320".pn.	USPAT	OR	ON	2014/06/30 11:28
L144	1	"20020152320".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L145	14	("2002/0152320").URPN.	USPAT	OR	ON	2014/06/30 11:28
L146	4	US-6954787-$.DID. OR US-6987727-$.DID. OR US-3701226-$.DID. OR US-6996065-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L147	15	("2004/0105390").URPN.	USPAT	OR	ON	2014/06/30 11:28
L148	11	US-6112249-$.DID. OR US-3920975-$.DID. OR US-5452115-$.DID. OR US-6373838-$.DID. OR US-5521958-$.DID. OR US-5864284-$.DID. OR US-5509027-$.DID. OR US-6311288-$.DID. OR US-6542934-$.DID. OR US-6657951-$.DID. OR US-6721269-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L149	1	"7200104".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L150	1	"20030179700".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L151	64	("20020191247" | "5049871" | "5093824" | "5412376" | "5590118" | "5590119" | "5596722" | "5646936" | "5687167" | "5737319" | "5781528" | "5805578" | "5805593" | "5835696" | "5881048" | "5881246" | "5884297" | "5920257" | "5933425" | "5959972" | "5987526" | "5995503" | "5999286" | "6011780" | "6041037" | "6041049" | "6047331" | "6075766" | "6075775" | "6097696" | "6097722" | "6115753" | "6130876" | "6130881" | "6134671" | "6148000" | "6154778" | "6163525" | "6222653" | "6259673" | "6272107" | "6275492" | "6282170" | "6292464" | "6301244" | "6304549" | "6324162" | "6347078" | "6370119" | "6400681" | "6430150" | "6457050" | "6463062" | "6504845").PN. OR ("7200104").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L152	1	"20040105390"	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L153	15	("2004/0105390").URPN.	USPAT	OR	ON	2014/06/30 11:28

L154	884	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L155	103	("2002/0112072").URPN.	USPAT	OR	ON	2014/06/30 11:28
L156	25	("4799215" | "5164939" | "5400329" | "5453980" | "5566170" | "5590366" | "5974467" | "6023471" | "6104700").PN. OR ("6452934").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L157	55	("2003/0117950").URPN.	USPAT	OR	ON	2014/06/30 11:28
L158	11	US-6112249-$.DID. OR US-3920975-$.DID. OR US-5452115-$.DID. OR US-6373838-$.DID. OR US-5521958-$.DID. OR US-5864284-$.DID. OR US-5509027-$.DID. OR US-6311288-$.DID. OR US-6542934-$.DID. OR US-6657951-$.DID. OR US-6721269-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L159	64	("20020191247" | "5049871" | "5093824" | "5412376" | "5590118" | "5590119" | "5596722" | "5646936" | "5687167" | "5737319" | "5781528" | "5805578" | "5805593" | "5835696" | "5881048" | "5881246" | "5884297" | "5920257" | "5933425" | "5959972" | "5987526" | "5995503" | "5999286" | "6011780" | "6041037" | "6041049" | "6047331" | "6075766" | "6075775" | "6097696" | "6097722" | "6115753" | "6130876" | "6130881" | "6134671" | "6148000" | "6154778" | "6163525" | "6222653" | "6259673" | "6272107" | "6275492" | "6282170" | "6292464" | "6301244" | "6304549" | "6324162" | "6347078" | "6370119" | "6400681" | "6430150" | "6457050" | "6463062" | "6504845").PN. OR ("7200104").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L160	931	(L154 or L155 or L156 or L158 or L159 or L157) and user	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L161	825	(L154 or L155 or L156 or L158 or L159 or L157) and user and define$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L162	509	(L154 or L155 or L156 or L158 or L159 or L157) and (user same define$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L163	444	(L154 or L155 or L156 or L158 or L159 or L157) and (user WITH define$3)	US-PGPUB; USPAT; FPRS;	OR	ON	2014/06/30 11:28

			EPO; JPO; DERWENT; IBM_TDB			
L164	1	"20070237085".pn. and user	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L165	431	(L154 or L155 or L156 or L158 or L159 or L157) and (network near administrator)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L166	13	(network near administrator) same set same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L167	131	(network near administrator) same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L168	146	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L169	41	link same failure same manually same configure	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L170	6	link same failure same administrator same list same notify	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L171	1	"20070237085".pn. and medium	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L172	1	"20040105390".pn. and medium	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L173	0	(failure near over) same administrator same list same notif$3	US-PGPUB; USPAT; FPRS;	OR	ON	2014/06/30 11:28

			EPO; JPO; DERWENT; IBM_TDB			
L174	171	(failure near over) and administrator and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L175	69	link same failure same administrator same list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L176	245	link same failure same administrator same (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L177	0	"200201120272".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L178	2	"20020112072".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L179	103	("2002/0112072").URPN.	USPAT	OR	ON	2014/06/30 11:28
L180	24	(L179 or L178) and administrator	USPAT	OR	ON	2014/06/30 11:28
L181	7	US-20020004843-$.DID. OR US-20010032271-$.DID. OR US-6530032-$.DID. OR US-20020060985-$.DID. OR US-6813242-$.DID. OR US-6751190-$.DID. OR US-6725401-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L182	0	L181 and administrator	USPAT	OR	ON	2014/06/30 11:28
L183	0	L181 and administrator	USPAT	OR	ON	2014/06/30 11:28
L184	0	L181 and configure	USPAT	OR	ON	2014/06/30 11:28
L185	63	(L179 or L181) and user	USPAT	OR	ON	2014/06/30 11:28
L186	1	"20020116669".pn.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L187	44	("2002/0116669").URPN.	USPAT	OR	ON	2014/06/30 11:28
L188	5	US-6721269-$.DID. OR US-6725401-$.DID. OR US-6604208-$.DID. OR US-6530032-$.DID. OR US-6513129-$.DID.	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L189	1	"6513129".pn. and user	US-PGPUB;	OR	ON	2014/06/30

			USPAT			11:28
L190	0	"20020116669".pn. and broadcast	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L191	4	US-6721269-$.DID. OR US-6725401-$.DID. OR US-6604208-$.DID. OR US-6530032-$.DID. OR US-6513129-$.DID. and broadcast	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L192	27	US-6(721269-$.DID. OR US-6725401-$.DID. OR US-6604208-$.DID. OR US-6530032-$.DID. OR US-6513129-$.DID.) and broadcast	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L193	0	(US-6721269-$.DID. OR US-6725401-$.DID. OR US-6604208-$.DID. OR US-6530032-$.DID. OR US-6513129-$.DID.) and broadcast	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L194	2307	(link same failure same list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L195	884	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L196	614	L195 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L197	3019	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L198	1715	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table) and ("370"/$$.ccls. or "709"/$$.ccls.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L199	5100	370/241.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L200	1089	370/244.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L201	653	370/245.ccls.	US-PGPUB; USPAT; FPRS;	OR	ON	2014/06/30 11:28

			EPO; JPO; DERWENT; IBM_TDB			
L202	1962	370/248.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L203	249	L200 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L204	1927	(L199 or L200 or L201 or L202 or L203) and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L205	85	(L199 or L200 or L201 or L202 or L203) and list and ((fail near over) or failover or fail$over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L206	132	(L199 or L200 or L201 or L202 or L203) and (list or table) and ((fail near over) or failover or fail$over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L207	114	(L199 or L200 or L201 or L202 or L203) and (table) and ((fail near over) or failover or fail$over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L208	0	"6112249".pn. and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L209	2	"6112249".pn.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L210	49	("4076961" | "4577182" | "4718079" | "4856047" | "4887290" | "4910763" | "4995035" | "5002387" | "5005122" | "5125021" | "5128979" | "5134644" | "5426773" | "5448723" | "5454024").PN. OR ("6112249").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28
L211	17	("4076961" | "4577182" | "4718079" | "4856047" | "4887290" | "4910763" | "4995035" | "5002387" | "5005122" |	US-PGPUB; USPAT; USOCR	OR	ON	2014/06/30 11:28

		"5125021" | "5128979" | "5134644" | "5426773" | "5448723" | "5454024").PN. OR ("6112249").URPN. and administrator				
L212	884	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L213	2729	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L214	11	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L215	2178	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream)) and (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L216	57	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L217	152	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L218	40	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L219	43	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error or disconnect$5) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L220	125	(failure or change or update or error or disconnect$5) same (aggregate adj5 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L221	180	(failure or change or update or error or	US-PGPUB;	OR	ON	2014/06/30

		disconnect$5) same (aggregate near3 (link or path or stream or flow)) same (notificat$5 or alert or message)	USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB			11:28
L222	116	L221 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L223	112	L221 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L224	567	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near25 (aggregat$5 near5 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L225	481	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near20 (aggregat$5 near3 (link or path or stream or flow)) near20 (change or disconnect or failure or fail or update or error) near20 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L226	451	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L227	41	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) near15 (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
L228	49	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28

		flow) or (uplink or upstream) or (up?link or up?stream)) near25 (notificat$5 or alert or message)				
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L232	26	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 link) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) near3 up) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT	OR	ON	2014/06/30 11:28
L233	355	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
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		flow) near3 up) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)				
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L240	196	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or error) same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
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L246	355	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
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L248	15	("7512337".pn. or "6956824".pn. or "7453900.pn" or "20070047578".pn. or "20060227704".pn. or "20080016402".pn.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/06/30 11:28
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L257	8955	709/238-239.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2014/06/30 12:27
L258	1463	370/218-219.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2014/06/30 12:27
L259	1529	370/228.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2014/06/30 12:27
L260	968	((H04Q3/0087).CPC.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2014/06/30 12:29
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L263	20721	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2014/06/30 12:36

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L262	14241	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.)	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:36
L264	94	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.) and (loss with (connect$5 or connectivity)).clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:37
L265	120	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.) and (core same (connect$5 or connectivity)).clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:37
L266	59	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.) and ((identify$5 or identif$5) same group same (fail$5 or failover)).clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:39
L267	208	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.) and (aggregat$5 same link).clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:39
L268	111	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.) and ((upstream or uplink) same (fail$5 or failover)).clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:40
L269	317	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.) and (alternate same2 (fail$5 or failover)).clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:41
L270	438	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.) and (alternate with (path or link)).clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:41
L271	101	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.) and ((notification or notify$5) with status).clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:42
L272	5	((H04Q3/0087).CPC. or (H04L45/22).CPC. or 709/238-239.ccls. or 370/218-219.ccls. or 370/228.ccls.) and (((notification or notify$5) with status) same2 (disabl$4)).clm.	US-PGPUB; USPAT; UPAD	OR	OFF	2014/06/30 12:42

6/30/2014 12:43:55 PM
C:\Users\wma\Documents\EAST\Workspaces\11398519.wsp

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	**Art Unit**
	WING MA	2456

CPC						
Symbol					**Type**	**Version**
H04L		45	/	22	I	2013-01-01
H04Q		3	/	0087	F	2013-01-01
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CPC Combination Sets							
Symbol				**Type**	**Set**	**Ranking**	**Version**
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			/				

/WING MA/ Examiner.Art Unit 2456	06/30/2014	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	22	
/RUPAL DHARIA/ Supervisory Patent Examiner.Art Unit 2456	06/30/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	WING MA	2456

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION	
CLASS	SUBCLASS	CLAIMED	NON-CLAIMED
709	239	G 06 F 15 / 173 (2006.0)	
		H 04 L 1 / 00 (2006.0)	
CROSS REFERENCE(S)		H 04 L 12 / 26 (2006.0)	

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
709	238				
370	218	219	228		

/WING MA/ Examiner.Art Unit 2456	06/30/2014	Total Claims Allowed: 22	
(Assistant Examiner)	(Date)		
/RUPAL DHARIA/ Supervisory Patent Examiner.Art Unit 2456	06/30/2014	O.G. Print Claim(s) 1	O.G. Print Figure 4
(Primary Examiner)	(Date)		

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	**Art Unit**
	WING MA	2456

☐ 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
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13	16	20	32												

/WING MA/ Examiner.Art Unit 2456	06/30/2014	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	22	
/RUPAL DHARIA/ Supervisory Patent Examiner.Art Unit 2456	06/30/2014	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Tirumalai et al.

Serial No.: 11/398,519

Confirmation No.: 7705

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Filed: April 5, 2006

Group Art Unit: 2456

Examiner: Wing Ma

For: SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES

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

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office to fax number 571-273-8300 to the attention of Examiner Wing Ma, or electronically transmitted via EFS-Web, on the date shown below:

February 27, 2014 — Date
/Victoria Kubitskey/ — Victoria Kubitskey

Dear Sir:

RESPONSE TO OFFICE ACTION DATED SEPTEMBER 27, 2013

In response to the Office Action dated September 27, 2013, having a shortened statutory period for response set to expire on December 27, 2013, please enter this response and reconsider the claims pending in the application for reasons discussed below. The Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782 / CPOL778793 / JKS for a 2-month extension of time fee and for any other fees required to make this response timely and acceptable to the Office.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks/Arguments** begin on page 9 of this paper.

IN THE CLAIMS:

Please amend the claims as follows:

1. (Previously Presented) A method for managing a network path between at least one end station and a network core, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;

sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device in communication with a first end station via a first downstream communication link;

disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device; and

continuing to carry network traffic received on the aggregate link originating from at least a second end station after sending the notification of change in status to the second network device.

2. (Original) The method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

3. (Previously Presented) The method of claim 1, wherein sending the notification, by the first network device, of the change in status to the second network device comprises:

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sending a message from the first network device to one or more network devices in communication with the first network device.

4. (Previously Presented) The method of claim 3, wherein sending the message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more designated network devices specified by a user.

5. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second network device and a plurality of end stations that are in the group.

6. (Previously Presented) The method of claim 1, wherein the second network device is configured to forward a message containing the notification to one or more designated network devices specified by a user.

7. (Canceled)

8. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

9. (Previously Presented) The method of claim 1, further comprising:

detecting, by the first network device, recovery of connectivity between the first network device and the network core; and

sending, by the first network device, notification of the recovery in status to the second network device; and

in response to receiving the notification of the recovery in status, enabling by the second network device, the first downstream communication link.

10. (Previously Presented) A network switching system, comprising:

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at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link between the first network device and the second network device;

a first downstream communication link between the second network device and a first end station that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the network switching system after disabling the first downstream communication link and further continues to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device; and

a second downstream link between a third network device and the first end station that is established as an alternate path between the end station and the network core that does not include the first network device when the first downstream communication link is disabled.

11. (Original) The system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device.

12. (Previously Presented) The system of claim 10, wherein the first network device is configured to send notification of the change in status to a plurality of designated network devices specified by a user.

13. (Previously Presented) The system of claim 10, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to, in response to receiving notification of the change in status from the first

network device, disable first downstream communication links between the second network device and a plurality of end stations that are in the group.

14. (Previously Presented) The system of claim 10, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

15. (Previously Presented) A system, comprising:

a plurality of end stations;

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the first network device and the network core; and

at least a second network device configured to receive, from the first network device, via an aggregate link between the first network device and the second network device, notification of the change in status from the first network device;

downstream communication links between first network interface devices on the plurality of end stations including a first downstream communication link with a first one of the end stations that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the system after the first downstream communication link is disabled and further continues to carry network traffic originating from at least a second one of the end stations after sending the notification of change in status to the second network device;

additional downstream communications links between second network interface devices thereon and at least a third network device including a second downstream communications link that is established in response to the disabling of the first downstream communication link to provide an alternate path between at least some of the plurality of end stations and the network core that does not include the first network device.

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16. (Original) The system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface.

17. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes an identifier of a group defined by a user to include the at least some of the plurality of end stations.

18. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable the downstream communication links between the second network device and a limited subset of the plurality of designated end stations that are in the group.

19. (Previously Presented) An aggregation device comprising:

a processor; and

a non-transitory computer readable medium containing instructions which, when executed by the processor, cause the aggregation device to perform operations comprising:

detecting a change in status of a first upstream communication link between the aggregation device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the aggregation device and the network core,

sending notification of the change in status, via an aggregate link between the aggregation device and a first network device, to the first network device in communication with a first end station via a first downstream communication link,

disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a second network device and the end station to establish an alternate path between the end station and the network core that does not include the aggregation device and further continues to carry network traffic originating from at least a second

one of the end stations after sending the notification of change in status to the second network device, and

maintaining the aggregate link to continue to carry traffic for management of a network after sending the notification and to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device.

20. (Previously Presented) The aggregation device of claim 19, wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network core; and

sending notification of the recovery in status to the first network device.

21-27. (Canceled)

28. (Previously Presented) A network device comprising:

means for detecting a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the network device and the network core;

means for sending notification of the change in status, via an aggregate link between the first network device and a second network device, to the second network device in communication with a first end station via a downstream communication link;

means for disabling the downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device; and

means for maintaining the aggregate link to continue to carry network traffic received on the aggregate link originating from at least a second end station after sending the notification.

29. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes a time stamp of action occurrence.

30. (Previously Presented) The network switching system of claim 10, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

31. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes a time stamp of action occurrence.

32. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

33. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes an identifier of a group and the first network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the first network device and a plurality of end stations that are in the group.

34. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

35. (Previously Presented) The network device of claim 28, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

REMARKS

This is intended as a full and complete response to the Office Action dated September 27, 2013, having a shortened statutory period for response set to expire on December 27, 2013. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-6, 8-20, and 28-35 are pending in the application. Claims 1-6, 8-20, and 28-35 remain pending following entry of this response.

Specification Objections

The Examiner objects to the specification. Specifically, the Examiner suggests:

> Claim elements "means for detecting a change ... ," "means for sending notification ... ," "means for disabling the downstream communication link ... ," and "means for maintaining the aggregate link ... " are limitations that invoke 35 U.S.C. 112, sixth paragraph. The written description only implicitly or inherently sets forth the corresponding structure, material, or acts that perform the claimed function.

Office Action, p. 6. Respectfully, Applicants disagree. The specification plainly describes the computing devices, i.e., the structure, and the acts, i.e., the method steps, corresponding to the claimed limitations. For example, regarding structure, the specification provides the following description of the computing hardware corresponding to the claimed limitations:

> The switches 130 may represent Data Link or "Layer 2" layer switching, that encodes and decodes data packets into bits. Layer 2 switches implement the network transmission protocol and handle errors in the physical layer (Ethernet, optics, etc.), flow control and frame synchronization.

Specification, ¶ 0003.

> As used herein, the term end station generally refers to any device capable of a network connection via one or more network interfaces and need not necessarily reside at an edge of a network. Examples of end stations include a server, PC, fax machine, printer, or the like. The term switch (or switching device) generally refers to any type device that switches network traffic, such as a Layer 2 switch (per the OSI model) that switches Ethernet traffic. The term access device generally refers to a network element that is connected to one or more end stations. The term

> aggregation device generally refers to a network element that connects to one or more access devices.

Specification, ¶ 0021.

> Exactly how the link is disabled may depend on the corresponding type of physical medium. For example, for an Ethernet connection this may entail simply ceasing to transmit a signal (e.g., by disabling a laser for a fiber optic Ethernet connection or bringing down the voltage level for a copper Ethernet connection).

Specification, ¶ 0027.

Regarding steps, Figure 2 provides a method flow describes acts of performed by the recited limitations:

> FIG. 2 is a flow diagram of exemplary operations for propagating upstream connectivity information to a downstream device, in accordance with embodiments of the present invention.

Specification, ¶ 0023.

As these passages plainly provide explicit support for "the corresponding structure, material, or acts that perform the claimed function," Applicants respectfully request this objection be withdrawn.

Claim Rejections - 35 U.S.C. § 112

Claim 28 stands rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. Specifically, the Examiner suggests:

> Claim elements "means for detecting a change ... ," "means for sending notification ... ," "means for disabling the downstream communication link ... ," and "means for maintaining the aggregate link ... " are limitations that invoke 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function.

Office Action, p. 7. Respectfully, Applicants traverse this rejection. Applicants note this rejection restates the objection to the specification discussed above. Applicants rely on the same passages noted above as plainly demonstrating that the written description

does, in fact, "disclose the corresponding structure, material, or acts for the claimed function. Accordingly, Applicants respectfully request this rejection be withdrawn.

Claim Rejections - 35 U.S.C. § 103

Claims 1-3, 9 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hunter et al.* (US 2006/0206602; hereinafter *Hunter*) in view of *Kobayashi* (US 2003/0158964; hereinafter *Kobayashi*). Respectfully, Applicants traverse this rejection.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2141. Establishing a *prima facie* case of obviousness begins with first resolving the factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The factual inquiries are as follows:

determining the scope and content of the prior art;

A. ascertaining the differences between the claimed invention and the prior art;
B. resolving the level of ordinary skill in the art; and
C. considering any objective indicia of nonobviousness.

Once the *Graham* factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

Respectfully, Applicants submit that the Examiner has not properly characterized the teachings of the references and/or the claims at issue. Accordingly, a *prima facie* case of obviousness has not been established.

Hunter discloses a system where an Ethernet Switch Module (ESM) can detect a failure in an upstream link, and in response, either disable downstream link on that same Ethernet switch. For example, *Hunter* provides;

> With reference to ESM 214a in the example just described, assume that the link between external port 216a and external uplink 218 is broken. Such a link could be broken by a failure in external port 216a, a cable used to connect external port 216a and external uplink 218 could simply be inadvertently unplugged, or an uplink device such as external uplink 218 could fail due to being powered off, being defective, etc. In such a scenario in the prior art, NIC 206a would continue to communicate with internal port 212a, since the connection between NIC 206a and internal

> port 212a would still be intact, but data packets would not be able to reach external uplink 218. According to the present invention, however, the loss of the external port 216a connection results in internal port 212a being disabled.

Hunter, ¶ 0021. As described, when the ESM detects that a link on one port of the ESM fails (the link on 216a), the ESM disables another port on that same ESM (port 212a). The Examiner relies on this approach to suggest that Huner teaches the method recited by claim 1 "for managing a network path between at least one end station and a network core," that includes:

> detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;
> sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device in communication with a first end station via a first downstream communication link.

Claim 28 recites a comparable limitation. Specifically, the Examiner suggests:

> [Hunter teaches] detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core (Hunter: Fig. 2b, ¶¶ 0034 and 0023 teach a first upstream communication link between distribution switches and the network core), wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core (Hunter: Fig. 2b, ¶¶0034 and 0023 teach the change in status of the first upstream communication link comprises a loss in connectivity between the distribution switches and the network core), sending, by the first network device, via an aggregate link between the first network device and a second network device (Hunter: Fig. 2b), notification of the change in status to the second network device in communication with a first end station via a first downstream communication link (Hunter: Fig. 2b and ¶¶ 0033-0034 teach an explicit failover embodiment in which a notification of the change in status is sent to an access switch in communication with a first server blade via a first downstream communication link);

Office Action, p. 9. However, the passages cited by the Examiner describe the approach discussed above, where a single device (the ESM) detects a failure on one

link on that device and, in response, disables another link on that device, causing an end station to failover to a backup connection. For example, the

> Note that external uplink 218 may be comprised of two layers of switches: distribution switches 220 and core switches 222. Preferably, the switching scenario has two core switches 222, less than 10 distribution switches 220, and 20-30 access (ESM) switches 214. Thus, each higher (network facing) level is able to handle more switches found at a lower (server blade facing) level. **In a preferred embodiment of the present invention, each switch (core switches 222, distribution switches 220, access (ESM) switches 214) is able to disable (turn off) an internal port (server blade facing) when an external port (network facing) no longer has communication with the next higher upstream switch or network**.

Office Action, p. 9. As described, each individual switch can turn off a "blade facing" port when a "network facing" port on that same switch fails or "no longer has communication with the next higher upstream switch or network." Similarly, paragraphs 0033 and 0034 describe actions of the NIC (network interface card) on an end station in response to the ESM switch disabling a "blade facing." Specifically, these passages note that while the NIC implicitly fails over in response to the disabling of the 'blade facing" port on the ESM, the ESM could also send an explicit message to the NIC to activate the "failover NIC".

> While the present invention has been described as implicitly causing NIC failover, this can be explicitly caused as well. That is, as described above, the back-up failover NIC in the server blade is activated when it receives a signal indicating a loss of communication between the primary NIC and the upstream link. This signal may be in the form of a message in a packet, such as in a header of a data packet being directed to the primary NIC in the computer system, or the signal may be an electrical signal on a pathway (such as setting a line to the computer system high or low). This signal, whether in the packet header or on a line as described, is defined as an encoded message, which instructs the primary NIC to failover to the backup NIC.

Hunter, ¶ 0033. However, whether the ESM causes an "implicit failover" by disabling a port on the ESM or an "explicit" failover by sending a signal to the primary NIC to initiate a failover, the ESM does so in response to a failoure of an upostreanm connection on that same ESM.

As this discussion illustrates, *Hunter* does not disclose a method that includes "detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core" and in response "sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device." For example, Hunter does not disclose a first network device detecting a loss in connectivity between the first network device and a network core, and sending, via an aggregate link, a message to second network device, regarding the detected loss, where the second network device then disables a downstream communication link with an end station. Plainly, hunter does not disclose a first network device communicating with a second network device, in the manner claimed (or otherwise). Instead, *Hunter* discloses a network device that detects failure of one port on that device failing (a "network facing" port) and in response, disabling another port on that same device (a "blade facing" port).

Further, the Examiner concedes that:

> Hunter fails to explicitly disclose continuing to carry network traffic received on the aggregate link originating from at least a second end station after sending the notification of change in status to the second network device. Kobayashi teaches continuing to carry network traffic received on the aggregate link
> (Kobayashi: Fig. 2, element 150_2 and ¶¶(0038-0040) originating from at least a second end station (Kobayashi: Fig. 2, element 192_1) after sending the notification of change in status to the second network device (Kobayashi: ¶¶(0083-0085)).

Office Action, p. 10. However, *Kobaysahi* discloses that network paths may be use to route around a failed link. For example, the passages cited by the Examiner, in part, provide:

> When the working link 150_1 can not be used due to e.g. a fault of the link 150_1 itself, a fault of a port 240_1 of the upper relay 200 connected to the link 150_1, a fault of a port 310_1 of the lower relay 300_1, or the like (indicated by mark X in FIG. 2), it becomes possible for the upper relay 200 to transmit a data frame transmitted from an enterprise user branch 194 through paths (1) and (2) to an enterprise user head office 191_1 through detour paths (3) and (4) (upper relay 200-working link 150_2-lower relay 300_2-redundant link 501-lower relay 300_1) and a path (5).

> It is to be noted that the network system of the present invention can similarly transmit the data frame from the lower relay 300_1 to the upper relay 200 through the detour path not through the working link 150_1 which has become unavailable.

Kobayashi, ¶¶ 0038-0039. As described, when a "working link" between two points is lost, an indirect or "detour path" can be used to continue to carry traffic that cannot be carried over the "working link." While this approach presumably works as intended, it plainly does not teach, or render obvious the claimed "aggregate link" between the claimed "first network device" and "second network device" which "continu[es] to carry network traffic received on the aggregate link originating from at least a second end station after sending the notification of change in status to the second network device." Instead, the passage the use of a "detour path" as an alternative to a "working path." Again, plainly this approach does not disclose continuing to carry traffic over one link (the aggregate link) between the first and second network devices that is received from some end stations, even though links for other end stations has been disabled in response to an upstream link on the first switch (reachable from the second switch over the aggregate link) having experienced "a loss in connectivity between the first network device and the network core," as claimed.

Accordingly, for all the foregoing reasons, Applicants submit that *Hunter*, even in view of *Kobayashi*, in no way teaches the limitations of claim 1 (or 28) discussed above. Therefore, Applicants respectfully request this rejection be withdrawn.

Claims 4-6, 8 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hunter* in view of *Kobayashi*, and *Jain* (US 2002/0112072; hereinafter *Jain '072*).

Claims 4-6, 8 and 35 each depend from one of claims 1 or 28. As the remarks above demonstrate the allowability of these independent claims, Applicants submit the rejection of dependent claims 4-6, 8, and 35 is overcome without the need for further comment.

Claims 10-11, 15-16 and 19-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hunter* in view of *Sato* (US2004/0264364; hereinafter *Sato*) and *Kobayashi*. Respectfully, Applicants traverse this rejection.

Specifically, *Hunter*, even in view of *Sato* and *Kobayashi*, does not discloses the network switching system recited by claim 10, which includes:

> at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;
> at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link between the first network device and the second network device;

Independent claims 15 and 19 each recites comparable limitations. In discussing claim 10, the Examiner again cites to Hunter, ¶¶ 23, 33-34. As demonstrated above, *Hunter* does not disclose a "first network device" that detects a failure in an upstream communication link, and "second network device" that both receives a notification of the failure and disabling a downstream link between the second network device and an end station. Again, Hunter discloses an approach where a single ESM determines that a "network facing" connection has failed and in response, disables a "blade facing" connection on that same ESM.

Further, for the same reasons discussed above Kobayashi does not disclose an "aggregate link" that "continues to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device," as recited by claims 10, 15 and 19.

Accordingly, for all the foregoing reasons, Applicants submit that *Hunter*, even in view of *Kobayashi* and *Sato*, in no way teaches the limitations of claim 10, 15, and 19 discussed above. Therefore, Applicants respectfully request this rejection be withdrawn.

Claims 12-14, 17-18 and 33-34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hunter* in view of *Sato, Kobayashi*, and *Jain '072'*. Claim 29 stands

rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hunter* in view of *Kobayashi*, and *Rodeheffer et al.* (US 6,721,275; hereinafter *Rodeheffer*). Claims 30 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hunter* in view of *Sato*, *Kobayashi*, and *Dey* (US 6,801,506; hereinafter *Dey*). Claim 31 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hunter* in view of *Sato*, *Kobayashi*, and *Rodeheffer*.

Claims 12-14, 17-18, 29, and 30-35 each depend from one of claims 1, 10, 15, 19 or 28. As the remarks above demonstrate the allowability of these independent claims, Applicants submit the rejection of dependent claims 12-14, 17-18, 29, and 30-35 is overcome without the need for further comment.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

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Electronic Patent Application Fee Transmittal

Application Number:	11398519
Filing Date:	05-Apr-2006
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Filer:	Jon K. Stewart/Victoria Kubitskey
Attorney Docket Number:	CPOL778793

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with $0 paid	1252	1	600	600

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	600

Electronic Acknowledgement Receipt	
EFS ID:	18318912
Application Number:	11398519
International Application Number:	
Confirmation Number:	7705
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Customer Number:	62147
Filer:	Jon K. Stewart/Victoria Kubitskey
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Attorney Docket Number:	CPOL778793
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		CPOL778793.pdf	121945 6ba54baa14de7a58e117c1aa6fa9da80d938d455c	yes	18
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	8	
	Applicant Arguments/Remarks Made in an Amendment		9	18	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30386 8bdeff0d905b9fb677e55454b21f0b61f1a83057b9	no	2
Warnings:					
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		Total Files Size (in bytes):	152331		

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

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PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 11/398,519	Filing Date 04/05/2006	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

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

APPLICATION AS AMENDED – PART II

AMENDMENT	02/27/2014	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 27	Minus	** 28	= 0	x $80 =	0
	Independent (37 CFR 1.16(h))	* 5	Minus	*** 7	= 0	x $420 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

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

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

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/ROSA WEST/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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

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Office Action Summary	Application No. 11/398,519	Applicant(s) TIRUMALAI ET AL.	
	Examiner WING MA	Art Unit 2456	AIA (First Inventor to File) Status No

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/06/2012*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-6,8-20 and 28-35* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-6,8-20 and 28-35* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☒ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date: _____

4) ☐ Other: _____

Quicker Connections - Exhibit 2011
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DETAILED ACTION

The present application is being examined under the pre-AIA first to invent provisions. Applicant's amendments, filed 02/06/12, have been entered. Claims 1-6, 8-20, and 28-35 are pending. Claims 7 and 21-27 are canceled.

Continued Examination under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/06/12 has been entered.

Claim Construction

"USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure." *In re Morris*, 127 F.3d 1048, 1054-55 (Fed. Cir. 1997). The broadest reasonable interpretation rule recognizes that before a patent is granted the claims can be readily amended as a part of the examination process and that an applicant has the opportunity and responsibility to remove any ambiguity through the amendment process. *In re Bigio*, 381 F.3d at 1324.

Response to Arguments

Applicant's remarks and arguments (hereinafter "Remarks"), filed 02/06/12, have been fully considered.

I. Applicant's Argument – Regarding Previous 35 USC § 103 Rejection:

Claims 1, 10, 15, 19, and 28

Office Action, pp. 4-5. Saskio is directed to an approach for managing network switches where one network link is designated as "critical" and a set of links may be designated as being "dependent' on the "critical" link." If the "critical" link goes down, the switch disables the set of "dependent" links. For example, Saskio provides:

> In the following there is described the idea of the present invention. In the failed 2nd stage LAN switch SW7 it has been defined that the link LSW7 to router R1, called up-link, is a critical link and the so-called down-links LSW1, LSW3, LSW5 to the 1st stage LAN switches SW1, SW3, SW5, are dependent of the critical up-link LSW7. Thus, if the up-link LSW7 fails, all down-links LSW1, LSW3, LSW5 are set in the link-down state. Likewise, in the 1.sup.st stage LAN switches SW1, SW3, SW5, the links LSW1, LSW3, LSW5 to the 2.sup.nd stage LAN switch SW7 are defined to be as critical and links L11, L21, L31 L41, L51, L61, L71, L81, L9 to the hosts 1, ,2, ... , 9, down-links, are defined to be dependent of the up-links LSW1, LSW3, LSW5. The net result is that if the 2nd stage LAN switch or its link to the router fails, failure 2, then the link-down state is propagated down to hosts Host 1, ... , Host 9. The same will happen if the link between a 1st stage and 2nd stage LAN switch fails. Thus, the hosts become very quickly aware of a failure in the LAN and can start recovery immediately.

Saskio, ¶ 0028.

While the Examiner cites this passage as teaching the claimed step of "sending... notification of the change in status to the second network device," nothing in this passage actually describes any messages actually being sent from one device to another. Instead, the switch "LAN-switch SW7" monitors a link state of a link configured as critical, and should this link go down, sets the link state of the dependent links on that device (links to switches SW1 SW2 and SW3) to a "link down" state. In other words, the switch "LAN-switch SW7" monitors the link state of a "critical link" and disables "dependent links" on that device, without sending or receiving any notification status messages at all (Remarks, pp. 10-11).

I. Examiner's Response:

The examiner respectfully disagrees. Saskio teaches sending '"Link Down" indication signals' (Saskio: ¶0037). The examiner interprets sending indication signals as the same as sending a notification.

II. Applicant's Argument – Regarding Previous 35 USC § 103 Rejection:

Further, claim 1 goes on to recite a step of "continuing to carry network traffic received on the aggregate link originating from at least a second end station after sending the notification of change in status to the second network device." Claims 10, 15, 19, and 28 each recite similar limitations. Applicants submit that neither *Saskio* nor *Gonda* discloses this limitation. This should be readily apparent from the example of *Saskio* Figure 1, where should "critical" link LSW7 fail, *Saskio* discloses that LAN-switch SW7 disables dependent links (e.g., link LSW1) on that switch. And similarly, when LAN-switch SW1 observes that "critical" link LSW11 has been disabled, LAN-switch SW1 may disable links L11, L21, L31. Given that anything that could even be characterized as the "aggregate link" (e.g., link LSW1) is in a "link-down" state, it would not be available for switch 1 (SW1) to send network management messages or forward network traffic originating on other end stations to LAN-Switch SW7, in the manner recited by claims 1, 10, 15, 19 or 28.

Gonda discloses a system for modifying the OSI model layer 2 data link layer protocols (e.g. Ethernet) to add an MAC OAMP control sublayer, which supports the SDH/SONET OAMP standard. Adding this layer allows SDH/SONET OAMP messages to be sent over a layer 2 connection. However, doing so plainly requires an active link. Because *Saskio* discloses disabling dependent links on a switching device when a

corresponding "critical" link fails, there is no active link over which to send these messages.

II. Examiner's Response:

Applicant's arguments have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Limitations Interpreted under 35 USC § 112 6th Paragraph

Claim 28

Claim limitations "means for detecting a change … ," "means for sending notification … ," "means for disabling the downstream communication link … ," and "means for maintaining the aggregate link …" have been interpreted under 35 U.S.C. 112, sixth paragraph, because they use a non-structural term "means for" coupled with functional language without reciting sufficient structure to achieve the function. Furthermore, the non-structural term is not preceded by a structural modifier.

Since these claim limitations invoke 35 U.S.C. 112, sixth paragraph, claim 28 is interpreted to cover the corresponding structure described in the specification that achieves the claimed function, and equivalents thereof.

If applicant wishes to provide further explanation or dispute the examiner's interpretation of the corresponding structure, applicant must identify the corresponding structure with reference to the specification by page and line number, and to the drawing, if any, by reference characters in response to this Office action.

If applicant does **not** wish to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant may amend the claim so that it will clearly not invoke 35 U.S.C. 112, sixth paragraph, or present a sufficient showing that the claim recites sufficient structure, material, or acts for performing the claimed function to preclude application of 35 U.S.C. 112, sixth paragraph.

For more information, see *Supplementary Examination Guidelines for Determining Compliance with 35 U.S.C. § 112 and for Treatment of Related Issues in Patent Applications*, 76 FR 7162, 7167 (Feb. 9, 2011).

Specification Objection

Claim elements "means for detecting a change … ," "means for sending notification … ," "means for disabling the downstream communication link … ," and "means for maintaining the aggregate link …" are limitations that invoke 35 U.S.C. 112, sixth paragraph. The written description only implicitly or inherently sets forth the corresponding structure, material, or acts that perform the claimed function.

Pursuant to 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181, applicant should:

(a) Amend the claim so that the claim limitation will no longer be interpreted as a limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it expressly recites the corresponding structure, material, or acts that perform the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(c) State on the record what corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function.

Claim Rejections - 35 USC § 112 2nd Paragraph

The following is a quotation of 35 U.S.C. 112(b):

(B) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 28

Claim 28 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Claim elements "means for detecting a change … ," "means for sending notification … ," "means for disabling the downstream communication link … ," and "means for maintaining the aggregate link …" are limitations that invoke 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function.

Applicant may:

(a) Amend the claim so that the claim limitation will no longer be interpreted as a limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant should clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim Rejections - 35 USC § 103

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

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-3, 9, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter *et al.* (US 20060206602) (hereinafter "Hunter") in view of Kobayashi (US 20030158964) (hereinafter "Kobayashi").

Referring to claim 1,

Hunter teaches a method for managing a network path between at least one end station and a network core (Hunter: Fig. 2b), comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core (Hunter: Fig. 2b, ¶¶0034 and 0023 teach a first upstream communication link between distribution switches and the network core), wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core (Hunter: Fig. 2b, ¶¶0034 and 0023 teach the change in status of the first upstream communication link comprises a loss in connectivity between the distribution switches and the network core),

sending, by the first network device, via an aggregate link between the first network device and a second network device (Hunter: Fig. 2b), notification of the change in status to the second network device in communication with a first end station via a first downstream communication link (Hunter: Fig. 2b and ¶¶0033-0034 teach an explicit failover embodiment in which a notification of the change in status is sent to an access switch in communication with a first server blade via a first downstream communication link); and

disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end

station (Hunter: Fig. 2b and ¶¶0033-0034 teaches the server blade failovers to a second downstream link with another access switch) to establish an alternate path between the end station and the network core that does not include the first network device (Hunter: Fig. 2b, elements 204a and 214b).

Hunter fails to explicitly disclose continuing to carry network traffic received on the aggregate link originating from at least a second end station after sending the notification of change in status to the second network device.

Kobayashi teaches continuing to carry network traffic received on the aggregate link (Kobayashi: Fig. 2, element 150_2 and ¶¶0038-0040) originating from at least a second end station (Kobayashi: Fig. 2, element 192_1) after sending the notification of change in status to the second network device (Kobayashi: ¶¶0083-0085).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter to incorporate the continued aggregate link usage teaching of Kobayashi, because such a combination produces enhanced availability by enabling connectivity to an outside network for end stations that require usage of the aggregate link.

Referring to claim 2,

Hunter-Kobayashi teaches the method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device (Hunter: Fig. 2b and ¶0033 teach the notification is addressed to the primary NIC of the end station).

Referring to claim 3,

Hunter-Kobayashi teaches the method of claim 1, wherein the sending notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device. (Hunter: Fig. 2b and ¶0033 teach the notification is addressed to the primary NIC of the end station.)

Referring to claim 9,

Hunter-Kobayashi teaches the method of claim 1, further comprising:

detecting, by the first network device, recovery of connectivity between the first network device and the network core (Hunter: ¶0031); and

sending, by the first network device, notification of the recovery in status to the second network device (Hunter: ¶¶0031 and 0033); and

in response to receiving the notification of the recovery in status, enabling by the second network device, the first downstream communication link (Hunter: ¶0031).

Referring to claim 28,

Claim 28 is a claim to a network device "means for" implementing the method of claim 1. Therefore claim 28 is rejected for the reasons set forth for claim 1.

2. Claims 4-6, 8, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter in view of Kobayashi, and Jain (US 20020112072) (hereinafter "Jain '072").

Referring to claim 4,

Hunter-Kobayashi teaches the method of claim 3.

Hunter-Kobayashi is silent as to specifications by a user.

Jain '072 teaches wherein sending a message from a first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user. (Jain '072: ¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree feature of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Kobayashi, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (*e.g.*, pre-configuring a forwarding database), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, *i.e.*, designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 5,

Hunter-Kobayashi teaches the method of claim 1, wherein the second network device is configured to disable, in response to receiving the notification (Hunter: ¶¶0033-0034), a plurality of downstream communication links between the second network device and a plurality of end stations that are in a group (Hunter: ¶¶0028-0029).

Hunter-Kobayashi does not appear to explicitly disclose the change in status includes an identifier of a group.

Jain '072 teaches wherein the notification of the change in status includes an identifier of a group (Jain '072: ¶¶0070-0071).

To apply the pre-configured multi-cast identifier feature of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Kobayashi, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (*e.g.*, pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, *i.e.*, designating destination identification for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 6,

Hunter-Kobayashi teaches the method of claim 1.

Hunter-Kobayashi is silent as to the second network device is configured to forward a message to one or more network designated devices specified by a user.

Jain '072 teaches wherein a second network device is configured to forward a message containing the notification to one or more designated network devices specified by a user. (Jain '072: ¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. See also ¶0043)

To apply the pre-configured multi-cast tree feature of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Kobayashi, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (*e.g.*, pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one

of ordinary skill in the art at the time of the invention, *i.e.*, designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 8,

Hunter-Kobayashi teaches the method of claim 1.

Hunter-Kobayashi is silent as to end stations are specified by a user.

Jain '072 teaches a notification of the change in status includes an identifier of a group defined by a user to include the end station. (Jain '072: ¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree feature of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Kobayashi, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (*i.e.*, pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, *e.g.*, designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 35,

Claim 35 is substantially similar to claim 8, and is thus rejected under substantially the same rationale.

3. Claims 10-11, 15-16, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter in view of Sato (US 20040264364) (hereinafter "Sato"), and Kobayashi.

Referring to claim 10,

Hunter teaches a network switching system, comprising:

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core (Hunter: Fig. 2b, ¶¶0034 and 0023 teach a first distribution switch able to detect a change in status of a first upstream communication link to a network core),

wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core (Hunter: Fig. 2b, ¶¶0034 and 0023 teach the change in status comprises a lost in connectivity between the first distribution switch and the network core);

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link between the first network device and the second network device (Hunter: Fig. 2b, ¶¶0034 and 0023 teach the first distribution switch able to send notification of the change in status via an aggregate link between the distribution switch and access switch);

a first downstream communication link between the second network device and a first end station that is disabled in response to the notification of the change in status (Hunter: Fig. 2b and ¶¶0033-0034 teach a first downstream communication link between the access switch and a first server that is disabled in response to the notification); and

a second downstream link between a third network device and the first end station that is established as an alternate path between the end station and the network core that does not include the first network device when the first downstream communication link is disabled (Hunter: Fig. 2b and ¶¶0033-0034 teach a second downstream communication link between a second access switch and the first server that is established as an alternate path to the network core).

Hunter fails to explicitly disclose wherein the aggregate link continues to carry traffic for management of the network switching system after disabling the first downstream communication link and further continues to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device.

Sato teaches wherein the aggregate link continues to carry traffic for management of the network switching system (Sato: ¶¶0019 and 0057 teaches each link exchanges management messages continuously) after disabling a first downstream communication link (Sato: Fig. 5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter to incorporate the continuous link management messaging teaching of Sato, because such a combination produces enhanced network maintenance by enabling network nodes to continually monitor local connections.

Hunter-Sato fails to explicitly disclose the aggregate link further continues to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device.

Kobayashi teaches the aggregate link further continues to carry network traffic (Kobayashi: Fig. 2, element 150_2 and ¶¶0038-0040) originating from at least a second end station (Kobayashi: Fig. 2, element 192_1) after sending the notification of change in status to the second network device (Kobayashi: ¶¶0083-0085).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter to incorporate the continued aggregate link usage teaching of Kobayashi, because such a combination produces enhanced availability by enabling connectivity to an outside network for end stations that require usage of the aggregate link.

Referring to claim 11,

Hunter-Sato-Kobayashi teaches the system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device (Hunter: Fig. 2b and ¶0033 teach the notification is addressed to the primary NIC of the end station).

Referring to claim 15,

Hunter teaches a system, comprising:

a plurality of end stations (Hunter: Fig. 2b);

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core (Hunter: Fig. 2b, ¶¶0034 and 0023 teach a first distribution switch able to detect a change in status of a first upstream communication link to a network core), wherein the change in status of the first upstream communication link is a loss in connectivity between the first network device and the

network core (Hunter: Fig. 2b, ¶¶0034 and 0023 teach the change in status comprises a lost in connectivity between the first distribution switch and the network core); and

at least a second network device configured to receive, from the first network device, via an aggregate link between the first network device and the second network device, notification of the change in status from the first network device (Hunter: Fig. 2b, ¶¶0034 and 0023 teach the first distribution switch able to send notification of the change in status via an aggregate link between the distribution switch and access switch);

downstream communication links between first network interface devices on the plurality of end stations (Hunter: Fig. 2b) including a first downstream communication link with a first one of the end stations that is disabled in response to the notification of the change in status (Hunter: Fig. 2b and ¶¶0033-0034 teach a first downstream communication link between the access switch and a first server that is disabled in response to the notification),

additional downstream communications links between second network interface devices thereon (Hunter: Fig. 2b) and at least a third network device including a second downstream communications link that is established in response to the disabling of the first downstream communication link to provide an alternate path between at least some of the plurality of end stations and the network core that does not include the first network device (Hunter: Fig. 2b and ¶¶0033-0034 teach a second downstream communication link between a second access switch and the first server that is established as an alternate path to the network core).

Hunter fails to explicitly disclose wherein the aggregate link continues to carry traffic for management of the system after the first downstream communication link is disabled and further

continues to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device.

Sato teaches wherein the aggregate link continues to carry traffic for management of the system (Sato: ¶¶0019 and 0057 teaches each link exchanges management messages continuously) after the first downstream communication link is disabled (Sato: Fig. 5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter to incorporate the continuous link management messaging teaching of Sato, because such a combination produces enhanced network maintenance by enabling network nodes to continually monitor local connections.

Hunter-Sato fails to explicitly disclose the aggregate link further continues to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device.

Kobayashi teaches the aggregate link further continues to carry network traffic (Kobayashi: Fig. 2, element 150_2 and ¶¶0038-0040) originating from at least a second end station (Kobayashi: Fig. 2, element 192_1) after sending the notification of change in status to the second network device (Kobayashi: ¶¶0083-0085).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter to incorporate the continued aggregate link usage teaching of Kobayashi, because such a combination produces enhanced availability by enabling connectivity to an outside network for end stations that require usage of the aggregate link.

Referring to claim 16,

Hunter-Sato-Kobayashi teaches the system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface (Sato: FIG. 1, element 18).

To apply the feature of including a single network interface device of Sato would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Sato, and Kobayashi, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (*e.g.*, using a single interface device), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, *i.e.*, by including end stations with single interfaces, the system becomes more compatible with legacy devices.

Referring to claim 19,

Hunter teaches an aggregation device comprising:

a processor (Hunter: Claim 1); and

a non-transitory computer readable medium containing instructions which (Hunter: Claim 15), when executed by the processor, cause the aggregation device to perform operations comprising:

detecting a change in status of a first upstream communication link between the aggregation device and a network core (Hunter: Fig. 2b, ¶¶0034 and 0023 teach a first upstream communication link between distribution switches and the network core), wherein the change in status of the first upstream communication link is a loss in connectivity between the aggregation device and the network core (Hunter: Fig. 2b, ¶¶0034 and 0023 teach the change in status of the

first upstream communication link comprises a loss in connectivity between the distribution switches and the network core),

sending notification of the change in status, via an aggregate link between the aggregation device and a first network device (Hunter: Fig. 2b), to the first network device in communication with a first end station via a first downstream communication link (Hunter: Fig. 2b and ¶¶0033-0034 teach an explicit failover embodiment in which a notification of the change in status is sent to an access switch in communication with a first server blade via a first downstream communication link),

disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a second network device and the end station (Hunter: Fig. 2b and ¶¶0033-0034 teaches the server blade failovers to a second downstream link with another access switch) to establish an alternate path between the end station and the network core that does not include the aggregation device (Hunter: Fig. 2b, elements 204a and 214b).

Hunter fails to explicitly disclose further continues to carry network traffic originating from at least a second one of the end stations after sending the notification of change in status to the second network device, and

maintaining the aggregate link to continue to carry traffic for management of a network after sending the notification and to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device.

Sato teaches maintaining the aggregate link to continue to carry traffic for management of a network after sending the notification (Sato: ¶¶0019 and 0057 teaches each link exchanges management messages continuously).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter to incorporate the continuous link management messaging teaching of Sato, because such a combination produces enhanced network maintenance by enabling network nodes to continually monitor local connections.

Hunter-Sato fails to explicitly disclose further continues to carry network traffic originating from at least a second one of the end stations after sending the notification of change in status to the second network device, and

the aggregate link to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device.

Kobayashi teaches the aggregate link further continues to carry network traffic (Kobayashi: Fig. 2, element 150_2 and ¶¶0038-0040) originating from at least a second end station (Kobayashi: Fig. 2, element 192_1) after sending the notification of change in status to the second network device (Kobayashi: ¶¶0083-0085), and

the aggregate link to carry network traffic originating from at least a second end station (Kobayashi: Fig. 2, element 150_2 and ¶¶0038-0040) after sending the notification of change in status to the second network device (Kobayashi: ¶¶0083-0085).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter to incorporate the continued aggregate link usage

teaching of Kobayashi, because such a combination produces enhanced availability by enabling connectivity to an outside network for end stations that require usage of the aggregate link.

Referring to claim 20,

Hunter-Sato-Kobayashi teaches the aggregation device of claim 19, wherein the operations comprise:

detecting recovery of connectivity between the aggregation device and the network core (Hunter: ¶0031); and

sending notification of the recovery in status to the first network device (Hunter: ¶¶0031 and 0033).

4. Claims 12-14, 17-18, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter in view of Sato, Kobayashi, and Jain '072.

Referring to claim 12,

Hunter-Sato-Kobayashi teaches the system of claim 10.

Hunter-Sato-Kobayashi is silent as to specifications by a user.

Jain '072 teaches wherein the first network device is configured to send notification of the change in status to a plurality of designated network devices specified by a user. (Jain '072: ¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree feature of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Sato, Kobayashi, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could

have combined the elements as claimed by known methods (*e.g.*, pre-configuring a forwarding database), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, *i.e.*, designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 13,

Hunter-Sato-Kobayashi teaches the system of claim 10, wherein the second network device is configured to, in response to receiving the notification of the change in status from the first network device (Hunter: ¶¶0033-0034), disable first downstream communication links between the second network device and a plurality of end stations that are in a group (Hunter: ¶¶0028-0029).

Hunter-Sato-Kobayashi does not appear to explicitly disclose the notification of the change in status includes an identifier of a group.

Jain '072 teaches wherein the notification of the change in status includes an identifier of a group (Jain '072: ¶¶0070-0071).

To apply the pre-configured multi-cast identifier feature of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Sato, Kobayashi, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (*e.g.*, pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, *i.e.*, designating destination identification for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 14,

Hunter-Sato-Kobayashi teaches the system of claim 10.

Hunter-Sato-Kobayashi is silent as to end stations are specified by a user.

Jain '072 teaches a notification of the change in status includes an identifier of a group defined by a user to include the end station. (Jain '072: ¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Sato, Kobayashi, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (*i.e.*, pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, *e.g.*, designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 17,

Hunter-Sato-Kobayashi teaches the system of claim 15.

Hunter-Sato-Kobayashi is silent as to specifications by a user.

Jain '072 teaches wherein the notification of the change in status includes an identifier of a group defined by a user to include at least some of the plurality of end stations. (Jain '072: ¶¶0070-0071 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree feature of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Sato, Kobayashi, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (*e.g.*, pre-configuring a forwarding database), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, *i.e.*, designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 18,

Hunter-Sato-Kobayashi teaches the system of claim 15, wherein the second network device configured to, in response to receiving notification of the change in status from the first network device (Hunter: ¶¶0033-0034), disable the downstream communication links between the second network device and a limited subset of the plurality of end stations that are in the group (Hunter: ¶¶0028-0029).

Hunter-Sato-Kobayashi does not appear to explicitly disclose the notification of the change in status includes an identifier of a group.

Jain '072 teaches the notification of the change in status includes an identifier of a group (Jain '072: ¶¶0070-0071).

To apply the pre-configured multi-cast identifier feature of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Hunter, Sato, Kobayashi, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (*e.g.*, pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable

results to one of ordinary skill in the art at the time of the invention, *i.e.*, designating destination identification for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 33,

Claim 33 is substantially similar to claim 13, and is thus rejected under substantially the same rationale.

Referring to claim 34,

Claim 34 is substantially similar to claim 14, and is thus rejected under substantially the same rationale.

5. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter in view of Kobayashi, and Rodeheffer *et al.* (US 6721275) (hereinafter "Rodeheffer").

Referring to claim 29,

Hunter-Kobayashi teaches the method of claim 1.

Hunter-Kobayashi is silent as to the notification of the change in status includes a time stamp of action occurrence.

Rodeheffer teaches wherein a notification of the change in status includes a time stamp of action occurrence (Rodeheffer; col. 9, ll. 63-67 and col. 26, ll. 46-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter-Kobayashi to incorporate the time stamp feature of Rodeheffer, because such a combination produces enhanced maintenance by enabling a device to distinguish the latest updates.

6. Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter in view of Sato, Kobayashi, and Dey (US 6801506) (hereinafter "Dey").

Referring to claim 30,

Hunter-Sato-Kobayashi teaches the network switching system of claim 10.

Hunter-Sato-Kobayashi is silent as to the change in status includes a message counter for a number of messages sent for changes in status.

Dey teaches the feature of a notification of the change in status includes a message counter for a number of messages sent for changes in status (Dey: col. 12, ll. 42-63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter-Sato-Kobayashi to incorporate the message counter feature of Dey, because such a combination produces enhanced maintenance by enabling a device to distinguish problematic nodes which are constantly changing states.

Referring to claim 32,

Hunter-Sato-Kobayashi teaches the aggregation device of claim 19.

Hunter-Sato-Kobayashi is silent as to wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

Dey teaches the feature of a notification of the change in status includes a message counter for a number of messages sent for changes in status (Dey: col. 12, ll. 42-63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter-Sato-Kobayashi to incorporate the message counter

feature of Dey, because such a combination produces enhanced maintenance by enabling a device to distinguish problematic nodes which are constantly changing states.

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter in view of Sato, Kobayashi, and Rodeheffer.

Referring to claim 31,

Hunter-Sato-Kobayashi teaches the system of claim 15.

Hunter-Sato-Kobayashi is silent as to the notification of the change in status includes a time stamp of action occurrence.

Rodeheffer teaches wherein a notification of the change in status includes a time stamp of action occurrence (Rodeheffer: col. 9, ll. 63-67 and col. 26, ll. 46-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method/system of Hunter-Sato-Kobayashi to incorporate the time stamp feature of Rodeheffer, because such a combination produces enhanced maintenance by enabling a device to distinguish the latest updates.

Examiner's Notes

Cited prior art references must be considered in their entireties. *See, e.g., W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Applicant is advised that the specified citations above are merely representative of the teachings of the prior art, and that other supportive sections from within the entirety of a reference—*e.g.*, its incorporations by reference, drawings, and/or claims—are

implicitly relied upon for teaching and/or suggesting applicant's claims. Moreover, the specified citations should not be construed as asserting bounds for delimiting and/or restricting the applicable scope of prior art.

Applicant may not introduce any new matter to the claims and/or specification. *See* MPEP § 2163.03(I). For any subsequent response that contains new and/or amended claims, the examiner respectfully requests the applicant point out where *required* corresponding written description is found in the original disclosure. *See* MPEP § 2163.04(I)(B); *see also* MPEP § 2163.06.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wing Ma whose telephone number is 571-270-5656. The examiner can normally be reached on Monday thru Friday, during the hours of 9:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached at 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing Ma/
Examiner, Art Unit 2456

/Salad Abdullahi/

Primary Examiner, Art Unit 2456

Notice of References Cited	Application/Control No. 11/398,519	Applicant(s)/Patent Under Reexamination TIRUMALAI ET AL.	
	Examiner WING MA	Art Unit 2456	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2006/0206602	09-2006	Hunter et al.	709/223
*	B	US-2003/0016624	01-2003	Bare, Ballard C.	370/217
*	C	US-7,616,561	11-2009	Liu et al.	370/225
*	D	US-2007/0076727	04-2007	Shei, Yen H.	370/401
*	E	US-2007/0047436	03-2007	Arai et al.	370/219
*	F	US-2007/0041313	02-2007	Hidle, Frederick	370/216
*	G	US-7,593,319	09-2009	Sivasankaran et al.	370/216
*	H	US-2003/0137932	07-2003	Nishioka et al.	370/216
*	I	US-2003/0158964	08-2003	Kobayashi, Naofumi	709/238
*	J	US-2007/0070886	03-2007	Zirin, Seth	370/225
*	K	US-2004/0264364	12-2004	Sato, So	370/217
*	L	US-2004/0098501	05-2004	Finn, Norman W.	709/236
*	M	US-2003/0097470	05-2003	Lapuh et al.	709/239

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 11/398,519	Applicant(s)/Patent Under Reexamination TIRUMALAI ET AL.	
	Examiner WING MA	Art Unit 2456	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2002/0184387	12-2002	Yamaya et al.	709/238
*	B	US-6,392,990	05-2002	Tosey et al.	370/218
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	10/15/2008	07/10/2009	02/23/2010	07/30/2010	02/12/2011	09/26/2011	09/19/2013		
	1	✓	✓	✓	✓	✓	✓	✓		
	2	✓	✓	✓	✓	✓	✓	✓		
	3	✓	✓	✓	✓	✓	✓	✓		
	4	✓	✓	✓	✓	✓	✓	✓		
	5	✓	✓	✓	✓	✓	✓	✓		
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	33					✓	✓	✓		
	34					✓	✓	✓		
	35					✓	✓	✓		

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	458	(switch OR router OR bridge) near20 (switchover OR failover OR (fail adj over) OR fail?over OR (switch adj over) OR switch?over) near20 (alarm OR alert OR notification OR message)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2013/09/21 04:59
L2	145	(station or endstation or terminal or host or client) near30 (switchover OR failover OR (fail adj over) OR fail?over OR (switch adj over) OR switch?over) near30 (alarm OR alert OR notification OR message) near30 (switch or fabric or router or bridge)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2013/09/21 04:59
L3	426	(station or endstation or terminal or host or client) near30 (switchover OR failover OR (fail adj over) OR fail?over OR (switch adj over) OR switch?over) near30 (alarm OR alert OR notification OR message)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2013/09/21 04:59
L4	145	(station or endstation or terminal or host or client) near30 (switchover OR failover OR (fail adj over) OR fail?over OR (switch adj over) OR switch?over) near30 (alarm OR alert OR notification OR message) near30 (switch or fabric or router or bridge)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2013/09/21 05:00
L5	1044	370/225-227.ccls. and (@rlad<"20060405" or @ad<"20060405")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2013/09/21 05:00
L6	1448	(370/217-218.ccls.) and (@rlad<"20060405" or @ad<"20060405")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	OFF	2013/09/21 05:00
L13	787	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L17	1728	709/238.ccls. and notification	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00

L18	138	709/238.ccls. and notification and (failover or (fail near over))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L19	908	709/238.ccls. and notification and ((failover or (fail near over)) or switch)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L20	1970	709/239.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L34	787	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L46	12	(network near administrator) same set same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L47	120	(network near administrator) same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L48	138	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L49	37	link same failure same manually same configure	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L54	155	(failure near over) and administrator and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L55	63	link same failure same administrator same list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00

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L56	235	link same failure same administrator same (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L74	2046	(link same failure same list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L75	787	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L79	4215	370/241.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L80	915	370/244.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L81	567	370/245.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L82	1650	370/248.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L93	2411	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L95	1931	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream)) and (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L96	47	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00

L97	132	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L98	34	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L99	37	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error or disconnect$5) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L100	111	(failure or change or update or error or disconnect$5) same (aggregate adj5 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L101	159	(failure or change or update or error or disconnect$5) same (aggregate near3 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L104	435	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near25 (aggregat$5 near5 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L105	369	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near20 (aggregat$5 near3 (link or path or stream or flow)) near20 (change or disconnect or failure or fail or update or error) near20 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L106	345	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L107	32	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or	US-PGPUB; USPAT; FPRS;	OR	ON	2013/09/21 05:00

		transf$5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) near15 (notificat$5 or alert or message)	EPO; JPO; DERWENT; IBM_TDB			
L108	37	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) near25 (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L109	32	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) near25 (notificat$5 or alert or message)	US-PGPUB; USPAT	OR	ON	2013/09/21 05:00
L112	25	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 link) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) near3 up) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT	OR	ON	2013/09/21 05:00
L113	293	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L115	37	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) near3 up) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L116	293	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same	US-PGPUB; USPAT; FPRS; EPO; JPO;	OR	ON	2013/09/21 05:00

		(aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert or message)	DERWENT; IBM_TDB			
L120	156	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or error) same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L126	293	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L139	787	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L173	120	(network near administrator) same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L174	138	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L180	155	(failure near over) and administrator and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L181	63	link same failure same administrator same list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L182	235	link same failure same administrator same (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/09/21 05:00
L252	293	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or	US-PGPUB; USPAT; FPRS;	OR	ON	2013/09/21 05:00

		transf$5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert or message)	EPO; JPO; DERWENT; IBM_TDB			

EAST Search History (Interference)

<This search history is empty>

9/21/2013 5:17:26 AM
C:\Users\wma\Documents\EAST\Workspaces\11398519.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
709	238, 239	10/2008	WM
370	241, 244, 245, 248	10/2008	WM
370	217, 218, 225-227	09/2013	WM

SEARCH NOTES		
Search Notes	Date	Examiner
Inventors' names searches on EAST	10/2008	WM
text search only on EAST - see search history printout	10/2008	WM
updated EAST search - see printout	07/2009	WM
updated EAST search - see printout	02/2010	WM
updated EAST search - see printout	08/2010	WM
updated EAST search - see printout	02/2011	WM
updated EAST search - see printout	09/2011	WM
updated EAST search - see printout	09/2013	WM

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

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11398519	Filing Date	2006-04-05	Docket Number (if applicable)	CPOL778793US	Art Unit	2456
First Named Inventor	Gokul S. Tirumalai			Examiner Name	W. Ma		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 20-0782

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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Signature of Registered U.S. Patent Practitioner			
Signature	/Gero G. MCCLELLAN/	Date (YYYY-MM-DD)	2012-02-06
Name	Gero G. McClellan	Registration Number	44227

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

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

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Tirumalai et al.
Serial No.: 11/398,519
Confirmation No.: 7705

Filed: April 5, 2006
Group Art Unit: 2456
Examiner: Wing Ma

For: SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES

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

Dear Sir:

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office to fax number 571-273-8300 to the attention of Examiner Wing Ma, or electronically transmitted via EFS-Web, on the date shown below:

February 6, 2012 /Rob Rashbum /
Date

AMENDMENT ACCOMPANYING REQUEST FOR CONTINUED EXAMINATION

Prior to continued examination, please enter this response and reconsider the claims pending in the application for reasons discussed below.

The Commissioner is hereby authorized to charge underpayments or credit overpayments to counsel's Deposit Account No. 20-0782/ CPOL778793 (1654.024762).

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 9 of this paper.

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IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for managing a network path between at least one end station and a network core, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;

sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device in communication with ~~the~~ a first end station via a first downstream communication link;

disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device; and

continuing to carry ~~traffic for management of a~~ network traffic received on the aggregate link originating from at least a second end station after sending the notification of change in status to the second network device.

2. (Original) The method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

3. (Currently Amended) The method of claim 1, wherein sending the notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device.

4. (Currently Amended) The method of claim [[1]] 3, wherein sending [[a]] the message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more designated network devices specified by a user.

5. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second network device and a plurality of end stations that are in the group.

6. (Previously Presented) The method of claim 1, wherein the second network device is configured to forward a message containing the notification to one or more designated network devices specified by a user.

7. (Canceled)

8. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

9. (Previously Presented) The method of claim 1, further comprising:

detecting, by the first network device, recovery of connectivity between the first network device and the network core; and

sending, by the first network device, notification of the recovery in status to the second network device; and

in response to receiving the notification of the recovery in status, enabling by the second network device, the first downstream communication link.

10. (Currently Amended) A network switching system, comprising:

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core,

wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link between the first network device and the second network device;

a first downstream communication link between the second network device and a first ~~an~~ end station that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the network switching system after disabling the first downstream communication link and further continues to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device; and

a second downstream link between a third network device and the first end station that is established as an alternate path between the end station and the network core that does not include the first network device when the first downstream communication link is disabled.

11. (Original) The system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device.

12. (Previously Presented) The system of claim 10, wherein the first network device is configured to send notification of the change in status to a plurality of designated network devices specified by a user.

13. (Previously Presented) The system of claim 10, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second network device and a plurality of end stations that are in the group.

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14. (Previously Presented) The system of claim 10, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

15. (Currently Amended) A system, comprising:

a plurality of end stations;

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the first network device and the network core; and

at least a second network device configured to receive, from the first network device, via an aggregate link between the first network device and the second network device, notification of the change in status from the first network device;

downstream communication links between first network interface devices on the plurality of end stations including a first downstream communication link with a first one of the end stations that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the system after the first downstream communication link is disabled and further continues to carry network traffic originating from at least a second one of the end stations after sending the notification of change in status to the second network device;

additional downstream communications links between second network interface devices thereon and at least a third network device including a second downstream communications link that is established in response to the disabling of the first downstream communication link to provide an alternate path between at least some of the plurality of end stations and the network core that does not include the first network device.

16. (Original) The system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface.

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17. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes an identifier of a group defined by a user to include the at least some of the plurality of end stations.

18. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable the downstream communication links between the second network device and a limited subset of the plurality of designated end stations that are in the group.

19. (Currently Amended) An aggregation device comprising:

a processor; and

a non-transitory computer readable medium containing instructions which, when executed by the processor, cause the aggregation device to perform operations comprising[[.]]:

detecting a change in status of a first upstream communication link between the aggregation device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the aggregation device and the network core,

sending notification of the change in status, via an aggregate link between the aggregation device and a first network device, to the first network device in communication with [[an]] a first end station via a first downstream communication link,

disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a second network device and the end station to establish an alternate path between the end station and the network core that does not include the aggregation device and further continues to carry network traffic originating from at least a second one of the end stations after sending the notification of change in status to the second network device, and

maintaining the aggregate link to continue to carry traffic for management of a network after sending the notification and to carry network traffic originating from at least a second end station after sending the notification of change in status to the second network device.

20. (Previously Presented) The aggregation device of claim 19, wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network core; and

sending notification of the recovery in status to the first network device.

21-27. (Canceled)

28. (Currently Amended) A network device comprising:

means for detecting a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the network device and the network core;

means for sending notification of the change in status, via an aggregate link between the first network device and a second network device, to the second network device in communication with ~~the~~ a first end station via a downstream communication link;

means for disabling the downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device; and

means for maintaining the aggregate link to continue to carry ~~traffic for management of a~~ network traffic received on the aggregate link originating from at least a second end station after sending the notification.

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29. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes a time stamp of action occurrence.

30. (Previously Presented) The network switching system of claim 10, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

31. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes a time stamp of action occurrence.

32. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

33. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes an identifier of a group and the first network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the first network device and a plurality of end stations that are in the group.

34. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

35. (Previously Presented) The network device of claim 28, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

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REMARKS

This is intended as a full and complete response to the Office Action dated October 5, 2011, having a shortened statutory period for response extended one month and set to expire on February 5, 2012. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-6, 8-20 and 28-35 are pending in the application. Claims 1-6, 8-20 and 28-35 remain pending following entry of this response. Claims 3 and 4 have been amended. Applicants submit that the amendments do not introduce new matter.

Claim Rejections - 35 U.S.C. § 103

Claims 1-3, 9-11, 13, 15, 19-20 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saskio* (U.S. Publication 2004/0105390) in view of *Gonda* (U.S. publication 2004/0105390). Respectfully, Applicants traverse this rejection.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2141. Establishing a *prima facie* case of obviousness begins with first resolving the factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The factual inquiries are as follows:

(A) determining the scope and content of the prior art;
(B) ascertaining the differences between the claimed invention and the prior art;
(C) resolving the level of ordinary skill in the art; and
(D) considering any objective indicia of nonobviousness.

Once the *Graham* factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

Respectfully, Applicants submit that the Examiner has not properly characterized the teachings of the references and/or the claims at issue. Accordingly, a *prima facie* case of obviousness has not been established.

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In this case, Applicants submit that the combination of *Saskio* and *Gonda* does not disclose the method recited by claim 1 "for managing a network path between at least one end station and a network core." For example, these references do not disclose:

- sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device in communication with the end station via a first downstream communication link

Claims 10, 15, 19, and 28 each recite a comparable limitation. In rejecting claim 1, the Examiner suggests:

> [*Saskio* discloses] sending, by the first network device, via a link between the first network device and a second network device, notification of the change in status to the second network device in communication with the end station via a first downstream communication link ([0028 and Fig.1 teach the first network device, i.e., SW7, sends a notification of the change in status, i.e., link.

Office Action, pp. 4-5. *Saskio* is directed to an approach for managing network switches where one network link is designated as "critical" and a set of links may be designated as being "dependent' on the "critical" link." If the "critical" link goes down, the switch disables the set of "dependent" links. For example, *Saskio* provides:

> In the following there is described the idea of the present invention. In the failed 2nd stage LAN switch SW7 it has been defined that the link LSW7 to router R1, called up-link, is a critical link and the so-called down-links LSW1, LSW3, LSW5 to the 1st stage LAN switches SW1, SW3, SW5, are dependent of the critical up-link LSW7. Thus, if the up-link LSW7 fails, all down-links LSW1, LSW3, LSW5 are set in the link-down state. Likewise, in the 1.sup.st stage LAN switches SW1, SW3, SW5, the links LSW1, LSW3, LSW5 to the 2.sup.nd stage LAN switch SW7 are defined to be as critical and links $L1_1$, $L2_1$, $L3_1$ $L4_1$, $L5_1$, $L6_1$, $L7_1$, $L8_1$, L_9 to the hosts 1, ,2, . . . , 9, down-links, are defined to be dependent of the up-links LSW1, LSW3, LSW5. The net result is that if the 2nd stage LAN switch or its link to the router fails, failure 2, then the link-down state is propagated down to hosts Host 1, ... , Host 9. The same will happen if the link between a 1st stage and 2nd stage LAN switch fails. Thus, the hosts become very quickly aware of a failure in the LAN and can start recovery immediately.

Saskio, ¶ 0028.

While the Examiner cites this passage as teaching the claimed step of "sending... notification of the change in status to the second network device," nothing in this passage actually describes any messages actually being sent from one device to another. Instead, the switch "LAN-switch SW7" monitors a link state of a link configured as critical, and should this link go down, sets the link state of the dependent links on that device (links to switches SW1 SW2 and SW3) to a "link down" state. In other words, the switch "LAN-switch SW7" monitors the link state of a "critical link" and disables "dependent links" on that device, without sending or receiving any notification status messages at all.

Further, the process can be iterative, where a dependent link relative to one end point of that link is, in turn, configured as a critical link at the other endpoint. In the Example of *Saskio*, Figure 1, on LAN-Switch SW7, the link LSW7 is a critical link, and the links "LSW1," "LSW3," and "LSW5" are dependent links which are disabled should the critical link fail. When this occurs, LAN-switch SW1 observes that the link LSW1 has been disabled (or from LAN-switch SW1's perspective – observes that the link has failed). In response, LAN-switch SW1 disables any links configured as being dependent on LSW1. Again however, at no point is a notification status message sent between one switch (e.g., LAN-switch SW7) and another (LAN-switch SW7). Instead, each switch monitors links configured as critical and disables links configured as dependent when a "critical" link fails. While *Saskio* discloses disabling a "dependent link" when a corresponding "critical" link fails, claim 1 recites sending a "notification message" over what *Saskio* would call a "dependent link" when a "critical link" fails. The receiving "end station" can respond to the message by changing network interfaces.

Because nothing in *Saskio* discloses sending messages from one switch to another, Applicants submit this reference does not teach, show, or even suggest, the claimed limitation of sending... notification of the change in status to the second network device," as suggested by the Examiner in rejecting claim 1. For similar reasons, Applicants submit that *Saskio* does not teach the comparable limitations recited by claims 10, 15, 19, or 28.

Further, claim 1 goes on to recite a step of "continuing to carry network traffic received on the aggregate link originating from at least a second end station after sending the notification of change in status to the second network device." Claims 10, 15, 19, and 28 each recite similar limitations. Applicants submit that neither *Saskio* nor *Gonda* discloses this limitation. This should be readily apparent from the example of *Saskio* Figure 1, where should "critical" link LSW7 fail, *Saskio* discloses that LAN-switch SW7 disables dependent links (e.g., link LSW1) on that switch. And similarly, when LAN-switch SW1 observes that "critical" link LSW1[1] has been disabled, LAN-switch SW1 may disable links $L1_1$, $L2_1$, $L3_1$. Given that anything that could even be characterized as the "aggregate link" (e.g., link LSW1) is in a "link-down" state, it would not be available for switch 1 (SW1) to send network management messages or forward network traffic originating on other end stations to LAN-Switch SW7, in the manner recited by claims 1, 10, 15, 19 or 28.

Gonda discloses a system for modifying the OSI model layer 2 data link layer protocols (e.g. Ethernet) to add an MAC OAMP control sublayer, which supports the SDH/SONET OAMP standard. Adding this layer allows SDH/SONET OAMP messages to be sent over a layer 2 connection. However, doing so plainly requires an active link. Because *Saskio* discloses disabling dependent links on a switching device when a corresponding "critical" link fails, there is no active link over which to send these messages.

Accordingly, for all the foregoing reasons, Applicants submit that claims 1-3, 9-11, 13, 15, 19-20 and 28 are allowable and respectfully, request therefore, that this rejection be withdrawn.

Claims 4, 6-8, 12-14, 16-18, and 33-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saskio*, *Gonda*, and *Jain* (U.S. Publication 2002/0112072). Respectfully, Applicants traverse this rejection.

---

[1] Critical, as configured on LAN-Switch SW1

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Claims 4, 6-8, 12-14, 16-18, and 33-35 each depend from one of independent claims 1, 10, 15, 19, and 28. As the remarks above demonstrate the allowability of these independent claims, Applicants believe the rejection of these dependent claims is overcome without the need for additional comment.

Claims 29 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saskio*, *Gonda*, and *Rodeheffer et al.* (U.S. Patent No. 6,721,275). Respectfully, Applicants traverse this rejection.

Claims 29 and 31 each depend from independent claims 1 and 15 respectively. As the remarks above demonstrate the allowability of these independent claims, Applicants believe the rejection of these dependent claims is overcome without the need for additional comment.

Claims 30 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saskio*, *Gonda*, and *Dey* (U.S. Patent No. 6,801,506). Respectfully, Applicants traverse these rejections.

Claims 30 and 32 each depend from independent claims 10 and 19 respectively. As the remarks above demonstrate the allowability of these independent claims, Applicants believe the rejection of these dependent claims is overcome without the need for additional comment.

Therefore, for all the foregoing reasons, the claims are believed to be allowable and allowance of the claims is respectfully requested.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 C.F.R. 1.4,

/Gero G. MCCLELLAN, Reg. #44227/

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Electronic Patent Application Fee Transmittal

Application Number:	11398519
Filing Date:	05-Apr-2006
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Filer:	Gero G. McClellan/Rob Rathbun
Attorney Docket Number:	CPOL778793

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with $0 paid	1251	1	150	150

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	1801	1	930	930
		Total in USD ($)		**1080**

Electronic Acknowledgement Receipt	
EFS ID:	12010644
Application Number:	11398519
International Application Number:	
Confirmation Number:	7705
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Customer Number:	62147
Filer:	Gero G. McClellan/Rob Rathbun
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL778793
Receipt Date:	06-FEB-2012
Filing Date:	05-APR-2006
Time Stamp:	17:52:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1080
RAM confirmation Number	5056
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Request for Continued Examination (RCE)	CPOL778793_RCE.pdf	697380 bcc869d35a227e4fd8dbb47eedd2888121f0135	no	3
Warnings:					
Information:					
2		CPOL778793_AARCE.pdf	116077 75eb5f7a96709f4c98f6aa8dffb2209865b2d6e5	yes	14

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment Submitted/Entered with Filing of CPA/RCE	1	1
	Claims	2	8
	Applicant Arguments/Remarks Made in an Amendment	9	14

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32143 db6b77ea11b55a96f262e02ea1df99e6b02139	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	845600	

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

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

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

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

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/398,519	04/05/2006	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	27 minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	5 minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	02/06/2012	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	* 27	Minus	** 28	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	* 5	Minus	***7	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

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

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

Legal Instrument Examiner:
/PEGGY YARBOROUGH/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tatavolai	CPOL778793	7705

62147 7590 10/05/2011

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER
MA, WING

ART UNIT	PAPER NUMBER
2456	

NOTIFICATION DATE	DELIVERY MODE
10/05/2011	ELECTRONIC

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

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

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

PAIR_cofficeaction@pattersonsheridan.com
houston_mail@pattersonsheridan.com

Office Action Summary	Application No.	Applicant(s)	
	11/398,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	WING MA	2456	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/23/2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-20 and 28-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-20 and 28-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/25/2011 and 06/14/2011*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-6, 8-20, and 28-35 are pending.

Claim Construction

"USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure." *In re Morris*, 127 F.3d 1048, 1054-55 (Fed. Cir. 1997). The broadest reasonable interpretation rule recognizes that before a patent is granted the claims can be readily amended as a part of the examination process and that an applicant has the opportunity and responsibility to remove any ambiguity through the amendment process. *In re Bigio*, 381 F.3d at 1324.

Response to Arguments

Applicant's remarks and arguments (hereinafter "Remarks"), filed 06/23/11, have been fully considered. Applicant's arguments regarding the Goldman reference are moot in view of the new grounds of rejection detailed below. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 04/25/11 prompted the new ground(s) of rejection presented in this Office action.

Claim Rejections - 35 USC § 103

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

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

1. Claims 1-3, 9-11, 15, 19-20, and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio (US 20040105390) (hereinafter "Saskio") in view of Gonda (US 20050108401) (hereinafter "Gonda").

Referring to claim 1,

Saskio teaches/suggests a method for managing a network path between at least one end station and a network core (Fig. 1 shows a hierarchical network wherein R1 and R2 form the core layer, and also R1 and R2 are also shown as the backbone; see also ¶0029 for core layer functionality), comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network (¶0028 and Fig. 1 teach a first network device, LAN switch SW7, and an upstream communication link, LSW7. ¶¶0034-0035 teach that each device monitors the status of active links) core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core (Fig. 1 shows a hierarchical network wherein R1 and R2 form the core layer, and also R1 and R2 are shown as the backbone; see also ¶0029 for core layer functionality);

sending, by the first network device, via a link between the first network device and a second network device, notification of the change in status to the second network device in communication with the end station via a first downstream communication link (¶0028 and Fig. 1 teach the first network device, i.e., SW7, sends a notification of the change in status, i.e., link-

down state, to a second network device, i.e., SW1. SW1 is in communication with an end station, i.e., Host 1, via a first downstream communication link, i.e., $L1_1$); and

disabling the first downstream communication link in a manner that would cause the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device (¶0028 teaches the second network device, i.e., SW1, sends the link-down state to Host 1. ¶0026 teaches when a Host device receives a path failure notification; it switches to a second downstream link, L12. FIG. 1 teaches L12 is connected to a third switch, i.e., SW2).

Saskio fails to expressly disclose continuing to carry traffic for management of a network on the aggregate link after sending the notification of change in status to the second network device. It is noted that Saskio teaches up-link LSW7 as failing (¶0028) and that the physical connection of LSW1, the aggregate link, remains intact (¶0031).

Gonda, in the same field of endeavor, teaches a control sublayer (Abstract) for exchanging control messages for enabling/disabling interfaces/links (¶¶0087 and 0093).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the link state communication and switchover aspects of Saskio with the control sublayer teachings of Gonda; because such a modification would allow SW7 and SW1 to exchange OAMP control messages (traffic for management of a network) for re-enabling and/or testing links via LSW1, independent of the statuses of other links.

The proffered combination of Saskio and Gonda arrives at the architecture and concepts taught by Saskio implemented using the control messaging techniques of Gonda. This

combination of Saskio and Gonda brings about the Saskio network devices exchanging OAMP control traffic if physically possible. As previously noted, the physical connection of the aggregate link of Saskio, LSW1, remains intact. Therefore, the aggregate link LSW1 continues to carry traffic for management of a network, *i.e.*, OAMP control frames, even after sending a notification of a change in status to the second network device.

Referring to claim 2,

Saskio-Gonda teaches the method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device (Gonda: ¶0139).

Referring to claim 3,

Saskio-Gonda teaches the method of claim 1, wherein the sending notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device. (Saskio: ¶0028 teaches propagation of the link-down state to Host devices, which are network devices in communication with the first network device, i.e., SW7.)

Referring to claim 9,

Saskio-Gonda teaches the method of claim 1, further comprising:

detecting, by the first network device, recovery of connectivity between the first network device and the network core (Saskio: ¶0031 teaches the recovery detection's process is the same as the failure detection); and

sending, by the first network device, notification of the recovery in status to the second network device (Saskio: If the steps recited by ¶0028 are modified to reflect the link-up situation, the first network device, SW7, would propagate notification of the recovery, link-up state, to the secondary network device, SW1); and

in response to receiving the notification of the recovery in status, enabling by the second network device, the first downstream communication link. (Saskio: If the steps recited by ¶0028 are modified to reflect the link-up situation, the second network device, SW1, would propagate the link-up state to the Host 1, thereby enabling the first downstream communication link, L11.)

Referring to claim 10,

Claim 10 is a claim to a network switching system implementing the method of claim 1. Therefore claim 10 is rejected for the reasons set forth for claim 1.

Referring to claim 11,

Claim 11 is a claim to a network switching system implementing the method of claim 2. Therefore claim 11 is rejected for the reasons set forth for claim 2.

Referring to claim 15,

Claim 15 is a claim to a system substantially similar to the system of claim 10. Therefore claim 15 is rejected for the reasons set forth for claim 10. Additionally, Saskio teaches a plurality of end stations (Fig. 1 and ¶0028).

Referring to claim 19,

Claim 19 is a claim to an aggregation device implementing the method of claim 1. Therefore claim 19 is rejected for the reasons set forth for claim 1; wherein the claimed

aggregation device maps to SW7 of Saskio, and the claimed network device maps to SW1 of Saskio.

Referring to claim 20,

Saskio-Gonda teaches the aggregation device of claim 19, wherein the operations comprise:

detecting recovery of connectivity between the aggregation device and the network core (Saskio: ¶0031 teaches the recovery detection's process); and

sending notification of the recovery in status to the first network device. (Saskio: If the steps recited by ¶0028 are modified to reflect the link-up situation, the aggregation device, SW7, would propagate notification of the recovery, link-up state, to the network device, SW1.)

Referring to claim 28,

Claim 28 is a claim to a network device "means for" implementing the device of claim 19. Therefore claim 28 is rejected for the reasons set forth for claim 19.

2. Claims 4-6, 8, 12-14, 16-18, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio in view of Gonda, and Jain (US 20020112072) (hereinafter "Jain '072").

Referring to claim 4,

Saskio-Gonda teaches the method of claim 3.

Saskio-Gonda is silent as to specifications by a user.

Jain '072 teaches wherein sending a message from a first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user. (¶0070 teaches each node contains a pre-

configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree concept of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Gonda, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 5,

Saskio-Gonda teach the method of claim 1, wherein the second network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second network device and a plurality of end stations. (¶0028 teaches if SW1 gets the link-down state, it sets the downstream links, $L1_1$ and $L2_1$, to the link-down state as well. $L1_1$ and $L2_1$ connect SW1 to the Host.)

Saskio-Gonda does not appear to explicitly disclose the change in status includes an identifier of a group.

Jain '072 teaches wherein the notification of the change in status includes an identifier of a group (¶¶0070-0071), and it identifies a plurality of end stations that are in the group (¶¶0070-0071).

To apply the pre-configured multi-cast identifier concept of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Gonda, and Jain

'072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination identification for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 6,

Saskio-Gonda teaches the method of claim 1.

Saskio-Gonda is silent as to the second network device is configured to forward a message to one or more network designated devices specified by a user.

Jain '072 teaches wherein a second network device is configured to forward a message containing the notification to one or more designated network devices specified by a user. (*Note:* The examiner is construing the term "user" to be any network entity. ¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. See also ¶0043)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Gonda, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 8,

Saskio-Gonda teaches the method of claim 1.

Saskio-Gonda is silent as to end stations are specified by a user.

Jain '072 teaches a notification of the change in status includes an identifier of a group defined by a user to include the end station. (*Note:* The examiner is construing the term "user" to be any network entity. ¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Gonda, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, e.g., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 12,

Claim 12 is a claim to a network switching system implementing the method of claim 4. Therefore claim 12 is rejected for the reasons set forth for claim 4.

Referring to claim 13,

Claim 13 is a claim to a network switching system implementing the method of claim 5. Therefore claim 13 is rejected for the reasons set forth for claim 5.

Referring to claim 14,

Claim 14 is a claim to a network switching system implementing the method of claim 8. Therefore claim 14 is rejected for the reasons set forth for claim 8.

Referring to claim 16,

Saskio-Gonda teaches the system of claim 15.

Saskio-Gonda is silent as to an end station without a second network interface.

Jain '072 teaches external equipment (e.g., end stations) without a second network interface coupled to edge equipment via a network link, such as CE 118 (FIG. 1 and ¶0028).

To apply the concept of including a single network interface device of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Gonda, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., using a single interface device), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by including end stations with single interfaces, the system becomes more compatible with legacy devices.

Referring to claim 17,

Claim 17 is a claim to a system implementing the method of claim 4. Therefore claim 17 is rejected for the reasons set forth for claim 4.

Referring to claim 18,

Saskio-Gonda teaches the system of claim 15, wherein the second network device configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second network device and a limited subset of the plurality of end stations (Saskio: *See rejection for Claim 5*).

Saskio-Gonda is silent as to the limited subset of the plurality of end stations are specified by a user.

Jain '072 teaches wherein the notification of the change in status includes an identifier of a group (¶¶0070-0071) and it identifies a plurality of end stations that are in the group (¶¶0070-0071).

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Gonda, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 33,

Saskio-Gonda teaches the aggregation device of claim 19, wherein the second network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second network device and a plurality of end stations. (Saskio: ¶0028 teaches if SW1 gets the link-down state, it sets the downstream links, $L1_1$ and $L2_1$, to the link-down state as well. $L1_1$ and $L2_1$ connect SW1 to the Host.)

Saskio-Gonda does not appear to explicitly disclose the change in status includes an identifier of a group.

Jain '072 teaches wherein the notification of the change in status includes an identifier of a group (¶¶0070-0071) and a first network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the first network device and a plurality of end stations that are in the group (Fig. 6B and ¶¶0062-0066).

To apply the pre-configured multi-cast identifier idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Gonda, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination identification for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 34,

Saskio-Gonda teaches the aggregation device of claim 19.

Saskio-Gonda is silent as to end stations are specified by a user.

Jain '072 teaches a notification of the change in status includes an identifier of a group defined by a user to include the end station. (*Note:* The examiner is construing the term "user" to be any network entity. ¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. See also ¶0043)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Gonda, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, e.g., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 35,

Saskio-Gonda teaches the device of claim 28.

Saskio-Gonda is silent as to end stations are specified by a user.

Jain '072 teaches a notification of the change in status includes an identifier of a group defined by a user to include the end station. (*Note:* The examiner is construing the term "user" to be any network entity. ¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. See also ¶0043)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Gonda, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, e.g., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

3. Claims 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio in view of Gonda, and Rodeheffer et al. (US 6721275) (hereinafter "Rodeheffer").

Referring to claim 29,

Saskio-Gonda teaches the method of claim 1.

Saskio-Gonda appears to be silent as to the notification of the change in status includes a time stamp of action occurrence.

Rodeheffer teaches wherein a notification of the change in status includes a time stamp of action occurrence (col. 9, ll. 63-67 and col. 26, ll. 46-65).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify Saskio-Gonda with the teachings of Rodeheffer, because Rodeheffer's teachings enable a device to distinguish the latest updates (Rodeheffer: col. 26, ll. 46-65).

Referring to claim 31,

Claim 31 is a claim to a system implementing the method of claim 29. Therefore claim 31 is rejected for the reasons set forth for claim 29.

4. Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio in view of Gonda, and Dey (US 6801506) (hereinafter "Dey").

Referring to claim 30,

Saskio-Gonda teaches the network switching system of claim 10.

Saskio-Gonda appears to be silent as to the change in status includes a message counter for a number of messages sent for changes in status.

Dey teaches the concept of a notification of the change in status includes a message counter for a number of messages sent for changes in status (col. 12, ll. 42-63).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify Saskio-Gonda with the teachings of Dey, because Dey's teachings enable tracking of problematic nodes which are constantly changing states and reducing the available bandwidth.

Referring to claim 32,

Claim 32 is a claim to a device substantially similar to the system of claim 30. Therefore claim 32 is rejected for the reasons set forth for claim 30.

Examiner's Notes

Cited prior art references must be considered in their entireties. *See, e.g., W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Applicant is advised that the specified citations above are merely representative of the teachings of the prior art, and that other supportive sections from within the entirety of a reference—*e.g.*, incorporation by references, figures, and/or claims—are implicitly applied to teach and/or suggest the claims. Citations should not be viewed as assertions that the applicable teachings of a reference are limited to or restricted by specified sections.

Applicant may not introduce any new matter to the claims and/or specification. *See* MPEP § 2163.03(I). For any subsequent response that contains new and/or amended claims, the examiner respectfully requests the applicant point out where *required* corresponding written description is found in the originally filed application. *See* MPEP § 2163.04(I)(B); *see also* MPEP § 2163.06.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 04/25/11 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wing Ma whose telephone number is 571-270-5656. The examiner can normally be reached on Monday thru Friday, during the hours of 9:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached at 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing Ma/
Examiner, Art Unit 2456

/Salad Abdullahi/
Primary Examiner, Art Unit 2456

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PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	11398519
Filing Date	2006-04-05
First Named Inventor	Gokul S. Tirumalai
Art Unit	2456
Examiner Name	Wing Ma
Attorney Docket Number	CPOL778793

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	2	6442133	B2	2002-08-27	Owada	
	3	7480283	B1	2009-01-20	Sylvain	
	4	7518986	B1	2009-04-14	Chadalavada et al.	
	5	7580349	B1	2009-08-25	Wang et al.	

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/W.M./	1	20020167895	A1	2002-11-14	Zhu et al.	

Receipt date: 04/25/2011	Application Number	11398519	11398519 - GAU: 2456
INFORMATION DISCLOSURE STATEMENT BY APPLICANT **(Not for submission under 37 CFR 1.99)**	Filing Date	2006-04-05	
	First Named Inventor	Gokul S. Tirumalai	
	Art Unit	2456	
	Examiner Name	Wing Ma	
	Attorney Docket Number	CPOL778793	

/W.M./						
	2	20030021226	A1	2003-01-30	Mor	
	3	20030161260	A1	2003-08-28	Murugan	
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	First Named Inventor	Gokul S. Tirumalai	
	Art Unit	2456	
	Examiner Name	Wing Ma	
	Attorney Docket Number	CPOL778793	

/W.M./	13	20060256712	A1	2006-11-16	Imajuku et al.		
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	First Named Inventor	Gokul S. Tirumalai	
	Art Unit	2456	
	Examiner Name	Wing Ma	
	Attorney Docket Number	CPOL778793	

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/W.M./	1	Office Action History for U.S. Patent Application Serial No. 12/180,934 (CPOL956171) from March 22, 2010 to December 23, 2010.	☐

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11398519 - GAU: 2456

Doc code: IDS

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/W.M./	1	7197660	B1	2007-03-27	Liu et al.	

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Receipt date: 06/14/2011	Application Number	11398519	11398519 - GAU: 2456
INFORMATION DISCLOSURE STATEMENT BY APPLICANT **(Not for submission under 37 CFR 1.99)**	Filing Date	2006-04-05	
	First Named Inventor	Gokul S. Tirumalai	
	Art Unit	2456	
	Examiner Name	Wing Ma	
	Attorney Docket Number	CPOL778793	

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EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L6	15078	(switch$4 or failover or (fail near over)) and (path or route) and (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:56
L7	561	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:56
L10	5793	709/238.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:56
L11	1370	709/238.ccls. and notification	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:56
L12	114	709/238.ccls. and notification and (failover or (fail near over))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:56
L13	728	709/238.ccls. and notification and ((failover or (fail near over)) or switch)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:56
L14	1487	709/239.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:56
L15	34	("2003/0117950").URPN.	USPAT	OR	ON	2011/09/26 11:56
L28	561	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L41	88	(network near administrator) same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57

L42	120	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L43	33	link same failure same manually same configure	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L48	116	(failure near over) and administrator and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L49	58	link same failure same administrator same list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L50	219	link same failure same administrator same (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L68	1644	(link same failure same list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L69	561	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L70	379	L69 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L71	2086	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L72	1176	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table) and ("370"/$$.ccls. or "709"/$$.ccls.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L73	2880	370/241.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57

L74	736	370/244.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L75	435	370/245.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L76	1265	370/248.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L77	181	L74 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L86	561	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L87	1813	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L89	1443	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream)) and (notificat $5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L90	24	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L91	84	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57

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L92	20	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L93	23	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error or disconnect$5) same (aggregat $5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L94	90	(failure or change or update or error or disconnect$5) same (aggregate adj5 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L95	122	(failure or change or update or error or disconnect$5) same (aggregate near3 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L96	102	L95 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L98	321	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near25 (aggregat$5 near5 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57

L99	268	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near20 (aggregat$5 near3 (link or path or stream or flow)) near20 (change or disconnect or failure or fail or update or error) near20 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L100	253	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L101	25	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) near15 (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L102	29	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) near25 (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57

L103	25	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) near25 (notificat$5 or alert or message)	US-PGPUB; USPAT	OR	ON	2011/09/26 11:57
L107	201	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L109	22	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) near3 up) or (uplink or upstream) or (up? link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L110	201	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57

L114	97	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or error) same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L115	68	L114 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L116	11	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (fault) same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57
L120	201	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/26 11:57

EAST Search History (Interference)

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09/26/11 12:10:28 PM
C:\Documents and Settings\wma\My Documents\EAST\Workspaces\11398519.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	10/15/2008	07/10/2009	02/23/2010	07/30/2010	02/12/2011	09/26/2011			
	1	✓	✓	✓	✓	✓	✓			
	2	✓	✓	✓	✓	✓	✓			
	3	✓	✓	✓	✓	✓	✓			
	4	✓	✓	✓	✓	✓	✓			
	5	✓	✓	✓	✓	✓	✓			
	6	✓	✓	✓	✓	✓	✓			
	7	✓	-	-	-	-	-			
	8	✓	✓	✓	✓	✓	✓			
	9	✓	✓	✓	✓	✓	✓			
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	35					✓	✓			

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

SEARCHED

Class	Subclass	Date	Examiner
709	238, 239	10/2008	WM
370	241, 244, 245, 248	10/2008	WM

SEARCH NOTES

Search Notes	Date	Examiner
Inventors' names searches on EAST	10/2008	WM
text search only on EAST - see search history printout	10/2008	WM
updated EAST search - see printout	07/2009	WM
updated EAST search - see printout	02/2010	WM
updated EAST search - see printout	08/2010	WM
updated EAST search - see printout	02/2011	WM
updated EAST search - see printout	09/2011	WM

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Tirumalai et al.

Serial No.: 11/398,519

Confirmation No.: 7705

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§

Filed: April 5, 2006

Group Art Unit: 2456

Examiner: Wing Ma

For: SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES

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

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office to fax number 571-273-8300 to the attention of Examiner Wing Ma, or electronically transmitted via EFS-Web, on the date shown below:

June 23, 2011 — Date
/Esther MARQUES/ — Esther Marques

Dear Sir:

RESPONSE TO OFFICE ACTION DATED FEBRUARY 23, 2011

In response to the Office Action dated February 23, 2011, having a shortened statutory period for response extended one month and set to expire on June 23, 2011, please enter this response and reconsider the claims pending in the application for reasons discussed below. While no fees are believed due, the Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782 / CPOL778793 for any fees, including extension of time fees or excess claim fees, required to make this response timely and acceptable to the Office.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. Remarks/Arguments begin on page 9 of this paper.

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IN THE CLAIMS:

Please amend the claims as follows:

1. (Previously Presented) A method for managing a network path between at least one end station and a network core, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;

sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device in communication with the end station via a first downstream communication link;

disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device; and

continuing to carry traffic for management of a network on the aggregate link after sending the notification of change in status to the second network device.

2. (Original) The method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

3. (Currently Amended) The method of claim 1, wherein sending the notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device.

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4. (Currently Amended) The method of claim [[1]] 3, wherein sending [[a]] the message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more designated network devices specified by a user.

5. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second network device and a plurality of end stations that are in the group.

6. (Previously Presented) The method of claim 1, wherein the second network device is configured to forward a message containing the notification to one or more designated network devices specified by a user.

7. (Canceled)

8. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

9. (Previously Presented) The method of claim 1, further comprising:

detecting, by the first network device, recovery of connectivity between the first network device and the network core; and

sending, by the first network device, notification of the recovery in status to the second network device; and

in response to receiving the notification of the recovery in status, enabling by the second network device, the first downstream communication link.

10. (Previously Presented) A network switching system, comprising:

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core,

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wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link between the first network device and the second network device;

a first downstream communication link between the second network device and an end station that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the network switching system after disabling the first downstream communication link; and

a second downstream link between a third network device and the end station that is established as an alternate path between the end station and the network core that does not include the first network device when the first downstream communication link is disabled.

11. (Original) The system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device.

12. (Previously Presented) The system of claim 10, wherein the first network device is configured to send notification of the change in status to a plurality of designated network devices specified by a user.

13. (Previously Presented) The system of claim 10, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second network device and a plurality of end stations that are in the group.

14. (Previously Presented) The system of claim 10, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

15. (Previously Presented) A system, comprising:

a plurality of end stations;

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the first network device and the network core; and

at least a second network device configured to receive, from the first network device, via an aggregate link between the first network device and the second network device, notification of the change in status from the first network device;

downstream communication links between first network interface devices on the plurality of end stations including a first downstream communication link that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the system after the first downstream communication link is disabled;

additional downstream communications links between second network interface devices thereon and at least a third network device including a second downstream communications link that is established in response to the disabling of the first downstream communication link to provide an alternate path between at least some of the plurality of end stations and the network core that does not include the first network device.

16. (Original) The system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface.

17. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes an identifier of a group defined by a user to include the at least some of the plurality of end stations.

18. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to, in response to receiving notification of the change in status from the first

network device, disable the downstream communication links between the second network device and a limited subset of the plurality of designated end stations that are in the group.

19. (Previously Presented) An aggregation device comprising:

a processor; and

a non-transitory computer readable medium containing instructions which, when executed by the processor, cause the aggregation device to perform operations comprising,

detecting a change in status of a first upstream communication link between the aggregation device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the aggregation device and the network core,

sending notification of the change in status, via an aggregate link between the aggregation device and a first network device, to the first network device in communication with an end station via a first downstream communication link,

disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a second network device and the end station to establish an alternate path between the end station and the network core that does not include the aggregation device, and

maintaining the aggregate link to continue to carry traffic for management of a network after sending the notification.

20. (Previously Presented) The aggregation device of claim 19, wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network core; and

sending notification of the recovery in status to the first network device.

21-27. (Canceled)

28. (Previously Presented) A network device comprising:

means for detecting a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the network device and the network core;

means for sending notification of the change in status, via an aggregate link between the first network device and a second network device, to the second network device in communication with an end station via a downstream communication link;

means for disabling the downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device; and

means for maintaining the aggregate link to continue to carry traffic for management of the network after sending the notification.

29. (Previously Presented) The method of claim 1, wherein the notification of the change in status includes a time stamp of action occurrence.

30. (Previously Presented) The network switching system of claim 10, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

31. (Previously Presented) The system of claim 15, wherein the notification of the change in status includes a time stamp of action occurrence.

32. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

33. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes an identifier of a group and the first network device is configured to disable, in response to receiving the notification, a plurality of

downstream communication links between the first network device and a plurality of end stations that are in the group.

34. (Previously Presented) The aggregation device of claim 19, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

35. (Previously Presented) The network device of claim 28, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

REMARKS

This is intended as a full and complete response to the Office Action dated February 23, 2011, having a shortened statutory period for response extended one month and set to expire on June 23, 2011. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-6, 8-20 and 28-35 are pending in the application. Claims 1-6, 8-20 and 28-35 remain pending following entry of this response. Claims 3 and 4 have been amended. Applicants submit that the amendments do not introduce new matter.

Claim Rejections - 35 U.S.C. § 103

Claims 1-3, 9-11, 13, 15, 19-20 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Goldman et al.* (U.S. Patent No. 6,628,661, hereinafter, "*Goldman*") in view of *Saskio* (U.S. Publication 2004/0105390). Claims 29 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Goldman* in view of *Saskio*, and *Rodeheffer et al.* (U.S. Patent No. 6,721,275, hereinafter, "*Rodeheffer*"). Claims 30 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Goldman* in view of *Saskio*, and *Dey* (U.S. Patent No. 6,801,506). Respectfully, Applicants traverse these rejections.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2141. Establishing a *prima facie* case of obviousness begins with first resolving the factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The factual inquiries are as follows:

(A) determining the scope and content of the prior art;
(B) ascertaining the differences between the claimed invention and the prior art;
(C) resolving the level of ordinary skill in the art; and
(D) considering any objective indicia of nonobviousness.

Once the *Graham* factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

Respectfully, Applicants submit that the Examiner has not properly characterized the teachings of the references and/or the claims at issue. Accordingly, a *prima facie* case of obviousness has not been established.

In this case, Applicants submit that the combination of *Goldman* and *Saskio* does not disclose the method recited by claim 1 "for managing a network path between at least one end station and a network core." For example, these references do not disclose:

- sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device in communication with the end station via a first downstream communication link;
- disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device.

Independent claims 10, 15, 19 and 28 each recite comparable limitations. In rejecting claim 1, the Examiner relies on *Goldman* as disclosing the limitations set forth above.

Goldman is directed to an approach for a group of Ethernet switches to in which loops have been "cut" using the spanning tree protocol. As is well known, Spanning Tree is a network protocol that ensures a loop-free topology for any bridged Ethernet local area network. Spanning tree Protocol prevents bridge loops. Spanning tree also allows a network design to include spare (redundant) links to provide automatic backup paths if an active link fails, without the danger of bridge loops, or the need for manual enabling/disabling of these backup links. One known drawback to Spanning tree is that it takes a long time to determine loop free network topology for a set of switches (*i.e.*, it can take long times to determine what links need to be cut to provide a loop free topology. *Goldman* teaches an approach for addressing link failure in a way that avoids the need to retrigger the spanning tree algorithm, at least in some cases.

The specific modification disclosed in *Goldman* is to determine a distance from one (or more) ports on an Ethernet switch to a core network. If the layer 2 link on the switch goes down, the switch may be able to use a different link on that same switch, without risk of creating a loop in network, at least in some cases. Goldman provides the following example:

> **First, at step 50, switch A2 determines whether a communication failure (for example, due to a failed communications link or receiving switch) has occurred at the switch's root port--that is, at the port connected to link 32.**
> If a failure has occurred, switch A2 determines at step 51 whether it has available any other ports, for example, redundant communication links, that are candidates for reconfiguration, If no such ports were available, at step 52 the switch would send out frames to notify other switches in the network of a topology change and that the spanning tree algorithm must be re-run to generate a new spanning tree.
> **But here, because switch A2 has another port available (i.e., the presently blocked port connected to link 33), at step 53 the switch determines whether that port connects to a switch that is upstream, or, equivalently, to a switch that has a smaller distance-to-core value.** Again, if no such port was available at step 52 the switch would send out frames to trigger the spanning tree algorithm.
> **In this example, however, switch A2 knows, due to the state information obtained from heartbeat frames, that the switch connected to the blocked port--switch B1--has a distance-to-core value (two) that is one less than switch A2's distance-to-core value (three).** Accordingly, at step 54 switch A2 reconfigures the port connected to switch B1 to be in a forwarding state, at which point communication link 33 becomes part of the spanning tree. **Because switch A2 has changed its root port to one that connects to an upstream switch, this reconfiguration is guaranteed to recover the spanning tree's integrity and produce a topology that is loop-free and provides connectivity among all end-stations**.

Goldman, 8:17-46. As this passage describes, when the link being used by a switch (as determined by performing the spanning tree algorithm) fails, the switch can simply being using another link on that same switch, provided it is closer to the core network, as determined by the distance-to-core value. Otherwise, the switches have to again perform the spanning tree algorithm to converge on a new, loop-free topology.

The Examiner relies on this description to suggest:

> [*Goldman* discloses] sending, by the first network device, via a link between the first network device and a second network device (Fig. 5), notification of the change in status to the second network device in communication with the end station (col. 8, ll. 42-46) via a first downstream communication link (col. 8, ll. 35-46 exemplifies a change in upstream status).

Office Action, p. 4. However, the passages cited by the examiner do not describe a switch sending a message over a downstream communication link, Instead, it describes determining that one "upstream" link has failed, and if another "upstream link" is available (again, as identified by a link to a switch having distance-to-core value lower than the switch with the failed link) activating that link. The switch with the failed link does not send a "notification of the change in status to the second network device in communication with the end station via a first downstream communication link," it simply activates another link when one goes down (if possible). Otherwise, spanning tree is used to converge on a new network topology.

The Examiner further relies on this same description to suggest:

> [*Goldman* discloses] disabling the first downstream communication link in a manner that would cause the end station (col. 8, ll. 42-46) to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device (col. 8, ll. 35-46 exemplifies a change in upstream status which generates a new path); and

Office Action, p. 5. As should be apparent from the above discussion, the cited passage does not disclose disabling a downstream communication link "in a manner that would cause the end station to failover to a second downstream link," or otherwise. In fact, the cited passage does not disclose disabling a link at all, instead it discuss a specific approach for responding to a communication link failure by switching to another communication link, at least in some cases, without having to re-perform the spanning tree protocol to converge on a new loop-free topology.

Accordingly, for all the foregoing reasons, Applicants submit that *Goldman* does not disclose at least the steps discussed above. Therefore, the claims are believed to be allowable over the combination of *Goldman* and *Saskio* and allowance of the claims is respectfully requested.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 C.F.R. 1.4,

/Gero G. MCCLELLAN, Reg. #44227/

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Electronic Patent Application Fee Transmittal

Application Number:	11398519
Filing Date:	05-Apr-2006
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Filer:	Gero G. McClellan/Esther Marques
Attorney Docket Number:	CPOL778793

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with $0 paid	1251	1	130	130

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	130

Electronic Acknowledgement Receipt	
EFS ID:	10371096
Application Number:	11398519
International Application Number:	
Confirmation Number:	7705
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Customer Number:	62147
Filer:	Gero G. McClellan/Esther Marques
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL778793
Receipt Date:	23-JUN-2011
Filing Date:	05-APR-2006
Time Stamp:	13:14:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$130
RAM confirmation Number	11211
Deposit Account	200782
Authorized User	MCCLELLAN,GERO G.

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		CPOL778793_ROA.pdf	105790 57f4d027a35[illegible]5	yes	13

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Claims	2	8
Applicant Arguments/Remarks Made in an Amendment	9	13

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30311 1cd0a02e7d[illegible]	no	2

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

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PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/398,519	04/05/2006	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s)						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 06/23/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 27	Minus	** 28	= 0	X $ =		OR	X $52=	0
Independent (37 CFR 1.16(h))	* 5	Minus	***7	= 0	X $ =		OR	X $200=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

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Legal Instrument Examiner:
/EVELYN NIMMONS/

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	11398519
Filing Date	2006-04-05
First Named Inventor	Gokul S. Tirumalai
Art Unit	2456
Examiner Name	Wing Ma
Attorney Docket Number	CPOL778793

U.S.PATENTS Remove

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
	1	7197660	B1	2007-03-27	Liu et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	First Named Inventor	Gokul S. Tirumalai
	Art Unit	2456
	Examiner Name	Wing Ma
	Attorney Docket Number	CPOL778793

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Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11398519
	Filing Date	2006-04-05
	First Named Inventor	Gokul S. Tirumalai
	Art Unit	2456
	Examiner Name	Wing Ma
	Attorney Docket Number	CPOL778793

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Gero G. MCCLELLAN/ Reg. #44227	Date (YYYY-MM-DD)	2011-06-14
Name/Print	Gero G. McClellan	Registration Number	44,227

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

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

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	11398519
Filing Date:	05-Apr-2006
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Filer:	Gero G. McClellan/Esther Marques
Attorney Docket Number:	CPOL778793

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

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

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt	
EFS ID:	10302551
Application Number:	11398519
International Application Number:	
Confirmation Number:	7705
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Customer Number:	62147
Filer:	Gero G. McClellan/Esther Marques
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL778793
Receipt Date:	14-JUN-2011
Filing Date:	05-APR-2006
Time Stamp:	17:07:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$180
RAM confirmation Number	4392
Deposit Account	200782
Authorized User	MCCLELLAN,GERO G.

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 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	**Document Description**	**File Name**	**File Size(Bytes)/ Message Digest**	**Multi Part /.zip**	**Pages (if appl.)**
1	Information Disclosure Statement (IDS) Form (SB08)	CPOL778793_SIDS.PDF	611743 e150d2f2e7e1488d7ca805afb2f9e6b07ab05a9ae18	no	4
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30270 815e5f7fe61db02a3fd449ecb1b40adbe2f1ee0e8	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	642013		

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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.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	11398519
Filing Date	2006-04-05
First Named Inventor	Gokul S. Tirumalai
Art Unit	2456
Examiner Name	Wing Ma
Attorney Docket Number	CPOL778793

U.S.PATENTS Remove

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
	1	5835696		1998-11-10	Hess	
	2	6442133	B2	2002-08-27	Owada	
	3	7480283	B1	2009-01-20	Sylvain	
	4	7518986	B1	2009-04-14	Chadalavada et al.	
	5	7580349	B1	2009-08-25	Wang et al.	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

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
	1	20020167895	A1	2002-11-14	Zhu et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11398519
	Filing Date	2006-04-05
	First Named Inventor	Gokul S. Tirumalai
	Art Unit	2456
	Examiner Name	Wing Ma
	Attorney Docket Number	CPOL778793

	2	20030021226	A1	2003-01-30	Mor	
	3	20030161260	A1	2003-08-28	Murugan	
	4	20030185225	A1	2003-10-02	Wirth et al.	
	5	20040001449	A1	2004-01-01	Rostron et al.	
	6	20040047336	A1	2004-03-11	Shabtay et al.	
	7	20040133693	A1	2004-07-08	Wils et al.	
	8	20050063395	A1	2005-03-24	Smith et al.	
	9	20050108401	A1	2005-05-19	Gonda	
	10	20050111350	A1	2005-05-26	Kano	
	11	20060023630	A1	2006-02-02	Akiyama et al.	
	12	20060159011	A1	2006-07-20	Dalal et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11398519
	Filing Date	2006-04-05
	First Named Inventor	Gokul S. Tirumalai
	Art Unit	2456
	Examiner Name	Wing Ma
	Attorney Docket Number	CPOL778793

	13	20060256712	A1	2006-11-16	Imajuku et al.	
	14	20070183347	A1	2007-08-09	Gu et al.	
	15	20070280103	A1	2007-12-06	Savage et al.	
	16	20080181196	A1	2008-07-31	Regan et al.	
	17	20090096592	A1	2009-04-16	Wu et al.	
	18	20090109998	A1	2009-04-30	Vinayagam et al.	
	19	20100020680	A1	2010-01-28	Salam et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	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]
	1							☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11398519
	Filing Date	2006-04-05
	First Named Inventor	Gokul S. Tirumalai
	Art Unit	2456
	Examiner Name	Wing Ma
	Attorney Docket Number	CPOL778793

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.	T5
	1	Office Action History for U.S. Patent Application Serial No. 12/180,934 (CPOL956171) from March 22, 2010 to December 23, 2010.	☐

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

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04 [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11398519
	Filing Date	2006-04-05
	First Named Inventor	Gokul S. Tirumalai
	Art Unit	2456
	Examiner Name	Wing Ma
	Attorney Docket Number	CPOL778793

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Gero G. MCCLELLAN/ Reg. #44227	Date (YYYY-MM-DD)	2011-04-25
Name/Print	Gero G. McClellan	Registration Number	44,227

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

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

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal	
Application Number:	11398519
Filing Date:	05-Apr-2006
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Filer:	Gero G. McClellan/Esther Marques
Attorney Docket Number:	CPOL778793
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

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

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt	
EFS ID:	9944891
Application Number:	11398519
International Application Number:	
Confirmation Number:	7705
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Customer Number:	62147
Filer:	Gero G. McClellan/Esther Marques
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CPOL778793
Receipt Date:	25-APR-2011
Filing Date:	05-APR-2006
Time Stamp:	11:44:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$180
RAM confirmation Number	6886
Deposit Account	200782
Authorized User	MCCLELLAN,GERO G.

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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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 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	**Document Description**	**File Name**	**File Size(Bytes)/ Message Digest**	**Multi Part /.zip**	**Pages (if appl.)**
1	Information Disclosure Statement (IDS) Filed (SB/08)	CPOL778793_IDS.PDF	612810 6e1f4601d9812323eeca0e5b1ca01ea1221 7a3d	no	6
Warnings:					
Information:					
2	NPL Documents	NPL_OAH_12180934_CPOL956171.pdf	2323486 0fe892b0b1491c5c2e0ee985da47f041486a5bf8 a3bc	no	67
Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	30270 1c6f1665781f8a07f9b0e578cc6d89ad0891 f491	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2966566		

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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
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tatavolai	CISC/12792	7705

62147 7590 02/23/2011
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER
MA, WING

ART UNIT	PAPER NUMBER
2456	

NOTIFICATION DATE	DELIVERY MODE
02/23/2011	ELECTRONIC

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

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

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

PAIR_cofficeaction@pattersonsheridan.com
houston_mail@pattersonsheridan.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	11/398,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	Wing Ma	2456	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-20,and 28-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-20,and 28-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-6, 8-20, and 28-35 are subject to examination. Claims 7 and 21-27 have been previously cancelled.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/05/10 has been entered.

Claim Construction

3. The claims, and only the claims, form the metes and bounds of the invention. Limitations appearing in the specification, but not recited in the claims, are not read into the claims. *In re* Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). (*See* MPEP p 2100-8, c 2, l 45-48; p 2100-9, c 1, l 1-4.) The examiner has full latitude to interpret each claim in the broadest reasonable sense; and the examiner will reference prior art using terminology familiar to one of ordinary skill in the art.

Response to Arguments

4. Applicant's arguments, filed 11/05/10, have been fully considered. Applicant arguments regarding the combination the combination of Saskio and Jain '229 not teaching the newly amended subject matter are moot because of the new grounds of rejection below.

Claim Rejections - 35 USC § 103

5. 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.

6. Claims 1-3, 9-11, 13, 15, 19-20, and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman et al. (hereinafter "Goldman") (US 6,628,661 B1) in view of Saskio (hereinafter "Saskio") (US 2004/0105390 A1).

Referring to claim 1,

Goldman teaches/suggests a method for managing a network path between at least one end station and a network core (Fig. 3), comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core (Fig. 3 and col. 6, ll. 29-54 teaches each device detects changes in the upstream link);

sending, by the first network device, via a link between the first network device and a second network device (Fig. 5), notification of the change in status to the second network device in communication with the end station (col. 8, ll. 42-46) via a first downstream communication link (col. 8, ll. 35-46 exemplifies a change in upstream status);

disabling the first downstream communication link in a manner that would cause the end station (col. 8, ll. 42-46) to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device (col. 8, ll. 35-46 exemplifies a change in upstream status which generates a new path); and

continuing to carry traffic for management of a network on links between an aggregation device and access device (col. 6, ll. 38-48). Goldman does not explicitly depict end stations connected to the switches or explicitly disclose sending, by the first network device, via an aggregate link between the first network device and a second network device notification of a change in status.

Saskio teaches connecting end stations to the switches (Fig. 1 and ¶0028), and connecting a first network device via an aggregate link to a second network device (Fig. 1 and ¶0028).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the system of Goldman with the teachings of Saskio, because Goldman expressly discusses connectivity to end stations (Goldman: col. 1, ll. 11-24) and adding/removing access devices to a LAN topology is a matter of design because the concepts of Goldman and Saskio cannot be fairly limited to their depicted example embodiments.

Referring to claim 2,

Goldman and Saskio teach the method of claim 1. Goldman teaches wherein one or more intermediate network devices, between the first and second network devices,

receives the notification of the change in status from the first network device and forwards the notification to the second network device (col. 6, ll. 38-54).

Referring to claim 3,

Goldman and Saskio teach the method of claim 1. Saskio teaches wherein sending notification, by the first network device, of the change in status to the second network device comprises sending a message from the first network device to one or more network devices in communication with the first network device. (par. [0028] teaches propagation of the link-down state to Host devices, which are network devices in communication with the first network device (i.e., SW7).)

Referring to claim 9,

Goldman and Saskio teach the method of claim 1. Saskio teaches detecting, by the first network device, recovery of connectivity between the first network device and the network core (par. [0031] teaches the recovery detection's process is the same as the failure detection's; therefore the monitoring mechanism taught by pars. [0034] and [0035] also applies to link-up situations); and

sending, by the first network device, notification of the recovery in status to the second network device (If the steps recited by par. [0028] are modified to reflect the link-up situation, the first network device, SW7, would propagate notification of the recovery, link-up state, to the secondary network device, SW1.); and

in response to receiving the notification of the recovery in status, enabling by the second network device, the first downstream communication link. (If the steps recited by par. [0028] are modified to reflect the link-up situation, the second network device, SW1,

would propagate the link-up state to the Host 1, thereby enabling the first downstream communication link, $L1_1$.)

Referring to claim 10,

Claim 10 is a claim to a network switching system implementing the method of claim 1. Therefore claim 10 is rejected for the reasons set forth for claim 1.

Referring to claim 11,

Claim 11 is a claim to a network switching system implementing the method of claim 2. Therefore claim 11 is rejected for the reasons set forth for claim 2.

Referring to claim 15,

Claim 15 is a claim to a system substantially similar to the system of claim 10. Therefore claim 15 is rejected for the reasons set forth for claim 10. Also, Saskio teaches a plurality of end stations (FIG. 1 and ¶0028).

Referring to claim 19,

Claim 19 is a claim to an aggregation device implementing the method of claim 1. Therefore claim 19 is rejected for the reasons set forth for claim 1; wherein the claimed aggregation device maps to SW7 (of Saskio), and the claimed network device maps to SW1 (of Saskio).

Referring to claim 20,

Goldman and Saskio teach the aggregation device of claim 19. Saskio further teaches wherein the operations comprise:

detecting recovery of connectivity between the aggregation device and the network core (par. [0031] teaches the recovery detection's process is the same as the

failure detection's; therefore the monitoring mechanism taught by pars. [0034] and [0035] also applies to link-up situations); and

sending notification of the recovery in status to the first network device. (If the steps recited by par. [0028] are modified to reflect the link-up situation, the aggregation device, SW7, would propagate notification of the recovery, link-up state, to the network device, SW1.)

Referring to claim 28,

Claim 28 is a claim to a network device "means for" implementing the device of claim 19. Therefore claim 28 is rejected for the reasons set forth for claim 19.

7. Claims 4-6, 8, 12-14, 16-18, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman in view of Saskio, and Jain '072 (hereinafter "Jain '072") (US 2002/0112072 A1).

Referring to claim 4,

Goldman and Saskio teach the method of claim 1.

Goldman and Saskio are silent as to specifications by a user.

Jain '072 teaches wherein sending a message from a first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user. (¶0070 teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree concept of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Goldman, Saskio,

and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 5,

Goldman and Saskio teach the method of claim 1.

Saskio further teaches wherein the second network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second network device and a plurality of end stations. (par. [0028] teaches if SW1 gets the link-down state, it sets the downstream links, $L1_1$ and $L2_1$, to the link-down state as well. $L1_1$ and $L2_1$ connect SW1 to the Host.)

Goldman and Saskio do not appear to explicitly disclose the change in status includes an identifier of a group.

Jain '072 teaches wherein the notification of the change in status includes an identifier of a group (¶¶0070-0071), and it identifies a plurality of end stations that are in the group (¶¶0070-0071).

To apply the pre-configured multi-cast identifier concept of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Goldman, Saskio, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods

(e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination identification for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 6,

Goldman and Saskio teach the method of claim 1.

Goldman and Saskio are silent as to the second network device is configured to forward a message to one or more network designated devices specified by a user.

Jain '072 teaches wherein a second network device is configured to forward a message containing the notification to one or more designated network devices specified by a user. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Goldman, Saskio, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 8,

Goldman and Saskio teach the method of claim 1.

Goldman and Saskio are silent as to end stations are specified by a user.

Jain '072 teaches a notification of the change in status includes an identifier of a group defined by a user to include the end station. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Goldman, Saskio, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, e.g., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 12,

Claim 12 is a claim to a network switching system implementing the method of claim 4. Therefore claim 12 is rejected for the reasons set forth for claim 4.

Referring to claim 13,

Claim 13 is a claim to a network switching system implementing the method of claim 5. Therefore claim 13 is rejected for the reasons set forth for claim 5.

Referring to claim 14,

Claim 14 is a claim to a network switching system implementing the method of claim 8. Therefore claim 14 is rejected for the reasons set forth for claim 8.

Referring to claim 16,

Goldman and Saskio teach the system of claim 15.

Goldman and Saskio are silent as to an end station without a second network interface.

Jain '072 teaches external equipment (e.g., end stations) without a second network interface coupled to edge equipment via a network link, such as CE 118 (FIG. 1 and para. [0028]).

To apply the concept of including a single network interface device of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Goldman, Saskio, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., using a single interface device), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by including end stations with single interfaces, the system becomes more compatible with legacy devices.

Referring to claim 17,

Claim 17 is a claim to a system implementing the method of claim 4. Therefore claim 17 is rejected for the reasons set forth for claim 4.

Referring to claim 18,

Goldman and Saskio teach the system of claim 15.

Saskio also teaches the second network device configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second network device and a limited subset of the plurality of end stations (*see rejection for claim 5*).

Goldman and Saskio are silent as to the limited subset of the plurality of end stations are specified by a user.

Jain '072 teaches wherein the notification of the change in status includes an identifier of a group (¶¶0070-0071) and it identifies a plurality of end stations that are in the group (¶¶0070-0071).

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Goldman, Saskio, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 33,

Goldman and Saskio teach the aggregation device of claim 19.

Saskio teaches wherein the second network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links

between the second network device and a plurality of end stations. (par. [0028] teaches if SW1 gets the link-down state, it sets the downstream links, $L1_1$ and $L2_1$, to the link-down state as well. $L1_1$ and $L2_1$ connect SW1 to the Host.)

Goldman and Saskio do not appear to explicitly disclose the change in status includes an identifier of a group.

Jain '072 teaches wherein the notification of the change in status includes an identifier of a group (¶¶0070-0071) and a first network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the first network device and a plurality of end stations that are in the group (Fig. 6B and ¶¶0062-0066).

To apply the pre-configured multi-cast identifier idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Goldman, Saskio, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination identification for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 34,

Goldman and Saskio teach the aggregation device of claim 19.

Goldman and Saskio are silent as to end stations are specified by a user.

Jain '072 teaches a notification of the change in status includes an identifier of a group defined by a user to include the end station. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Goldman, Saskio, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, e.g., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 35,

Goldman and Saskio teach he device of claim 28.

Goldman and Saskio are silent as to end stations are specified by a user.

Jain '072 teaches a notification of the change in status includes an identifier of a group defined by a user to include the end station. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Goldman, Saskio, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, e.g., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

8. Claims 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman in view of Saskio, and Rodeheffer et al. (hereinafter "Rodeheffer") (US 6,721,275 B1).

Referring to claim 29,

Goldman and Saskio teach the method of claim 1.

Goldman and Saskio appear to be silent as to the notification of the change in status includes a time stamp of action occurrence.

Rodeheffer teaches wherein a notification of the change in status includes a time stamp of action occurrence (col. 9, ll. 63-67 and col. 26, ll. 46-65).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the system of Goldman and Saskio with the teachings of Rodeheffer, because Rodeheffer's teachings enable a device to distinguish the latest updates (Rodeheffer: col. 26, ll. 46-65).

Referring to claim 31,

Claim 31 is a claim to a system implementing the method of claim 29. Therefore claim 31 is rejected for the reasons set forth for claim 29.

9. Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman in view of Saskio, and Dey (hereinafter "Dey") (US 6,801,506 B1).

Referring to claim 30,

Goldman and Saskio teach the network switching system of claim 10.

Goldman and Saskio appear to be silent as to the change in status includes a message counter for a number of messages sent for changes in status.

Dey teaches the concept of a notification of the change in status includes a message counter for a number of messages sent for changes in status (col. 12, ll. 42-63).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the system of Goldman and Saskio with the teachings of Dey, because Dey's teachings enable tracking of problematic nodes which are constantly changing states and reducing the available bandwidth.

Referring to claim 32,

Claim 32 is a claim to a device substantially similar to the system of claim 30. Therefore claim 32 is rejected for the reasons set forth for claim 30.

Examiner's Note

10. Prior art references must be considered in their entireties. *See W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Applicant is advised that the specified citations of the

relied upon prior art, are only representative of the teachings of the prior art, and that any other supportive sections within the entirety of the reference (including any figures, ***incorporation by references***, claims, and/or priority documents) is implied as being applied to teach the scope of the claims.

11. Applicant may not introduce any new matter to the claims or to the specification. For any subsequent response that contains new/amended claims, Applicant is required to cite its corresponding support in the specification. *See* MPEP chapter 2163.03 section (I), chapter 2163.04 section (I), and chapter 2163.06.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wing Ma whose telephone number is (571)270-5656. The examiner can normally be reached on Monday thru Friday, during the hours of 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing Ma/
Examiner, Art Unit 2456

/Rupal D. Dharia/
Supervisory Patent Examiner, Art Unit 2456

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*	B	US-6,801,506	10-2004	Dey, Ashish K.	370/256
*	C	US-6,721,275	04-2004	Rodeheffer et al.	370/238
*	D	US-6,678,241	01-2004	Gai et al.	370/216
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	M	US-			

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*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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L27	21	("3920975" | "5452115" | "5509027" | "5521958" | "5790808" | "5802278" | "5864284" | "6112249" | "6311288" | "6330229" | "6373838" | "6542934" | "6657951" | "6674756" | "6714549" | "6721269" | "6954787" | "6987727" | "6992979" | "6996065" | "7082468").PN.	USPAT	OR	ON	2011/02/12 08:58
L28	21	("3920975" | "5452115" | "5509027" | "5521958" | "5790808" | "5802278" | "5864284" | "6112249" | "6311288" | "6330229" | "6373838" | "6542934" | "6657951" | "6674756" | "6714549" | "6721269" | "6954787" | "6987727" | "6992979" | "6996065" | "7082468").PN.	US-PGPUB; USPAT	OR	ON	2011/02/12 08:58
L48	21	("3920975" | "5452115" | "5509027" | "5521958" | "5790808" | "5802278" | "5864284" | "6112249" | "6311288" | "6330229" | "6373838" | "6542934" | "6657951" | "6674756" | "6714549" | "6721269" | "6954787" | "6987727" | "6992979" | "6996065" | "7082468").PN.	USPAT; USOCR	OR	ON	2011/02/12 11:08

L49	21	("3920975" | "5452115" | "5509027" | "5521958" | "5790808" | "5802278" | "5864284" | "6112249" | "6311288" | "6330229" | "6373838" | "6542934" | "6657951" | "6674756" | "6714549" | "6721269" | "6954787" | "6987727" | "6992979" | "6996065" | "7082468").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/02/12 11:08
L61	20	(US-20070237085-$ or US-20020004843-$ or US-20020112072-$).did. or (US-5138615-$ or US-7774448-$ or US-6751190-$ or US-7848264-$ or US-6606325-$ or US-7720019-$ or US-7366191-$ or US-7203743-$ or US-7065079-$ or US-7016351-$ or US-6804236-$ or US-6678241-$ or US-6553028-$ or US-6032194-$ or US-6654371-$ or US-6370142-$ or US-6535491-$).did.	US-PGPUB; USPAT	OR	ON	2011/02/12 12:03
L21	19	(US-20070237085-$ or US-20020004843-$ or US-20020112072-$).did. or (US-5138615-$ or US-7774448-$ or US-6751190-$ or US-7848264-$ or US-6606325-$ or US-7720019-$ or US-7366191-$ or US-7203743-$ or US-7065079-$ or US-7016351-$ or US-6804236-$ or US-6678241-$ or US-6553028-$ or US-6032194-$ or US-6654371-$ or US-6370142-$).did.	US-PGPUB; USPAT	OR	ON	2011/02/12 08:36

L39	19	("6654371").URPN.	USPAT	OR	ON	2011/02/12 09:54
L41	19	(US-20070237085-$ or US-20020004843-$ or US-20020112072-$).did. or (US-5138615-$ or US-7774448-$ or US-6751190-$ or US-7848264-$ or US-6606325-$ or US-7720019-$ or US-7366191-$ or US-7203743-$ or US-7065079-$ or US-7016351-$ or US-6804236-$ or US-6678241-$ or US-6553028-$ or US-6032194-$ or US-6654371-$ or US-6370142-$).did.	US-PGPUB; USPAT	OR	ON	2011/02/12 10:44
L3	17	("20020112072" | "20020152320" | "20030179700" | "20040105390" | "20060227704" | "20070047578" | "20080016402" | "6032194" | "6330229" | "6513129" | "6542934" | "6628661" | "6697339" | "6891808" | "6956824" | "6987740" | "7453900").PN.	US-PGPUB; USPAT	OR	ON	2011/02/12 06:19
L93	17	("20020112072" | "20020152320" | "20030179700" | "20040105390" | "20060227704" | "20070047578" | "20080016402" | "6032194" | "6330229" | "6513129" | "6542934" | "6628661" | "6697339" | "6891808" | "6956824" | "6987740" | "7453900").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/02/12 13:34
L60	15	(58 or 59) and (count $4 and time$3)	US-PGPUB; USPAT; USOCR	OR	ON	2011/02/12 12:02

L74	15	41 and (group$4)	US-PGPUB; USPAT; FPRS; EPO; JPO; IBM_TDB	OR	ON	2011/02/12 12:24
L22	14	21 and (multicast$3 or (multi adj2 cast$3))	US-PGPUB; USPAT; FPRS; EPO; JPO; IBM_TDB	OR	ON	2011/02/12 08:36
L65	14	("20020165962" | "20030142670" | "20040100970" | "20050195818" | "20060120396" | "20060176804" | "20060179188" | "20060229896" | "20070041327" | "20070183418" | "6553028" | "7324439" | "7337350").PN. OR ("7586842").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/02/12 12:12
L73	13	41 and ((multicast$3 or (multi adj2 cast$3)) and group$4)	US-PGPUB; USPAT; FPRS; EPO; JPO; IBM_TDB	OR	ON	2011/02/12 12:24
L56	12	21 and ((multicast$3 or (multi adj2 cast$3))) and (time or timestamp or stamp)	US-PGPUB; USPAT; FPRS; EPO; JPO; IBM_TDB	OR	ON	2011/02/12 11:47
L7	10	("20030031124" | "5138615" | "5379278" | "5732192" | "6222820" | "6222854" | "7006480" | "7197548" | "7200104" | "7213265").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/02/12 06:27
L23	10	21 and ((multicast$3 or (multi adj2 cast$3)) with group)	US-PGPUB; USPAT; FPRS; EPO; JPO; IBM_TDB	OR	ON	2011/02/12 08:36
L42	10	41 and ((multicast$3 or (multi adj2 cast$3)) with group$4)	US-PGPUB; USPAT; FPRS; EPO; JPO; IBM_TDB	OR	ON	2011/02/12 10:45
L6	9	("20030031124" | "5138615" | "5379278" | "5732192" | "6222820" | "6222854" | "7006480" | "7197548" | "7200104" | "7213265").PN.	USPAT; USOCR	OR	ON	2011/02/12 06:27

L83	8	82 and igmp	US-PGPUB; USPAT; FPRS; EPO; JPO; IBM_TDB	OR	ON	2011/02/12 12:36
L13	7	("20010032271" | "20020004843" | "20020060985" | "6530032" | "6725401" | "6751190" | "6813242").PN.	US-PGPUB; USPAT	OR	ON	2011/02/12 06:51

EAST Search History (Interference)

< This search history is empty>

2/ 12/ 2011 5:43:41 PM
C:\ Documents and Settings\ wma\ My Documents\ EAST\ Workspaces\ 11398519_updated search.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	10/15/2008	07/10/2009	02/23/2010	07/30/2010	02/12/2011				
	1	✓	✓	✓	✓	✓				
	2	✓	✓	✓	✓	✓				
	3	✓	✓	✓	✓	✓				
	4	✓	✓	✓	✓	✓				
	5	✓	✓	✓	✓	✓				
	6	✓	✓	✓	✓	✓				
	7	✓	-	-	-	-				
	8	✓	✓	✓	✓	✓				
	9	✓	✓	✓	✓	✓				
	10	✓	✓	✓	✓	✓				
	11	✓	✓	✓	✓	✓				
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	30					✓				
	31					✓				
	32					✓				
	33					✓				
	34					✓				
	35					✓				

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

SEARCHED			
Class	Subclass	Date	Examiner
709	238, 239	10/2008	WM
370	241, 244, 245, 248	10/2008	WM

SEARCH NOTES		
Search Notes	Date	Examiner
Inventors' names searches on EAST	10/2008	WM
text search only on EAST - see search history printout	10/2008	WM
updated EAST search - see printout	07/2009	WM
updated EAST search - see printout	02/2010	WM
updated EAST search - see printout	08/2010	WM
updated EAST search - see printout	02/2011	WM

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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.
11/398,519	04/05/2006	Gokul S. Tatavolai	CISC/12792	7705

62147 7590 11/23/2010

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582

EXAMINER
MA, WING

ART UNIT	PAPER NUMBER
2456	

NOTIFICATION DATE	DELIVERY MODE
11/23/2010	ELECTRONIC

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

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

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

PAIR_cofficeaction@pattersonsheridan.com
houston_mail@pattersonsheridan.com

PTOL-90A (Rev. 04/07)

Interview Summary	Application No.	Applicant(s)	
	11/396,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	Wing Ma	2456	

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

(1) *Wing Ma*. (3)_____.

(2) *Stephanie Winner*. (4)_____.

Date of Interview: *03 November 2010*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1*.

Identification of prior art discussed: *Saskio (US 2004/0105390)*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *The applicant presented potential amendments for consideration by the examiner. The applicant and examiner discussed amendments regarding carrying management data and the network connection of the first upstream link in view of the applicant's specification and cited prior art. After a cursory review, the examiner presented his interpretation of the amendments in light of the applicant's specification. No specific agreement was reached, and the examiner will further consider applicant's remarks/amendments upon the filing of a formal response*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Wing Ma/	/Rupal D. Dhana/
Examiner, Art Unit 2456	Supervisory Patent Examiner, Art Unit 2400

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Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11398519	Filing Date	2006-04-05	Docket Number (if applicable)	SEQ12792	Art Unit	2456
First Named Inventor	Gokul Tirumalai			Examiner Name	Wing Ma		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 200782

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

EFS - Web 2.1.15

PTO/SB/30(EFS (07-09)
Approved for use through 07/31/2012, OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

Signature of Registered U.S. Patent Practitioner			
Signature	/Gero G. MCCLELLAN, Reg. # 44,227/	Date (YYYY-MM-DD)	2010-11-05
Name	Gero G. McClellan	Registration Number	44227

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system or via facsimile in accordance with § 1.6(a)(4).
Dated: 11/5/10 Signature: Kau

Docket No.: SEQ12792 (1654.024762)
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Tirumalai et al.	§	Confirmation No.: 7705
	§	
	§	Group Art Unit: 2456
Serial No.: 11/398,519	§	
	§	Examiner: W. Ma
Filed: April 5, 2006	§	
	§	
For: SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES	§	

AMENDMENT ACCOMPANYING REQUEST FOR CONTINUED EXAMINATION

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

Dear Sir:

INTRODUCTORY COMMENTS

Prior to continued examination, please enter this response and reconsider the claims pending in the application for reasons discussed below.

The Commissioner is hereby authorized to charge underpayments or credit overpayments to counsel's Deposit Account No. 20-0782/ SEQ12792 (1654.024762).

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 9 of this paper.

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AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for managing a network path between at least one end station and a network core, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core;

sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device in communication with the end station via a first downstream communication link~~, the notification designed to cause the second network device to~~;

disabl[[e]]ing the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device; and

continuing to carry traffic for management of a network on the aggregate link after sending the notification of change in status to the second network device.

2. (Original) The method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

3. (Original) The method of claim 1, wherein sending notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device.

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4. (Previously Presented) The method of claim 1, wherein sending a message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more designated network devices specified by a user.

5. (Currently Amended) The method of claim 1, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second network device and a plurality of end stations that are in the group.

6. (Previously Presented) The method of claim 1, wherein the second network device is configured to forward a message containing the notification to one or more designated network devices specified by a user.

7. (Cancelled)

8. (Currently Amended) The method of claim 1, wherein the notification of the change in status includes an identifier of a group ~~the plurality of end stations are designated~~ defined by a user to include the end station.

9. (Currently Amended) The method of claim 1, ~~wherein the change in communication status comprises a loss in connectivity between the first network device and the network and the method~~ further compris[[es]]ing:

detecting, by the first network device, recovery of connectivity between the first network device and the network core; and

sending, by the first network device, notification of the recovery in status to the second network device; and

in response to receiving the notification of the recovery in status, enabling by the second network device, the first downstream communication link.

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10. (Currently Amended) A network switching system, comprising:

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link comprises a loss in connectivity between the first network device and the network core; ~~and~~

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link between the first network device and the second network device; ~~and, in response, disable~~

a first downstream communication link between the second network device and an end station that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the network switching system after disabling the first downstream communication link; and

a second downstream link between a third network device and the end station that is established as an alternate path between the end station and the network core that does not include the first network device when the first downstream communication link is disabled.

11. (Original) The system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device.

12. (Previously Presented) The system of claim 10, wherein the first network device is configured to send notification of the change in status to a plurality of designated network devices specified by a user.

13. (Currently Amended) The system of claim 10, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first

downstream communication links between the second network device and a plurality of end stations that are in the group.

14. (Currently Amended) The system of claim 1[[3]]0, wherein the notification of the change in status includes an identifier of a group ~~the plurality of end stations are designated~~ defined by a user to include the end station.

15. (Currently Amended) A system, comprising:

a plurality of end stations;

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the first network device and the network core; and

at least a second network device configured to receive, from the first network device, via an aggregate link between the first network device and the second network device, notification of the change in status from the first network device; ~~and, in response, disable~~

~~first~~ downstream communication links between first network interface devices on the plurality of end stations including a first downstream communication link that is disabled in response to the notification of the change in status, wherein the aggregate link continues to carry traffic for management of the system after the first downstream communication link is disabled; ~~thereby causing at least some of the plurality of end stations to switch to~~

~~second~~ additional downstream communications links between second network interface devices thereon and at least a third network device including a second downstream communications link that is established in response to the disabling of the first downstream communication link to provide an alternate path between at least some of the plurality of end stations and the network core that does not include the first network device, ~~wherein the aggregate link continues to carry traffic after disabling the first downstream communication link~~.

16. (Original) The system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface.

17. (Currently Amended) The system of claim 15, wherein the notification of the change in status includes an identifier of a group defined ~~the first network device is configured to send notification of the change in status to a plurality of designated network devices specified~~ by a user to include the at least some of the plurality of end stations.

18. (Currently Amended) The system of claim 15, wherein the notification of the change in status includes an identifier of a group and the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable ~~first~~ the downstream communication links between the second network device and a limited subset of the plurality of designated end stations that are in the group ~~specified by a user~~.

19. (Currently Amended) An aggregation device comprising:

a processor; and

a non-transitory computer readable medium containing instructions which, when executed by the processor, cause the aggregation device to perform operations comprising,

detecting a change in status of a first upstream communication link between the aggregation device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the aggregation device and the network core,

sending notification of the change in status, via an aggregate link between the aggregation device and a first network device, to the first network device in communication with an end station via a first downstream communication link,

disabling the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a second network device and the end station to establish an alternate path between the end station and the network core that does not include the aggregation device, and

maintaining the aggregate link to continue to carry traffic for management of a network after sending the notification.

20. (Currently Amended) The aggregation device of claim 19, wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network core; and

sending notification of the recovery in status to the first network device.

21-27. (Cancelled)

28. (Currently Amended) A network device comprising:

means for detecting a change in status of a first upstream communication link between the first network device and a network core, wherein the change in status of the first upstream communication link is a loss in connectivity between the network device and the network core;

means for sending notification of the change in status, via an aggregate link between the first network device and ~~another~~ a second network device, to the ~~another~~ second network device in communication with an end station via a downstream communication link ~~to cause the other network device to~~ ;

means for disabl[[e]]ing the downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station to establish an alternate path between the end station and the network core that does not include the first network device; and

means for maintaining the aggregate link to continue to carry traffic for management of the network after sending the notification.

29. (New) The method of claim 1, wherein the notification of the change in status includes a time stamp of action occurrence.

30. (New) The network switching system of claim 10, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

31. (New) The system of claim 15, wherein the notification of the change in status includes a time stamp of action occurrence.

32. (New) The aggregation device of claim 19, wherein the notification of the change in status includes a message counter for a number of messages sent for changes in status.

33. (New) The aggregation device of claim 19, wherein the notification of the change in status includes an identifier of a group and the first network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the first network device and a plurality of end stations that are in the group.

34. (New) The aggregation device of claim 19, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

35. (New) The network device of claim 28, wherein the notification of the change in status includes an identifier of a group defined by a user to include the end station.

REMARKS

This is intended as a full and complete response to the Final Office Action dated August 6, 2010, having a shortened statutory period for response set to expire on November 6, 2010. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-6, 8-21, and 28 are pending in the application prior to entry of this response. By way of this reply, Applicants are cancelling claim 21, amending claims 1, 5, 8, 9, 10, 13, 14, 15, 17, 18, 19, 20, and 28, and adding new claims 29-35. These amendments are supported by at least paragraphs [0027], [0030], [0033], [0035], and [0038] and Figures 3A, 3B, and 3C of the application, as originally filed. Applicants submit that the amendments to not introduce new matter.

Further, Applicants are not conceding in this application that those amended (or canceled) claims are not patentable over the art cited by the Examiner, as the present claim amendments and cancellations are only for facilitating expeditious prosecution of the claimed subject matter. Applicants respectfully reserve the right to pursue these (pre-amended or canceled claims) and other claims in one or more continuations and/or divisional patent applications.

Interview Summary

This amendment is submitted pursuant to the interview of November 3, 2010 between Examiner Wing Ma and Patent Agent Stephanie Winner. Stephanie Winner explained the invention and discussed the amendments made to claims 1, 10, 15, 19, and 28 with Examiner Wing Ma. In particular, the limitations of continuing to carry traffic only for management of the network on the aggregate link were discussed. Possible interpretations of this limitation considering the support in the specification were discussed. New claims 29-33 were also discussed. Stephanie Winner explained that the new claims are intended to clarify the claimed topology. Applicants respectfully request reconsideration and allowance of all claims in view of the following remarks.

Claim Rejections - 35 U.S.C. § 103

Claims 1-3, 5, 9-11, 13, 15, 19-20 and 28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saskio* (U.S. Publication 2004/0105390) in view of *Jain et al.* (U.S. Patent No. 6,330,229, hereinafter, "*Jain '229*").

Applicants respectfully traverse these rejections.

The Examiner bears the initial burden of establishing a prima facie case of obviousness. See MPEP § 2141. Establishing a prima facie case of obviousness begins with first resolving the factual inquiries of Graham v. John Deere Co. 383 U.S. 1 (1966). The factual inquiries are as follows:

(A) determining the scope and content of the prior art;
(B) ascertaining the differences between the claimed invention and the prior art;
(C) resolving the level of ordinary skill in the art; and
(D) considering any objective indicia of nonobviousness.

Once the Graham factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

As amended, claim 1 now recites the limitations of detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network, where the change in status of the first upstream communication link is a loss in connectivity between the first network device and the network and continuing to carry traffic only for management on the aggregate link after sending the notification of change in status to the second network device. Amended claim 1 also recites the limitations that an alternate path between the end station and the network core is established that does not include the first network device. No combination of the cited references teaches or suggests these limitations.

Saskio discloses a structure where a first network device has a single path to the network core and link-down situations are detected (see *Saskio* at paragraph [0026]). Nowhere does *Saskio* teach or suggest continuing to carry traffic for management on the aggregate link after sending the notification of change in status to the second network device, as now recited in amended claim 1.

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Saskio also fails to teach or suggest establishing an alternate path between the end station and the network core, as also now recited in amended claim 1.

Jain '229 discloses a structure having a redundant path between the first network device and the network core (see *Jain '229* at column 6, line 67- column 7, line 4 and Figure 1). The addresses learned on the failed root port are transferred to the redundant root port that provides the alternate path and the redundant root port begins forwarding frames immediately (see *Jain '229* at column 8, lines 28-33 and column 5, lines 27-32). *Jain '229* fails to teach or suggest an aggregate link that continues to carry traffic for management of a network. Instead *Jain '229* teaches that traffic is passed through the alternate path and is not passed through the failed link. Consequently, like *Saskio*, *Jain '229* fails to teach or suggest the limitations of continuing to carry traffic for management on the aggregate link after sending the notification of change in status to the second network device and establishing an alternate path between the end station and the network core, as now recited in amended claim 1. Therefore, *Jain '229* fails to cure the deficiencies of *Saskio* set forth above.

For at least these reasons, Applicants submit claim 1 and its dependents are allowable over *Saskio* and *Jain '229*. As amended, claims 10, 15, 19, and 28 recite similar limitations as amended claim 1 that are also not taught in *Saskio* and *Jain '229*. Accordingly, Applicants respectfully submit these claims, and claims dependent thereon, are also allowable and respectfully request withdrawal of this rejection.

Additionally, claims 5 and 13 are amended to recite the limitations that the notification of the change in status includes an identifier of a group and that a plurality of end stations is in the group. No combination of the cited references teaches or suggests these limitations. Therefore, amended claims 5 and 13 are allowable, independent of their dependence from allowable claims 1 and 10, respectively.

Claims 4, 6, 8, 12, 14, 16-18 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saskio* in view of *Jain* '229 and *Jain '072* (U.S. Publication 2002/0112072).

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Applicants respectfully traverse these rejections.

These claims depend, directly or indirectly, from claims 1, 10, 15, and 19, which Applicants submit are allowable for at least reasons discussed above. Further, Applicants respectfully submit that *Jain '072* fails to overcome the teachings of *Saskio* and *Jain '229*. The Examiner relies on *Jain '072* only for teaching specifications by a user. *Jain '072* fails to cure these deficiencies of *Saskio* and *Jain '229* set forth above. Accordingly, Applicants submit these claims are also allowable and respectfully request withdrawal of this rejection.

Additionally, claims 8, 14, and 17 are amended to recite the limitations that the notification of the change in status includes an identifier of a group defined by a user to include the end station. Claim 18 is amended to recite the limitations that the notification of the change in status includes an identifier of a group that includes a subset of the plurality of designated end stations. No combination of the cited references teaches or suggests these limitations. Therefore, these claims are allowable, independent of their dependence on allowable claims 1, 10, and 15.

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

New Claims

New claims 29 and 31 recite the limitations that the notification of the change in status includes a time stamp of action occurrence. New claims 30 and 32 recite the limitations that the notification of the change in status includes message counter for a number of message sent for changes in status. New claim 33 recites the limitations that the notification of the change in status includes an identifier of a group that includes a plurality of end stations that are in the group. New claims 34 and 35 recite the limitations that the notification of the change in status includes an identifier of a group defined by a user to include the end station. These new claims are supported by at least paragraphs [0035] and [0038] of the application, as originally filed. None of the cited references teaches or suggests these limitations. Therefore, these new claims are in condition for allowance independent of their dependency on the allowable independent claims.

Conclusion

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully requests that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

/Gero G. MCCLELLAN, Reg. #44227/

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Electronic Patent Application Fee Transmittal	
Application Number:	11398519
Filing Date:	05-Apr-2006
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Filer:	Gero G. McClellan/Kristen Neil
Attorney Docket Number:	CISC/12792
Filed as Large Entity	

Utility under 35 USC 111(a) Filing Fees

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

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**810**

Electronic Acknowledgement Receipt	
EFS ID:	8783914
Application Number:	11398519
International Application Number:	
Confirmation Number:	7705
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Customer Number:	62147
Filer:	Gero G. McClellan/Kristen Neil
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CISC/12792
Receipt Date:	05-NOV-2010
Filing Date:	05-APR-2006
Time Stamp:	18:52:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$810
RAM confirmation Number	4983
Deposit Account	200782
Authorized User	MCCLELLAN,GERO G.
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 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		SEQ12792_RCE.pdf	667717 c13e0869fba935317e936ae31e6c4020165a1630	yes	15
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Request for Continued Examination (RCE)		1	2	
	Amendment/Req. Reconsideration-After Non-Final Reject		3	15	
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	30331 d6962a01b4b7360e09051eaa1a79861c2850293	no	2
Warnings:					
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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

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

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

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/398,519	04/05/2006	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY ☐ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	11/05/2010	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 27	Minus	** 28	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 5	Minus	*** 7	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DIANE WILLIAMS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tatinmkai	CISC/12792	7705

62147 7590 08/06/2010

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HOUSTON, TX 77056-6582

EXAMINER
MA, WING

ART UNIT	PAPER NUMBER
2456	

MAIL DATE	DELIVERY MODE
08/06/2010	PAPER

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

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

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	11/398,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	Wing Ma	2456	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-21 and 28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-21 and 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Quicker Connections - Exhibit 2011
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DETAILED ACTION

1. Claims 1-6, 8-21, and 28 are subject to examination. Claims 7 and 22-27 have been previously cancelled.

Claim Construction

2. The claims, and only the claims, form the metes and bounds of the invention. Limitations appearing in the specification, but not recited in the claims, are not read into the claims. *In re* Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). (*See* MPEP p 2100-8, c 2, l 45-48; p 2100-9, c 1, l 1-4.) The examiner has full latitude to interpret each claim in the broadest reasonable sense; and the examiner will reference prior art using terminology familiar to one of ordinary skill in the art.

Claim Objections

3. The previous Office action's objection regarding claim 7 has been withdrawn in view of applicant's remarks (06/11/10 Remarks, p.7).

Claim Rejections - 35 USC § 101

4. The previous Office action's 35 U.S.C. § 101 rejection regarding claim 19 has been withdrawn in view of applicant's amendments.

Claim Rejections - 35 USC § 112

5. The previous Office action's 35 U.S.C. § 112 2nd rejections have been withdrawn in view of applicant's amendments.

Response to Arguments

6. Applicant's arguments/remarks, filed 06/11/10, have been thoroughly considered, and the examiner respectfully disagrees with applicant's characterization of the prior art. Applicant's arguments/remarks are unconvincing for the following reasons.

(a) *Applicant's Remark:*

"*Saskio*, in paragraph [0027], contemplates failure of the link between switches SW7 and SW8" (06/11/10 Remarks, p. 9).

(a) *Examiner's Response:*

Saskio, in paragraphs [0026]-[0027], contemplates failures of the links in between 2nd stage switches (e.g., SW7 and SW8) and routers (e.g., R1 and R2). Saskio does not explicitly disclose a link in between switches SW7 and SW8 (*see* Fig. 1).

(b) *Applicant's Remark:*

"Still further, Jain '229, in column 7, lines 16-20, states that when the root port link fails, end stations accessible through bridges B1, B3, B4 and B6 are no longer accessible through the root port 13 of the bridge 12" (06/11/10 Remarks, pp. 9-10).

(b) *Examiner's Response:*

First, Jain '229 (in column 7, lines 16-20) recites "bridge B2" not bridge 12.

Second, of course the end stations accessible through bridges B1, B3, B4 and B6 are no longer accessible through the root port 13 of the bridge 12. Jain '229 (*see* col. 7, ll. 1-31) discloses the link between ports 11 and port 12 as failing; and (as clearly illustrated by Fig. 1) root port 13 of bridge B2 uses the links between ports 13 and 14, and ports 11 and 12 to access the B1, B3, B4 and B6 bridges.

(c) *Applicant's Argument:*

"However, the Office points to figure 1 (of Jain '229) to assert that link between ports 15 (bridge B3) and 16 (bridge B1) is intact. The Applicants respectfully submit that just because the physical link is shown to be intact does not mean it is capable of carrying traffic. The question here is not if Bridge B1 and B3 may communicate with each other, the question is whether the end stations can continue using the aggregated link" (06/11/10 Remarks, p. 10).

(c) *Examiner's Response:*

First, applicant's "question" is contrary to the teachings of applicant's own specification (*see* Original Specification, ¶¶ 0028, 0031, and FIG. 3A-3D, note the change in L_p and L_s).

Second, Jain '229 (*see* col. 7, ll. 1-31) clearly states, "[t]he end stations accessible through bridges B1, B3, B4 and B6 are no longer accessible through the root port 13 of bridge B2. **Rather, these end stations are accessible through designated port 27**" (emphasis added). This means that the link between ports 15 (bridge B3) and 16 (bridge B1) is still accessible.

(d) *Applicant's Argument:*

"Jain '229 specifically mentions that the end stations are not accessible through this link, hence, logically the link is unavailable for carrying the traffic (at least until the ports are reassigned)" (06/11/10 Remarks, p. 10).

(d) *Examiner's Response:*

Jain '229 never specifically mentions the end station as not accessible through the link between ports 15 (bridge B3) and 16 (bridge B1). Jain '229 specifically mentions

the end stations as not accessible through "root port 13 of bridge B2," but rather port 27 of bridge B2 (*see also* **(c)** *Examiner's Response)*.

(e) *Applicant's Argument:*

Jain '229 does not teach an "aggregate link continues to carry traffic after disabling the first downstream communication link" or "maintaining the aggregate link to continue to carry traffic after sending the notification" (06/11/10 Remarks, p. 10).

(e) *Examiner's Response:*

Jain '229 teaches an aggregate link (col. 7, ll. 1-31, e.g., link between port 15 and 16; *see also* applicant's definition of "aggregate link," 06/11/10 Remarks, p. 9) and "maintaining the aggregate link to continue to carry traffic after sending a notification (col. 4, ll. 28-46)."

The combination of Saskio and Jain '229 teach continuing to carry traffic after disabling a first downstream communication link. Saskio (¶¶ [0026]-[0028]) teaches disabling a first downstream communication link when receiving an upstream path failure notification. Jain '229 (col. 7, ll. 1-31) teaches an aggregate link continuing to carry traffic after an upstream path failure.

(f) *Applicant's Argument:*

"The Applicants respectfully submit that Saskio teaches away from using the 'failed' link altogether.

As stated in Saskio paragraphs [0027] and [0030], the host moves all LAN traffic into redundant LAN port, hence, a person skilled in the art would not be motivated to

continue using the failed link because doing so would be contrary to the specific teachings of Saskio" (06/11/10 Remarks, p. 10).

(f) *Examiner's Response:*

First, neither applicant's claims, nor even applicant's own claim analysis (06/11/10 Remarks, p. 9), disclose using a "failed" link.

Second, the applicant has failed to provide any tenable rationale for why the teaching of a "host mov[ing] all LAN traffic into redundant LAN port if the currently used LAN port is changed into a link-down state (emphasis added, see Saskio ¶ 0030)," from an example embodiment (*see* Saskio, ¶¶ 0022, 0023, 0025, 0038) teaches away from the applied concepts of Jain '229.

Third, applicant's argument is contrary to the teachings of applicant's own specification (*see* Original Specification, ¶¶ 0028, 0031, and FIG. 3A-3D, note the change in L_p and L_s).

(g) *Applicant's Argument:*

"Besides, if there is a link failure between switches SW7 and SW8 (i.e., the aggregate link), as contemplated by Saskio, adopting Jain '229 teachings (as interpreted by the Office) would result in a total communication failure" (06/11/10 Remarks, p. 10).

(g) *Examiner's Response:*

First, Saskio does not explicitly contemplate a link between switches SW7 and SW8.

Second, the applicant is apparently mapping this link to the aggregate link. The previous Office action does contemplate modifying Saskio in view of Jain '229 (see previous Office action, p. 8-9), which could result in a connection between SW7 and SW8. In the previous Office action, the examiner applied Jain '229's concept of automatically transitioning to another upstream port after detecting a link failure to Saskio. Obviously, if this concept was applied specifically to the switches of SW7 and SW8 of Saskio, it would mean implementing a failover connection between SW7 and SW8. But the examiner never asserts that such a connection would map to the aggregate link.

Third, the previous Office action merely applied the teachings (i.e., concepts) of Jain '229 onto Saskio. The examiner kindly reminds applicant that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *See In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The combination of Saskio and Jain '229 is not a direct, literal application of the references' disclosures.

Fourth, the applicant has failed to provide any tenable rationale for why the application of the concepts of Jain '229 to Saskio "would result in a total communication failure."

(h) *Applicant's Argument:*

"Both of these prior arts do so to achieve high availability and neither reference suggests achieving such high availability through the continued use of a failed link. To the extent that the Examiner suggests the proposed modification achieves even higher availability, the Examiner has not articulated any support for this conclusion, rendering the analysis merely conclusory. Hence, a person of ordinary skills would not be motivated to attempt using the approach as suggested by the Office" (06/11/10 Remarks, p. 11).

(h) *Examiner's Response:*

First, neither applicant's claims, nor even applicant's own claim analysis (06/11/10 Remarks, p. 9), disclose using a "failed" link.

Second, the Examiner's proposed modification would enhance the availability of Saskio's 2nd stage switch devices. In the previous Office action (*see* previous Office action, p. 8-9), the examiner applied Jain '229's concept of automatically transitioning to another upstream port after detecting a link failure to Saskio. Obviously, if this concept was applied specifically to the 2nd stage switch devices of Saskio (i.e., SW7 and SW8), it would mean implementing a failover connection between SW7 and SW8, thereby enhancing the availability of both SW7 and SW8.

(i) *Applicant's Argument:*

"A person skilled in the art would construe this recital as being a pre-configuration step in which a user or administrator designates the receivers of notifications. There is no logical reasoning behind construing the term "user" to be any network entity" (06/11/10 Remarks, p. 11).

(i) *Examiner's Response:*

The Examiner respectfully disagrees, and references the definitions supplied by technical dictionaries in order to support the Examiner's interpretation.

> user – A generic term referring to any person, organization, hardware, or program that operates, manipulates, or employs a computer or communications system to accomplish something (Hargrave's Communications Dictionary, 2001).
>
> user - A person, organization, or other entity (including a computer or computer system), that employs the services provided by a telecommunication system, or by an information processing system, for transfer of information (ATIS Telecom Glossary, 2006).

(j) *Applicant's Argument:*

"*Jain '072* teaches (see para [0070]) '*Thus, when the router becomes aware of a fault, it sends a notification via a multi-cast tree that specifies paths to all the other nodes in the network*.' Hence, *Jain '072* teaches sending notifications to all nodes and not to the selected designated nodes, as recited in the claims. Jain '072 does mention (in the same paragraph) pre-configured multi-cast trees to send notifications, however, these pre-configured multi-cast trees are being used merely to find paths to all nodes so that notifications can be sent to all nodes in the network. Hence, the term "pre-configured multi-cast trees" has a different meaning than the term "designated nodes" to which notifications are sent" (06/11/10 Remarks, pp. 11-12).

(j) *Examiner's Response:*

First, a "specified" node is a "designated" node. This is evidenced by the dictionary definition of the term "designate":

> designate - To indicate or specify; point out (The American Heritage® Dictionary of the English Language, 2007).

Second, *Jain '072* teaches (see para [0070]) sending notifications to nodes specified by a pre-configured multi-cast tree. Hence, the nodes are designated.

Obviously, the nodes must be specified by some entity, i.e., user (*see also* **(i)** *Examiner's Response* for interpretation of the term "user").

Claim Rejections - 35 USC § 103

7. 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.

8. Claims 1-3, 5, 9-11, 13, 15, 19-20 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio (hereinafter "Saskio") (US 2004/0105390 A1) in view of Jain '229 et al. (hereinafter "Jain '229") (US 6,330,229 B1).

Referring to claim 1,

Saskio teaches a method for managing a network path between at least one end station and a network, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network (par. [0028] and FIG. 1 teach a first network device, LAN switch SW7, and an upstream communication link, LSW7. par. [0029] teaches the upstream communication is connected to router R1, which is connected to a network. pars. [0034]-[0035] teach that each device contains an Ethernet controller, which monitors the status of active links.); and

sending, by the first network device, via an aggregate link (i.e., LSW1) between the first network device and a second network device, notification of the change in status to the second network device in communication with the end station via a first

downstream communication link (par. [0028] and FIG. 1 teach the first network device (i.e., SW7) sends a notification of the change in status (i.e., link-down state) to a second network device (i.e., SW1). SW1 is in communication with an end station (i.e., Host 1) via a first downstream communication link (i.e., $L1_1$).),

the notification designed to cause the second network device to disable the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third network device and the end station. (par. [0028] teaches the second network device (i.e., SW1), sends the link-down state to Host 1. par. [0026] teaches when a Host device receives a path failure notification, it switches to a second downstream link, L12. FIG. 1 teaches L12 is connected to a third switch (i.e., SW2).)

Saskio is silent as to continuing to carry traffic on the aggregate link after sending the link-down notification.

Jain '229 teaches, *inter alia*, the concepts of managing network paths between multiple layers of access devices (FIG. 1 and col. 6, lines 9-28).

Jain '229 further teaches the concept of continuing to carry traffic on an aggregate link (*see* applicant's definition of "aggregate link," 06/11/10 Remarks, p. 9) after a first network device sends notification of a change in status to at least one secondary network device. (FIG. 1; col. 4, lines 29-46; and col. 6, lines 65-67 to col. 7, lines 1-35 teach bridge B1 continuing to carry traffic on an aggregate link, e.g., the connection between port 15 and port 16, after sending notification of a change in status of the connection between port 11 and port 12.)

One of ordinary skill in the art could read the conceptual teachings of Jain '229 and use these teachings to provide the high availability benefits indicated by Jain '229 (*see* Jain '229, col. 4, lines 66-67 to col. 5, lines 1-9) to Saskio. By combining the teachings of Jain '229 with Saskio, Saskio's SW7 could be further configured to automatically transition to another upstream port after detecting a link failure, and therefore maintain the connectivity of its downstream links. Of course, implementing these teachings also requires implementing redundant upstream connections, for example, a failover upstream connection with SW8.

Furthermore, the application of Jain '229's concepts to Saskio uses known methods (e.g., additional connections and programming between access devices), and yields nothing more than predictable results.

Referring to claim 2,

Saskio and Jain '229 teach the method of claim 1. Jain '229 teaches wherein one or more intermediate network devices, between the first and second network devices (FIG. 1 and col. 6, lines 9-28 teach intermediate bridges), receives the notification of the change in status from the first network device and forwards the notification to the second network device. (col. 4, lines 48-57 teach propagating the notification of the change in status throughout the descendents of the first network device.)

Referring to claim 3,

Saskio and Jain '229 teach the method of claim 1. Saskio teaches wherein sending notification, by the first network device, of the change in status to the second network device comprises sending a message from the first network device to one or

more network devices in communication with the first network device. (par. [0028] teaches propagation of the link-down state to Host devices, which are network devices in communication with the first network device (i.e., SW7).)

Referring to claim 5,

Saskio and Jain '229 teach the method of claim 1. Saskio teaches wherein the second network device is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second network device and a plurality of end stations. (par. [0028] teaches if SW1 gets the link-down state, it sets the downstream links, $L1_1$ and $L2_1$, to the link-down state as well. $L1_1$ and $L2_1$ connect SW1 to the Host.)

Referring to claim 9,

Saskio and Jain '229 teach the method of claim 1. Saskio teaches wherein the change in communication status comprises a loss in connectivity between the first network device and the network and the method further comprises:

detecting, by the first network device, recovery of connectivity between the first network device and the network (par. [0031] teaches the recovery detection's process is the same as the failure detection's; therefore the monitoring mechanism taught by pars. [0034] and [0035] also applies to link-up situations); and

sending, by the first network device, notification of the recovery in status to the second network device (If the steps recited by par. [0028] are modified to reflect the link-up situation, the first network device, SW7, would propagate notification of the recovery, link-up state, to the secondary network device, SW1.); and

in response to receiving the notification of the recovery in status, enabling by the second network device, the first downstream communication link. (If the steps recited by par. [0028] are modified to reflect the link-up situation, the second network device, SW1, would propagate the link-up state to the Host 1, thereby enabling the first downstream communication link, $L1_1$.)

Referring to claim 10,

Claim 10 is a claim to a network switching system substantially similar to the method of claim 1. Therefore claim 10 is rejected for the reasons set forth for claim 1.

Furthermore, the combination of Saskio and Jain '229 teaches the aggregate link continues to carry traffic after disabling the first downstream communication link. As illustrated by the rejection for claim 1, Saskio (pars [0026]-[0028]) teaches disabling a first downstream communication link when receiving an upstream path failure notification. And Jain '229 (col. 7, ll. 1-31) teaches an aggregate link continuing to carry traffic after an upstream path failure.

Referring to claim 11,

Claim 11 is a claim to a network switching system implementing the method of claim 2. Therefore claim 11 is rejected for the reasons set forth for claim 2.

Referring to claim 13,

Claim 13 is a claim to a network switching system implementing the method of claim 5. Therefore claim 13 is rejected for the reasons set forth for claim 5.

Referring to claim 15,

Claim 15 is a claim to a system substantially similar to the system of claim 10. Saskio teaches a plurality of end stations (FIG. 1 and para. [0028]). The remaining claim limitations are rejected for the reasons set forth for claim 10.

Referring to claim 19,

Claim 19 is a claim to an aggregation device implementing the method of claim 1. Therefore claim 19 is rejected for the reasons set forth for claim 1; wherein the claimed aggregation device maps to SW7 (of Saskio), and the claimed network device maps to SW1 (of Saskio).

Referring to claim 20,

Saskio and Jain '229 teach the aggregation device of claim 19. Saskio further teaches wherein the operations comprise:

detecting recovery of connectivity between the aggregation device and the network (par. [0031] teaches the recovery detection's process is the same as the failure detection's; therefore the monitoring mechanism taught by pars. [0034] and [0035] also applies to link-up situations); and

sending notification of the recovery in status to the network device. (If the steps recited by par. [0028] are modified to reflect the link-up situation, the aggregation device, SW7, would propagate notification of the recovery, link-up state, to the network device, SW1.)

Referring to claim 28,

Claim 28 is a claim to a network device "means for" implementing the method of claim 1. Therefore claim 28 is rejected for the reasons set forth for claim 1.

9. Claims 4, 6, 8, 12, 14, 16-18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio in view of Jain '229, and Jain '072 (hereinafter "Jain '072") (US 2002/0112072 A1).

Referring to claim 4,

Saskio and Jain '229 teach the method of claim 1.

Saskio and Jain '229 are silent as to specifications by a user.

Jain '072 teaches wherein sending a message from a first network device to one or more network devices in communication with the first network device comprises sending a message to one or more designated network devices specified by a user. (*Note:* The examiner is construing the term "user" to be a network entity. par. [0070] teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. *See also* **(i)** *Examiner's Response and* **(j)** *Examiner's Response.*)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 6,

Saskio and Jain '229 teach the method of claim 1.

Saskio and Jain '229 are silent as to the second network device is configured to forward a message to one or more network designated devices specified by a user.

Jain '072 teaches wherein a second network device is configured to forward a message containing the notification to one or more designated network devices specified by a user. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. *See also* **(i)** *Examiner's Response and* **(j)** *Examiner's Response.*)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 8,

Saskio and Jain '229 teach the method of claim 1.

Saskio and Jain '229 are silent as to end stations are specified by a user.

Jain '072 teaches the end stations are specified by a user. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. FIG. 1 and par. [0028] teach end stations are connected to the intermediate network devices. *See also* **(i)** *Examiner's Response and* **(j)** *Examiner's Response.*)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 12,

Claim 12 is a claim to a network switching system implementing the method of claim 4. Therefore claim 12 is rejected for the reasons set forth for claim 4.

Referring to claim 14,

Claim 14 is a claim to a network switching system implementing the method of claim 8. Therefore claim 14 is rejected for the reasons set forth for claim 8.

Referring to claim 16,

Saskio and Jain '229 teach the system of claim 15.

Saskio and Jain '229 are silent as to an end station without a second network interface.

Jain '072 teaches external equipment (e.g., end stations) without a second network interface coupled to edge equipment via a network link, such as CE 118 (FIG. 1 and para. [0028]).

To apply the concept of including a single network interface device of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (e.g., using a single interface device), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by including end stations with single interfaces, the system becomes more compatible with a wider variety of devices.

Referring to claim 17,

Claim 17 is a claim to a system implementing the method of claim 4. Therefore claim 17 is rejected for the reasons set forth for claim 4.

Referring to claim 18,

Saskio and Jain '229 teach the system of claim 15.

Saskio and Jain '229 also teach the second network device configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second network device and a limited subset of the plurality of end stations (*see rejection for claim 5*).

Saskio and Jain '229 are silent as to the limited subset of the plurality of end stations are specified by a user.

Jain '072 teaches the idea of a user specifying a subset of designated end stations for a notification. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. FIG. 1 and par. [0028] teach end stations are connected to the intermediate network devices. *See also* **(i)** *Examiner's Response and* **(j)** *Examiner's Response.*)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 21,

Saskio and Jain '229 teach the aggregation device of claim 19.

Saskio and Jain '229 are silent as to obtaining a list of designated network devices specified by a user.

Jain '072 teaches each node contains a preconfigured multi-cast tree (which reads on a list of designated network devices); and sending notification of a change in status to the designated network devices specified by the user. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. FIG. 1 and par. [0028] teach end stations are connected to the intermediate network devices. *See also* **(i)** *Examiner's Response and* **(j)** *Examiner's Response.*)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases), and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Examiner's Note

10. Prior art references must be considered in their entireties. *See W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Applicant is advised that the specified citations of the relied upon prior art, are only representative of the teachings of the prior art, and that any other supportive sections within the entirety of the reference (including any figures,

incorporation by references, claims, and/or priority documents) is implied as being applied to teach the scope of the claims.

11. Applicant may not introduce any new matter to the claims or to the specification. For any subsequent response that contains new/amended claims, Applicant is required to cite its corresponding support in the specification. *See* MPEP chapter 2163.03 section (I), chapter 2163.04 section (I), and chapter 2163.06.

Conclusion

12. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wing Ma whose telephone number is (571)270-5656. The examiner can normally be reached on Monday thru Friday, during the hours of 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing Ma/
Examiner, Art Unit 2456

/Rupal D. Dharia/
Supervisory Patent Examiner, Art Unit 2400

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	Examiner Wing Ma	Art Unit 2456	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-			
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
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	J	US-			
	K	US-			
	L	US-			
	M	US-			

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NON-PATENT DOCUMENTS

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	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

SEARCHED			
Class	Subclass	Date	Examiner
709	238, 239	10/2008	WM
370	241, 244, 245, 248	10/2008	WM

SEARCH NOTES		
Search Notes	Date	Examiner
Inventors' names searches on EAST	10/2008	WM
text search only on EAST - see search history printout	10/2008	WM
updated EAST search - see printout	07/2009	WM
updated EAST search - see printout	02/2010	WM
updated EAST search - see printout	08/2010	WM

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	10/15/2008	07/10/2009	02/23/2010	07/30/2010					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	✓					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	-	-	-					
	8	✓	✓	✓	✓					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13	✓	✓	✓	✓					
	14	✓	✓	✓	✓					
	15	✓	✓	✓	✓					
	16	✓	✓	✓	✓					
	17	✓	✓	✓	✓					
	18	✓	✓	✓	✓					
	19	✓	✓	✓	✓					
	20	✓	✓	✓	✓					
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	22	✓	✓	-	-					
	23	✓	✓	-	-					
	24	✓	✓	-	-					
	25	✓	✓	-	-					
	26	✓	✓	-	-					
	27	✓	✓	-	-					
	28	✓	✓	✓	✓					

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L6	12640	(switch$4 or failover or (fail near over)) and (path or route) and (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L7	463	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L10	4928	709/238.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L11	1136	709/238.ccls. and notification	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L12	95	709/238.ccls. and notification and (failover or (fail near over))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L13	600	709/238.ccls. and notification and ((failover or (fail near over)) or switch)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L14	1286	709/239.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L28	463	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37

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L40	6	(network near administrator) same set same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L41	64	(network near administrator) same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L42	103	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L43	21	link same failure same manually same configure	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L48	103	(failure near over) and administrator and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L49	52	link same failure same administrator same list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L50	200	link same failure same administrator same (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L68	1429	(link same failure same list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L69	463	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L70	325	L69 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37

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L71	1770	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L72	994	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table) and ("370"/$$.ccls. or "709"/$$.ccls.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L73	2463	370/241.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L74	645	370/244.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L75	384	370/245.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L76	1081	370/248.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L86	463	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L87	1526	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37

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L89	1221	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream)) and (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L90	18	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L91	61	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L92	14	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L94	80	(failure or change or update or error or disconnect$5) same (aggregate adj5 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37

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L95	105	(failure or change or update or error or disconnect$5) same (aggregate near3 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L98	258	(Send$4 or transmit $4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near25 (aggregat$5 near5 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up? link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L99	216	(Send$4 or transmit $4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near20 (aggregat$5 near3 (link or path or stream or flow)) near20 (change or disconnect or failure or fail or update or error) near20 ((link or stream or path or flow) or (uplink or upstream) or (up? link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37

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L100	205	(Send$4 or transmit $4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up? link or up?stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L107	173	(Send$4 or transmit $4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same ((link or stream or path or flow) or (uplink or upstream) or (up? link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L114	83	(Send$4 or transmit $4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or error) same ((uplink or upstream) or (up? link or up?stream) or ((link or stream or path or flow)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37

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		near3 up))				
L120	173	(Send$4 or transmit $4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat $5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L132	12640	(switch$4 or failover or (fail near over)) and (path or route) and (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L133	463	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L136	4928	709/238.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L137	1136	709/238.ccls. and notification	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L139	600	709/238.ccls. and notification and ((failover or (fail near over)) or switch)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L154	463	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L168	103	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37

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L174	103	(failure near over) and administrator and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L175	52	link same failure same administrator same list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L194	1429	(link same failure same list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L195	463	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L197	1770	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L198	994	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table) and ("370"/$$.ccls. or "709"/$$.ccls.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37
L236	173	(Send$4 or transmit $4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat $5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/08/03 14:37

EAST Search History (Interference)

<This search history is empty>

8/ 3/ 2010 2:47:20 PM
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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system or via facsimile in accordance with § 1.6(a)(4).

Dated: June 11, 2010 Signature: /Joseph Jung/ (Joseph Jung)

Docket No.: SEQ12792 (1654.024762) (PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Tirumalai et al.	§	Confirmation No.: 7705
	§	
	§	Group Art Unit: 2456
Serial No.: 11/398,519	§	
	§	Examiner: W. Ma
Filed: April 5, 2006	§	
	§	
For: SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES	§	
	§	
	§	
	§	

RESPONSE TO OFFICE ACTION DATED MARCH 11, 2010

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

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action dated March 11, 2010, please amend the above-identified U.S. patent application as follows.

The Commissioner is hereby authorized to charge underpayments or credit overpayments to counsel's Deposit Account No. 20-0782/ SEQ12792 (1654.024762)/GGM.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 7 of this paper.

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AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for managing a network path between at least one end station and a network, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network;

sending, by the first network device, via an aggregate link between the first network device and a second network device, notification of the change in status to the second network device in communication with the end station via a first downstream communication link, the notification designed to cause the second network device to disable the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third ~~switch~~ network device and the end station; and

continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device.

2. (Original) The method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

3. (Original) The method of claim 1, wherein sending notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device.

4. (Currently Amended) The method of claim 1, wherein sending a message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more designated network devices specified by a user.

5. (Currently Amended) The method of claim 1, wherein the second network device ~~switch~~ is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second network device ~~switch~~ and a plurality of end stations.

6. (Currently Amended) The method of claim 1, wherein the second network device ~~switch~~ is configured to forward a message containing the notification to one or more designated network devices specified by a user.

7. (Cancelled)

8. (Currently Amended) The method of claim 1, wherein the plurality of end stations are ~~specified~~ designated by a user.

9. (Currently Amended) The method of claim 1, wherein the change in communication status comprises a loss in connectivity between the first network device and the network and the method further comprises:

detecting, by the first network device, recovery of connectivity between the first network device and the network; and

sending, by the first network device, notification of the recovery in status to the second network device; and

in response to receiving the notification of the recovery in status, enabling by the second network device ~~switch~~, the first downstream communication link.

10. (Currently Amended) A network switching system, comprising:

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core; and

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link between the first network device and the second network device and, in response, disable a first downstream

communication link between the second network device and an end station, wherein the aggregate link continues to carry traffic after disabling the first downstream communication link.

11. (Original) The system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device.

12. (Currently Amended) The system of claim 10, wherein the first network device is configured to send notification of the change in status to a plurality of designated network devices specified by a user.

13. (Currently Amended) The system of claim 10, wherein the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second network device ~~switch~~ and a plurality of end stations.

14. (Currently Amended) The system of claim 13, wherein the plurality of end stations are ~~specified~~ designated by a user.

15. (Currently Amended) A system, comprising:

a plurality of end stations;

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core; and

at least a second network device configured to receive, from the first network device, via an aggregate link between the first network device and the second network device, notification of the change in status from the first network device and, in response, disable first downstream communication links between first network interface devices on the plurality of end stations, thereby causing at least some of the plurality of end stations to switch to second downstream

communications links between second network interface devices thereon and at least a third network device, wherein the aggregate link continues to carry traffic after disabling the first downstream communication link.

16. (Original) The system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface.

17. (Currently Amended) The system of claim 15, wherein the first network device is configured to send notification of the change in status to a plurality of designated network devices specified by a user.

18. (Currently Amended) The system of claim 15, wherein the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second network device ~~switch~~ and a limited subset of the plurality of designated end stations specified by a user.

19. (Currently Amended) An aggregation device comprising:

a processor; and

a non-transitory computer readable medium containing instructions which, when executed by the processor, cause the aggregation device to perform operations comprising,

detecting a change in status of a first upstream communication link between the aggregation device and a network,

sending notification of the change in status, via an aggregate link between the aggregation device and a network device, to [[a]] the network device in communication with an end station via a first downstream communication link, and

maintaining the aggregate link to continue to carry traffic after sending the notification.

20. (Original) The aggregation device of claim 19, wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network; and

sending notification of the recovery in status to the network device.

21. (Currently Amended) The aggregation device of claim 19, wherein the operations comprise:

obtaining a list of designated network devices specified by a user; and

sending notification of the change in status to the designated network devices specified by the user.

22-27. (Cancelled)

28. (Currently Amended) A network device comprising:

means for detecting a change in status of a first upstream communication link between the network device and a network;

means for sending notification of the change in status, via an aggregate link between the network device and another network device, to the another network device in communication with an end station via a downstream communication link to cause the other network device to disable the downstream communication link; and

means for maintaining the aggregate link to continue to carry traffic after sending the notification.

REMARKS

This is intended as a full and complete response to the Office Action dated March 11, 2010, having a shortened statutory period for response set to expire on June 11, 2010. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-6, 8-21 and 28 are pending in the application. Claims 1-6, 8-21 and 28 remain pending following entry of this response. Claims 4-6, 8-9, 12-14, 17-19 and 21 have been amended. Applicants submit that the amendments and new claims do not introduce new matter.

Further, Applicants are not conceding in this application that those amended (or canceled) claims are not patentable over the art cited by the Examiner, as the present claim amendments and cancellations are only for facilitating expeditious prosecution of the claimed subject matter. Applicants respectfully reserve the right to pursue these (pre-amended or canceled claims) and other claims in one or more continuations and/or divisional patent applications.

Statement of Substance of Interview

On June 2, 2010, a telephonic interview was held between Rajeev Madnawat (attorney) and Examiner Wing Ma. The parties discussed the cited references including *Saskio, Jain '229 and Jain '072*. Claim 1was discussed.

During the interview, Applicants provided an overview of *Saskio, Jain '229 and Jain '072* vis-à-vis the subject matter of claims. No agreement could be reached at the time of the interview, but the Examiner agreed that the proposed amendments discussed would clarify the claimed subject matter.

Claim Objections

Claim 7 is objected to because of informalities. Claim 7 was added inadvertently after expressly cancelling it. Claim 7 has now been canceled. The Office is respectfully requested to withdraw this objection.

Claim Rejections - 35 U.S.C. § 101

Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 19 has been amended to expressly recite a non-transitory matter. Therefore, the Office is respectfully requested to withdraw this rejection.

Claim Rejections - 35 U.S.C. § 112

Claims 5, 6, 9, 13, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5, 6, 9, 13, and 18 have been amended to overcome this rejection. Therefore, the Office is respectfully requested to withdraw this rejection.

Claim Rejections - 35 U.S.C. § 103

Claims 1-3, 5, 9-11, 13, 15, 19-20 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over *Saskio* (hereinafter "*Saskio*") (US 2004/0105390 A1) in view of *Jain '229 et al.* (hereinafter "*Jain '229*") (US 6,330,229 B1).

Claims 4, 6, 8, 12, 14, 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Saskio* in view of *Jain '229* and *Jain '072* (hereinafter "*Jain '072*") (US 2002/0112072 A1).

The Office bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2141. Establishing a *prima facie* case of obviousness begins with first resolving the factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The factual inquiries are as follows:

(A) determining the scope and content of the prior art;

(B) ascertaining the differences between the claimed invention and the prior art;

(C) resolving the level of ordinary skill in the art; and

(D) considering any objective indicia of nonobviousness.

Once the *Graham* factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

Respectfully, Applicants submit that the Examiner has not properly characterized the teachings of the references and/or the claims at issue. Accordingly, a *prima facie* case of obviousness has not been established.

The Examiner takes the position that *Jain* '229 teaches the claim recital "*continuing to carry traffic on the aggregate link after sending the link-down notification.*"

Applicants respectfully traverse this rejection.

Applicants' claims properly define an aggregate link, which connects the first network device with the second network device, wherein the second network device is in communication with the end station. Claims also recite "continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device." This claim recited in depicted, *inter alia*, in Applicants' Figure 1, which shows link L_z between SW1 and SW2. Further as recited in the claims, the aggregate link (L_x) is a communication link between SW1 and SW3. Accordingly, when the link between SW1 and Network Core 120 fails, link L_x continued to be used for carrying traffic after sending the link-down notifications. However, as explained below, the cited prior art switches over immediately to another link as soon as an upstream link failure is detected. Hence, the cited prior art does not teach "*continuing to carry traffic on the aggregate link after sending the link-down notification.*"

Saskio, in paragraph [0027], contemplates failure of the link between switches SW7 and SW8. Further, in paragraph [0030], *Saskio* notes that "*the host moves all LAN traffic into the redundant LAN port if the currently used LAN port is changed into a link-down state.*"

Further, Jain '229, in column 4, lines 58-65, clearly states that an alternate port role is immediately changed to a root port role when the root port link fails. Still further, Jain '229, in column 7, lines 16-20, states that when the root port link fails, end stations accessible through

bridges B1, B3, B4 and B6 are no longer accessible through the root port 13 of the bridge 12. However, the Office points to figure 1 (of Jain '229) to assert that link between ports 15 (bridge B3) and 16 (bridge B1) is intact. The Applicants respectfully submit that just because the physical link is shown to be intact does not mean it is capable of carrying traffic. The question here is not if Bridge B1 and B3 may communicate with each other, the question is whether the end stations can continue using the aggregated link. *Jain '229* specifically mentions that the end stations are not accessible through this link, hence, logically the link is unavailable for carrying the traffic (at least until the ports are reassigned). Therefore, *Jain '229* does not teach "*continuing to carry traffic on the aggregate link after sending the link-down notification.*" Nor does *Jain '229* teach an "aggregate link continues to carry traffic after disabling the first downstream communication link" or "maintaining the aggregate link to continue to carry traffic after sending the notification".

Further, a person skilled in the art would not be motivated to use *Jain '229* teachings to modify the *Saskio* teachings, as suggested by the Office. The Applicants respectfully submit that *Saskio* teaches away from using the "failed" link altogether. As stated in *Saskio* paragraphs [0027] and [0030], the host moves all LAN traffic into redundant LAN port, hence, a person skilled in the art would not be motivated to continue using the failed link because doing so would be contrary to the specific teachings of *Saskio.* Besides, if there is a link failure between switches SW7 and SW8 (i.e., the aggregate link), as contemplated by *Saskio,* adopting Jain'229 teachings (as interpreted by the Office) would result in a total communication failure. A combination that renders the art inoperable for its intended purpose will not support an obviousness rejection. See, MPEP 2143.

The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit, *in re KSR International Co. v. Teleflex Inc. (KSR).* The Court in *KSR* quoted *In re Kahn*, which state that "Rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." The Office asserts one would be motivated to make such a combination to obtain high availability. However, the teachings of both *Saskio* and *Jain '229* are in contradiction to the position taken by the Office, as for example, *Saskio*

teaches immediately switching to the alternate path and *Jain '229* teaches updating ports as soon as a link fails. Both of these prior arts do so to achieve high availability and neither reference suggests achieving such high availability through the continued use of a failed link. To the extent that the Examiner suggests the proposed modification achieves *even higher availability*, the Examiner has not articulated any support for this conclusion, rendering the analysis merely conclusory. Hence, a person of ordinary skills would not be motivated to attempt using the approach as suggested by the Office.

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

Dependent Claims:

Considering that the dependent claims include all of the features of the independent claims from which they depend, the dependent claims are patentable to the extent that the independent claims are patentable.

Furthermore, the Office rejected Applicants' dependent claims in further view of *Jain '072*. The Office asserts that *Jain '072* teaches "wherein sending a message from a first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user". According to the Office Action, the examiner is construing the term "user" to be "any network entity". The Applicants respectfully disagree. The claims specifically recite that a user designates one or more devices where the notification should be sent. A person skilled in the art would construe this recital as being a pre-configuration step in which a user or administrator designates the receivers of notifications. There is no logical reasoning behind construing the term "user" to be any network entity. Nevertheless, *Jain '072* teaches (see para [0070]) "*Thus, when the router becomes aware of a fault, it sends a notification via a multi-cast tree that specifies paths to all the other nodes in the network*." Hence, *Jain '072* teaches sending notifications to all nodes and not to the selected designated nodes, as recited in the claims. Jain '072 does mention (in the same paragraph) pre-configured multi-cast trees to send notifications, however, these pre-configured multi-cast trees are being used merely to find paths to all nodes so that notifications can be sent to all nodes in the network. Hence, the term

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"pre-configured multi-cast trees" has a different meaning than the term "designated nodes" to which notifications are sent.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Dated: June 11, 2010

Respectfully submitted, and
S-signed pursuant to 37 C.F.R. 1.4.

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Electronic Acknowledgement Receipt

EFS ID:	7799766
Application Number:	11398519
International Application Number:	
Confirmation Number:	7705
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor/Applicant Name:	Gokul S. Tirumalai
Customer Number:	62147
Filer:	Gero G. McClellan/Joseph Jong
Filer Authorized By:	Gero G. McClellan
Attorney Docket Number:	CISC/12792
Receipt Date:	11-JUN-2010
Filing Date:	05-APR-2006
Time Stamp:	17:08:18
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		SEQ12792_ROA.pdf	135225 [illegible]	yes	12

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	12
Warnings:			
Information:			
	Total Files Size (in bytes):	135225	

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

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

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

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

PTO/SB/06 (07-06)
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/398,519	04/05/2006	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY ☐ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 06/11/2010	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 21	Minus	** 28	= 0	X $ =		OR	X $52=	0
Independent (37 CFR 1.16(h))	* 5	Minus	*** 7	= 0	X $ =		OR	X $220=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/WANDA ANTHONY/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tatinmkai	CISC/12792	7705

62147 7590 06/10/2010

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HOUSTON, TX 77056-6582

EXAMINER
MA, WING

ART UNIT	PAPER NUMBER
2456	

MAIL DATE	DELIVERY MODE
06/10/2010	PAPER

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

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

PTOL-90A (Rev. 04/07)

Interview Summary	Application No.	Applicant(s)	
	11/396,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	Wing Ma	2456	

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

(1) *Wing Ma*. (3)_____.

(2) *Rajeev Madnawat (Reg No. 57,910)*. (4)_____.

Date of Interview: *02 June 2010*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1*.

Identification of prior art discussed: *Saskio (US 2004/0105390) and Jain (US 6,330,229)*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *The claim limitation "continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device" was discussed. Both the examiner and applicant's representative presented arguments. The examiner will further consider applicant's arguments/amendments upon filing of a formal response.*

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Rupal D. Dhana/
Supervisory Patent Examiner, Art Unit 2400

Quicker Connections - Exhibit 2011
IPR2025-01088 - Page 320

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tatavolai	CISC/12792	7705

62147 7590 03/11/2010

PATTERSON & SHERIDAN, LLP/CISC
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HOUSTON, TX 77056-6582

EXAMINER
MA, WING

ART UNIT	PAPER NUMBER
2456	

MAIL DATE	DELIVERY MODE
03/11/2010	PAPER

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

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

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	11/398,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	Wing Ma	2456	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6, 8-21 and 28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-21 and 28* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-6, 8-21 and 28 are subject to examination. Claims 7 and 22-27 have been canceled.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/23/2009 has been entered.

Specification

3. The previous Office action's specification objection has been withdrawn in light of applicant's arguments.

Claim Objections

4. Claim 7 is objected to because it appears that the applicant has mistakenly re-entered the instant claim into the 11/23/2009 amendments. This mistake is evidenced by the applicant's 11/23/2009 remarks, which discloses, "claims 1-6, 8-21, and 28 remain pending following entry of this response" (p. 1, lines 5-6); and the applicant's previously entered 03/02/2009 remarks/amendments, which clearly disclose claim 7 as

cancelled. (*See* 03/02/2009 remarks, p. 1, line 5; *see also* 03/02/2009 amendments, p. 2, line 7.) Accordingly, the examiner will regard claim 7 as canceled.

Claim Construction

5. The "means for" recited by claim 28 is construed to be hardware means for, as suggested by the specification (par. [0022]).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 5, 6, 9, 13, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claims 5, 6, 9, 13, and 18,

There is insufficient antecedent basis for the limitation, "the second switch," in the claims.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

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

9. Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 19 recites "a computer readable

medium," and the broadest reasonable interpretation of a claim drawn to a computer readable medium typically covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent. *See* MPEP 2111.01. When the broadest reasonable interpretation of a claim covers a signal *per se*, the claim must be rejected under 35 U.S.C. § 101 as covering non-statutory subject matter. *See In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory subject matter) and *Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. § 101*, Aug. 24, 2009; p. 2.

A claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be amended to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 U.S.C. § 101 by using the language "non-transitory computer readable storage medium" in the claim. *Cf. Animals – Patentability*, 1077 *Off. Gaz. Pat. Office* 24 (April 21, 1987) (suggesting that applicants add the limitation "non-human" to a claim covering a multi-cellular organism to avoid a rejection under 35 U.S.C. § 101). Such an amendment would typically not raise the issue of new matter, even when the specification is silent because the broadest reasonable interpretation relies on the ordinary and customary meaning that includes signals per se. The limited situations in which such an amendment could raise issues of new matter occur, for example, when the specification does not support a non-transitory embodiment because a signal per se is the only viable embodiment such that the

amended claim is impermissibly broadened beyond the supporting disclosure. See, e.g., Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473 (Fed. Cir. 1998).

Response to Arguments

10. Applicant's arguments filed 11/23/2009 have been fully considered. The arguments regarding the Mark reference are moot in view of the new ground(s) of rejection. Also, upon reconsideration of the Saskio reference and the applicant's disclosure, the examiner submits that Saskio does teach sending notification of a change in status of an upstream link "via an aggregate link," as recited by claim 1.

The applicant's specification fails to clearly and explicitly define the term "aggregate." However, the specification does define the term "link" as "any connection between devices;" and the related term "aggregation device" as "a network element that connects to one or more access devices," wherein an "access device" is "a network element that is connected to one or more end stations" (*see* 04/05/06 specification, p. 6, par. [0021]). Furthermore, the dictionary definition of "aggregate" is "formed by the collection of units or particles into a body, mass, or amount" (Merriam-Webster's Online Dictionary).

In view of the above evidence, the examiner interprets the limitation "aggregate link" as a connection between an aggregation device and an access device, wherein the connection comprises a collection of connections to other devices (e.g., end stations). This interpretation is also supported by an exemplary embodiment in the specification, which discloses sending notification of a change in status of an upstream link via the

connection between SW1 (332) and SW3 (334). This connection is between an aggregation device (i.e., SW1) and an access device (i.e., SW3), wherein the connection comprises a collection of connections to other devices (e.g., L_p) (*see* 04/05/06 specification and drawings, par. [0028] and FIG. 3B intra).

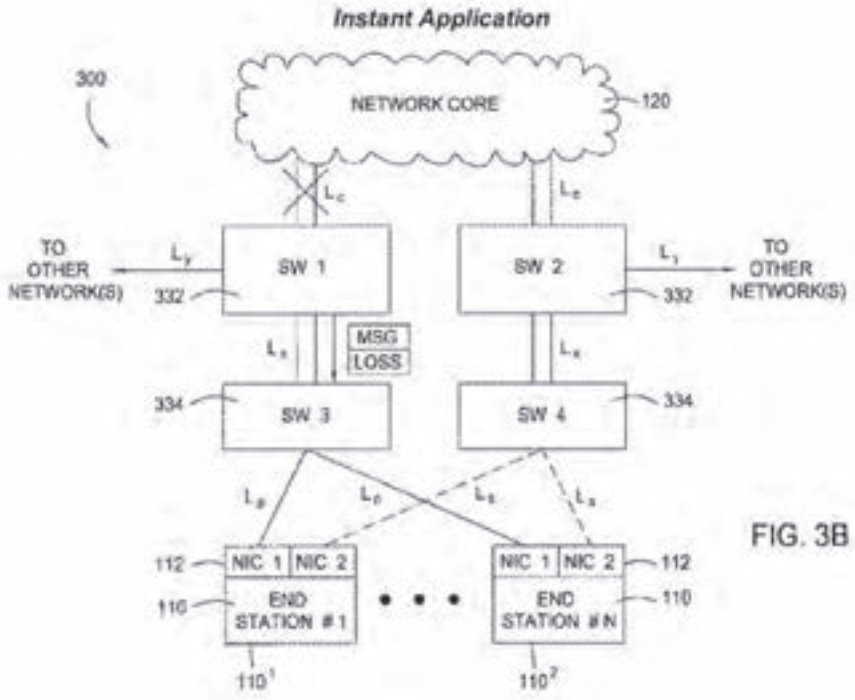


FIG. 3B

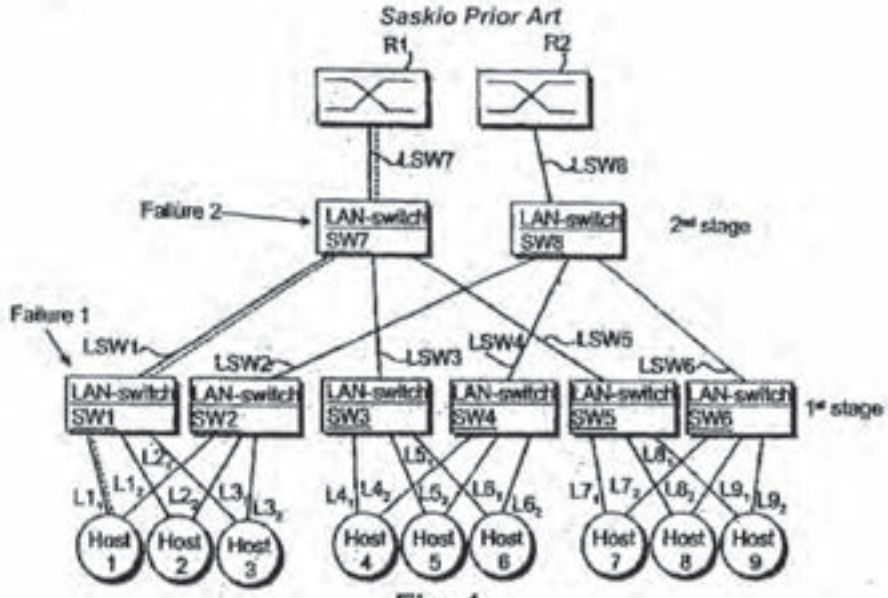


Fig. 1

Saskio teaches sending notification of a change in status of an upstream link via LSW1 (par. [0028]). LSW1 is a connection between an aggregation device (i.e., SW7) and an access device (i.e., SW1), wherein the connection comprises a collection of connections to other devices (e.g., $L1_1$, $L2_1$, and $L3_1$) (*see* FIG. 1, supra). Therefore, Saskio teaches an "aggregate link" as recited by the claim language and suggested by the specification.

Claim Rejections - 35 USC § 103

11. 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.

12. Claims 1-3, 5, 9-11, 13, 15, 19-20 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio (hereinafter "Saskio") (US 2004/0105390 A1) in view of Jain '229 et al. (hereinafter "Jain '229") (US 6,330,229 B1).

Referring to claim 1,

Saskio teaches a method for managing a network path between at least one end station and a network, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network (par. [0028] and FIG. 1 teach a first network device, LAN switch SW7, and an upstream communication link, LSW7. par. [0029] teaches the upstream communication is connected to router R1, which is connected to a network. pars. [0034]-[0035] teach that each device contains an Ethernet controller, which monitors the status of active links.); and

sending, by the first network device, via an aggregate link (i.e., LSW1, see arguments above) between the first device and a second network device, notification of the change in status to the second network device in communication with the end station via a first downstream communication link (par. [0028] and FIG. 1 teach the first network device (i.e., SW7) sends a notification of the change in status (i.e., link-down state) to a second network device (i.e., SW1). SW1 is in communication with an end station (i.e., Host 1) via a first downstream communication link (i.e., $L1_1$).),

the notification designed to cause the second network device to disable the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third switch and the end station. (par. [0028]

teaches the second network device (i.e., SW1), sends the link-down state to Host 1. par. [0026] teaches when a Host device receives a path failure notification, it switches to a second downstream link, $L1_2$. FIG. 1 teaches $L1_2$ is connected to a third switch (i.e., SW2).)

Saskio is silent as to continuing to carry traffic on the aggregate link after sending the link-down notification.

Jain '229, in summary, discloses a method for managing a network path between multiple switching layers of bridges (i.e., access devices) (FIG. 1 and col. 6, lines 9-28). Jain '229 teaches the concept of continuing to carry traffic on the downstream links of a first network device after the first network device sends a notification of change in status to at least one secondary network device. (FIG. 1; col. 4, lines 29-46; and col. 6, lines 65-67 to col. 7, lines 1-35 teach bridge B1 continuing to carry traffic on downstream links [e.g., the connection between port 15 and port 16], after sending notification of a change in status of the connection between port 11 and port 12.)

One of ordinary skill in the art could read the teaching of Jain '229 and use this teaching to provide the high availability benefits indicated by Jain '229 (*see* Jain '229, col. 4, lines 66-67 to col. 5, lines 1-9) to the method of Saskio. By combining the teaching of Jain '229 with Saskio, Saskio's SW7 can be further configured to automatically transition to another upstream port after detecting a link failure, and therefore maintain the connectivity of its downstream links. This combination would not subtract out the aggregate link teaching of Saskio, therefore the aggregate link, LSW1, would maintain connectivity even after failure of LSW7. Furthermore, the application of

Jain '229 to Saskio uses known methods (e.g., additional programming and interfacing in between access devices), and yields nothing more than predictable results.

Referring to claim 2,

Saskio and Jain '229 teach the method of claim 1. Jain '229 teaches wherein one or more intermediate network devices, between the first and second network devices (FIG. 1 and col. 6, lines 9-28 teach intermediate bridges), receives the notification of the change in status from the first network device and forwards the notification to the second network device. (col. 4, lines 48-57 teach propagating the notification of the change in status throughout the descendents of the first network device.)

Referring to claim 3,

Saskio and Jain '229 teach the method of claim 1. Saskio teaches wherein sending notification, by the first network device, of the change in status to the second network device comprises sending a message from the first network device to one or more network devices in communication with the first network device. (par. [0028] teaches propagation of the link-down state to Host devices, which are network devices in communication with the first network device (i.e., SW7).)

Referring to claim 5,

Saskio and Jain '229 teach the method of claim 1. Saskio teaches wherein the second switch is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second switch and a plurality of end stations. (par. [0028] teaches if SW1 gets the link-down state, it sets the

downstream links, $L1_1$ and $L2_1$, to the link-down state as well. $L1_1$ and $L2_1$ connect SW1 to the Host.)

Referring to claim 9,

Saskio and Jain '229 teach the method of claim 1. Saskio teaches wherein the change in communication status comprises a loss in connectivity between the first network device and the network and the method further comprises:

detecting, by the first network device, recovery of connectivity between the first network device and the network (par. [0031] teaches the recovery detection's process is the same as the failure detection's; therefore the monitoring mechanism taught by pars. [0034] and [0035] also applies to link-up situations); and

sending, by the first network device, notification of the recovery in status to the second network device (If the steps recited by par. [0028] are modified to reflect the link-up situation, the first network device, SW7, would propagate notification of the recovery, link-up state, to the secondary network device, SW1.); and

in response to receiving the notification of the recovery in status, enabling by the second switch, the first downstream communication link. (If the steps recited by par. [0028] are modified to reflect the link-up situation, the second network device, SW1, would propagate the link-up state to the Host 1, thereby enabling the first downstream communication link, $L1_1$.)

Referring to claim 10,

Claim 10 is a claim to a network switching system implementing the method of claim 1. Therefore claim 10 is rejected for the reasons set forth for claim 1.

Referring to claim 11,

Claim 11 is a claim to a network switching system implementing the method of claim 2. Therefore claim 11 is rejected for the reasons set forth for claim 2.

Referring to claim 13,

Claim 13 is a claim to a network switching system implementing the method of claim 5. Therefore claim 13 is rejected for the reasons set forth for claim 5.

Referring to claim 15,

Claim 15 is a claim to a system, comprising: a plurality of end stations; at least a first network device and at least a second network device configured to implement the method of claim 1. Saskio teaches a plurality of end stations (FIG. 1 and para. [0028]). The remaining claim limitations are rejected for the reasons set forth for claim 1.

Referring to claim 19,

Claim 19 is a claim to an aggregation device implementing the method of claim 1. Therefore claim 19 is rejected for the reasons set forth for claim 1; wherein the claimed aggregation device maps to SW7 (of Saskio), and the claimed network device maps to SW1 (of Saskio).

Referring to claim 20,

Saskio and Jain '229 teach the aggregation device of claim 19. Saskio further teaches wherein the operations comprise:

detecting recovery of connectivity between the aggregation device and the network (par. [0031] teaches the recovery detection's process is the same as the failure

detection's; therefore the monitoring mechanism taught by pars. [0034] and [0035] also applies to link-up situations); and

sending notification of the recovery in status to the network device. (If the steps recited by par. [0028] are modified to reflect the link-up situation, the aggregation device, SW7, would propagate notification of the recovery, link-up state, to the network device, SW1.)

Referring to claim 28,

Claim 28 is a claim to a network device "means for" implementing the method of claim 1. Therefore claim 28 is rejected for the reasons set forth for claim 1.

13. Claims 4, 6, 8, 12, 14, 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio in view of Jain '229 and Jain '072 (hereinafter "Jain '072") (US 2002/0112072 A1).

Referring to claim 4,

Saskio and Jain '229 teach the method of claim 1.

Saskio and Jain '229 are silent as to specifications by a user.

Jain '072 teaches wherein sending a message from a first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 6,

Saskio and Jain '229 teach the method of claim 1.

Saskio and Jain '229 are silent as to the second switch is configured to forward a message to one or more network devices specified by a user.

Jain '072 teaches wherein sending a message from a second network device to one or more network devices in communication with the second network device comprises sending a message to one or more network devices specified by a user. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229,

and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected devices are aware of important network changes.

Referring to claim 8,

Saskio and Jain '229 teach the method of claim 1.

Saskio and Jain '229 are silent as to end stations are specified by a user.

Jain '072 teaches the end stations are specified by a user. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. FIG. 1 and par. [0028] teach end stations are connected to the intermediate network devices.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary

skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 12,

Claim 12 is a claim to a network switching system implementing the method of claim 4. Therefore claim 12 is rejected for the reasons set forth for claim 4.

Referring to claim 14,

Claim 14 is a claim to a network switching system implementing the method of claim 8. Therefore claim 14 is rejected for the reasons set forth for claim 8.

Referring to claim 16,

Saskio and Jain '229 teach the system of claim 15.

Saskio and Jain '229 are silent as to an end station without a second network interface.

Jain '072 teaches external equipment (e.g., end stations) without a second network interface coupled to edge equipment via a network link, such as CE 118 (FIG. 1 and para. [0028]).

To apply the concept of including a single network interface device of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., using a single interface device) with no change in their respective functions, and the combination would have yielded nothing more than predictable

results to one of ordinary skill in the art at the time of the invention, i.e., by including end stations with single interfaces, the system becomes more compatible with a wider variety of devices.

Referring to claim 17,

Claim 17 is a claim to a system implementing the method of claim 4. Therefore claim 17 is rejected for the reasons set forth for claim 4.

Referring to claim 18,

Saskio and Jain '229 teach the system of claim 15.

Saskio and Jain '229 also teach the second network device configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second switch and a limited subset of the plurality of end stations (see rejection for claim 5).

Saskio and Jain '229 are silent as to the limited subset of the plurality of end stations are specified by a user.

Jain '072 teaches the idea of a user specifying a subset of end stations for a notification. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. FIG. 1 and par. [0028] teach end stations are connected to the intermediate network devices.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229,

and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-configuring forwarding databases) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Referring to claim 21,

Saskio and Jain '229 teach the aggregation device of claim 19.

Saskio and Jain '229 are silent as to obtaining a list of network devices specified by a user.

Jain '072 teaches each node contains a preconfigured multi-cast tree (which reads on a list of network devices); and sending notification of a change in status to the network devices specified by the user. (*Note:* The examiner is construing the term "user" to be any network entity. par. [0070] teaches each node (including an intermediate network device) contains a pre-configured multi-cast tree, which specifies one or more network devices a failure notification is to be sent to. FIG. 1 and par. [0028] teach end stations are connected to the intermediate network devices.)

To apply the pre-configured multi-cast tree idea of Jain '072 would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, Jain '229, and Jain '072, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e., pre-

configuring forwarding databases) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., designating destination information for fault notifications ensures that affected end stations are aware of important network changes.

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amendments, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and support, for ascertaining the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wing Ma whose telephone number is (571)270-5656. The examiner can normally be reached on Monday thru Friday, during the hours of 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing Ma/
Examiner, Art Unit 2456

/Rupal D. Dharia/
Supervisory Patent Examiner, Art Unit 2400

Notice of References Cited	Application/Control No. 11/398,519	Applicant(s)/Patent Under Reexamination TIRUMALAI ET AL.	
	Examiner Wing Ma	Art Unit 2456	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,330,229	12-2001	Jain et al.	370/256
*	B	US-6,628,661	09-2003	Goldman et al.	370/408
*	C	US-6,987,740	01-2006	Di Benedetto et al.	370/256
*	D	US-6,032,194	02-2000	Gai et al.	709/239
*	E	US-6,697,339	02-2004	Jain, Vipin K.	370/256
*	F	US-6,891,808	05-2005	Ishii, Shoji	370/256
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	10/15/2008	07/10/2009	02/23/2010						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	-	-						
	8	✓	✓	✓						
	9	✓	✓	✓						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13	✓	✓	✓						
	14	✓	✓	✓						
	15	✓	✓	✓						
	16	✓	✓	✓						
	17	✓	✓	✓						
	18	✓	✓	✓						
	19	✓	✓	✓						
	20	✓	✓	✓						
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	25	✓	✓	-						
	26	✓	✓	-						
	27	✓	✓	-						
	28	✓	✓	✓						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

SEARCHED			
Class	Subclass	Date	Examiner
709	238, 239	10/2008	WM
370	241, 244, 245, 248	10/2008	WM

SEARCH NOTES		
Search Notes	Date	Examiner
Inventors' names searches on EAST	10/2008	WM
text search only on EAST - see search history printout	10/2008	WM
updated EAST search - see printout	07/2009	WM
updated EAST search - see printout	02/2010	WM

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L7	11831	(switch$4 or failover or (fail near over)) and (path or route) and (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L8	418	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L11	4584	709/238.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L12	1044	709/238.ccls. and notification	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L13	89	709/238.ccls. and notification and (failover or (fail near over))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L14	558	709/238.ccls. and notification and ((failover or (fail near over)) or switch)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L28	418	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L40	5	(network near administrator) same set same (failover or fail $over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L41	61	(network near administrator) same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05

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L42	97	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L43	18	link same failure same manually same configure	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L48	95	(failure near over) and administrator and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L49	51	link same failure same administrator same list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L50	191	link same failure same administrator same (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L68	1344	(link same failure same list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L69	418	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L70	286	L69 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L71	1643	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L72	909	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table) and ("370"/$$.ccls. or "709"/$$.ccls.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L73	2321	370/241.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05

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L74	614	370/244.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L75	355	370/245.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L76	1020	370/248.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L77	143	L74 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L86	418	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L87	1441	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L88	3	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L89	1145	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream)) and (notificat $5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L90	16	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05

L91	57	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L92	14	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L93	17	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error or disconnect$5) same (aggregat $5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L94	78	(failure or change or update or error or disconnect$5) same (aggregate adj5 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L95	96	(failure or change or update or error or disconnect$5) same (aggregate near3 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L98	231	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near25 (aggregat$5 near5 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05

L99	195	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near20 (aggregat$5 near3 (link or path or stream or flow)) near20 (change or disconnect or failure or fail or update or error) near20 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L100	185	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L101	21	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) near15 (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L102	25	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) near25 (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05

L107	156	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same ((link or stream or path or flow) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L109	17	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) near3 up) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L114	79	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or error) same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05
L115	61	L114 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/03/08 06:05

3/8/2010 6:21:33 AM
C:\Documents and Settings\wma\My Documents\EAST\Workspaces\11398519.wsp

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Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11398519	Filing Date	2006-04-06	Docket Number (if applicable)	SEQ12792	Art Unit	2456
First Named Inventor	Gokul Tirumalai			Examiner Name	Wing Ma		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 200782

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature
☐ Applicant Signature

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
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Signature of Registered U.S. Patent Practitioner			
Signature	/Randol W. READ/	Date (YYYY-MM-DD)	2009-11-23
Name	Randol W. Read	Registration Number	43876

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

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

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PAGE 4/15 * RCVD AT 11/23/2009 10:34:37 PM [Eastern Standard Time] * SVR:USPTO-EFXSF-6/22 * DNIS:2738300 * CSID:17135831025 * DURATION (mm-ss):11-20

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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system or via facsimile in accordance with § 1.6(a)(4).

Dated: November 23, 2009 Signature: /Randol W. Read/ Reg. #43876
(Randol W. Read)

Docket No.: SEQ12792 (1654.024762)
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Tirumalai et al.	§	Confirmation No.: 7705
Serial No.: 11/398,519	§	Group Art Unit: 2456
Filed: April 5, 2006	§	Examiner: W. Ma
For: SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES	§	

AMENDMENT ACCOMPANYING REQUEST FOR CONTINUED EXAMINATION

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

Dear Sir:

INTRODUCTORY COMMENTS

Prior to continued examination, please enter this response and reconsider the claims pending in the application for reasons discussed below.

The Commissioner is hereby authorized to charge underpayments or credit overpayments to counsel's Deposit Account No. 20-0782/ SEQ12792 (1654.024762)/RWR.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 7 of this paper.

PAGE 5/15 * RCVD AT 11/23/2009 10:34:37 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/22 * DNIS:2738300 * CSID:17135831025 * DURATION (mm-ss):11-20

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AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for managing a network path between at least one end station and a network, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network;

sending, by the first network device, via an aggregate link ~~communication link~~ between the first device and a second network device, notification of the change in status to the second network device in communication with the end station via a first downstream communication link, the notification designed to cause the second network device to disable the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third switch and the end station; and

continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device.

2. (Original) The method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

3. (Original) The method of claim 1, wherein sending notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device.

4. (Original) The method of claim 1, wherein sending a message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user.

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5. (Original) The method of claim 1, wherein the second switch is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second switch and a plurality of end stations.

6. (Original) The method of claim 1, wherein the second switch is configured to forward a message containing the notification to one or more network devices specified by a user.

7. (Original) The method of claim 6, wherein the second network device is configured to forward the message without interpreting the message.

8. (Original) The method of claim 1, wherein the plurality of end stations are specified by a user.

9. (Original) The method of claim 1, wherein the change in communication status comprises a loss in connectivity between the first network device and the network and the method further comprises:

detecting, by the first network device, recovery of connectivity between the first network device and the network; and

sending, by the first network device, notification of the recovery in status to the second network device; and

in response to receiving the notification of the recovery in status, enabling by the second switch, the first downstream communication link.

10. (Previously Presented) A network switching system, comprising:

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core; and

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link and, in response, disable a first downstream communication link between the second network device and an end station, wherein the aggregate link continues to carry traffic.

11. (Original) The system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device.

12. (Original) The system of claim 10, wherein the first network device is configured to send notification of the change in status to a plurality of network devices specified by a user.

13. (Original) The system of claim 10, wherein the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second switch and a plurality of end stations.

14. (Original) The system of claim 13, wherein the plurality of end stations are specified by a user.

15. (Previously Presented) A system, comprising:

a plurality of end stations;

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core; and

at least a second network device configured to receive, from the first network device, via an aggregate link, notification of the change in status from the first network device and, in response, disable first downstream communication links between first network interface devices on the plurality of end stations, thereby causing at least some of the plurality of end stations to switch to second downstream communications links between second network interface devices thereon and at least a third network device, wherein the aggregate link continues to carry traffic.

16. (Original) The system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface.

17. (Original) The system of claim 15, wherein the first network device is configured to send notification of the change in status to a plurality of network devices specified by a user.

PAGE 8/15 * RCVD AT 11/23/2009 10:34:37 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/22 * DNIS:2738300 * CSID:17135831025 * DURATION (mm-ss):11-20

18. (Original) The system of claim 15, wherein the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second switch and a limited subset of the plurality of end stations specified by a user.

19. (Previously Presented) An aggregation device comprising:

a processor; and

a computer readable medium containing instructions which, when executed by the processor, cause the aggregation device to perform operations comprising,

detecting a change in status of a first upstream communication link between the aggregation device and a network,

sending notification of the change in status, via an aggregate link, to a network device in communication with an end station via a first downstream communication link, and

maintaining the aggregate link to continue to carry traffic.

20. (Original) The aggregation device of claim 19, wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network; and

sending notification of the recovery in status to the network device.

21. (Original) The aggregation device of claim 19, wherein the operations comprise:

obtaining a list of network devices specified by a user; and

sending notification of the change in status to the network devices specified by the user.

22-27. (Cancelled)

28. (Previously Presented) A network device comprising:

means for detecting a change in status of a first upstream communication link between the network device and a network;

means for sending notification of the change in status, via an aggregate link, to another network device in communication with an end station via a downstream communication link to cause the other network device to disable the downstream communication link; and

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means for maintaining the aggregate link to continue to carry traffic.

Application No. 11/398,519
Amendment dated November 23, 2009
Filed with RCE

Docket No.: SEQI 2792 (1654.024762)

REMARKS

This is intended as a full and complete response to the Final Office Action dated July 21, 2009, having a shortened statutory period for response set to expire on October 21, 2009. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-6 and 8-28 are pending in the application prior to entry of this response and claims 22-27 are cancelled herein. Therefore, claims 1-6, 8-21, and 28 remain pending following entry of this response. Applicants submit that the amendments to not introduce new matter.

Further, Applicants are not conceding in this application that those amended (or canceled) claims are not patentable over the art cited by the Examiner, as the present claim amendments and cancellations are only for facilitating expeditious prosecution of the claimed subject matter. Applicants respectfully reserve the right to pursue these (pre-amended or canceled claims) and other claims in one or more continuations and/or divisional patent applications.

Specification Objections

The specification is objected to as failing to provide proper antecedent basis for the claimed subjectmatter. In particular, the Examiner states that the specification fails to provide antecedent basis for the "computer readable medium" recited in claims 19-22. Applicants respectfully refer to paragraphs [0011] and [0012] that provide antecedent basis for a "computer readable medium."

The Examiner also objects to claims 22 and 25. Applicants respectfully submit, however, that these claims have been cancelled.

Accordingly, Applicant respectfully request withdrawal of these objections.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 3, 5, 9-10, 14-15, 19-20 and 28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saskio* (U.S. Publication 2004/0105390) in view of *Mark et al.* (U.S. Patent No. 6,956,824, hereinafter, "*Mark*").

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Applicants respectfully traverse these rejections.

The Examiner bears the initial burden of establishing a prima facie case of obviousness. See MPEP § 2141. Establishing a prima facie case of obviousness begins with first resolving the factual inquiries of Graham v. John Deere Co. 383 U.S. 1 (1966). The factual inquiries are as follows:

(A) determining the scope and content of the prior art;
(B) ascertaining the differences between the claimed invention and the prior art;
(C) resolving the level of ordinary skill in the art; and
(D) considering any objective indicia of nonobviousness.

Once the Graham factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art.

Respectfully, Applicants submit that the Examiner has not properly characterized the teachings of the references and/or the claims at issue. Accordingly, a prima facie case of obviousness has not been established.

Applicants respectfully submit that, in this case, the Examiner has failed to properly determine the scope and content of the prior art and, as a result, has failed to ascertain differences between the claimed invention and the prior art.

As an example, the Examiner concedes that *Saskio* fails to teach sending notification of a change in status of an upstream link "via an aggregate link between the first device and a second network device" and "continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device" as recited in claim 1, but erroneously refers to *Mark* as teaching these elements.

In particular, the Examiner refers to column 6, lines 41-67 as teaching sending the notification via the aggregate link as recited in claim 1. This cited section is listed herein for convenience:

FIG. 4B shows a block diagram of a switching node **23** of network **20**, equipped with a link aggregation interface **34** according to the invention. FIG. **4B** shows only the blocks of the node that are relevant to the invention. A node **23** is generally equipped with a switch **31** for routing the traffic from the input ports **31** to the output ports **32**, according to a connectivity map **33**, as instructed by a node controller **35**. FIG. **4B** also shows the link aggregation interface **16'** corresponding to interface **16** on the data device A. Link aggregation interface **16'** is responsible for maintaining a list of logical links which are being used by this invention. This information is provided by the node controller **35** in conjunction with the other nodes of network **20**. Also illustrated at node **23** is a fault detection and communication block **34** that is used to determine a fault in an input signal and to provide this information with the output signal. It is to be noted that block **34** illustrates the detection and communication of a fault intuitively; the actual implementation of this functionality is not the object of the invention. The idea is that in general, the nodes at the ends of a failed span have means for detecting and communicating that a fault occurred. Once this information becomes available at node **23**, block **34** propagates this information to edge nodes C and N over network **20**. A similar fault detection and fault communication mechanism exists on the internal nodes. This mechanism allows the faults on internal network links to be propagated to the edge nodes C and N.

Despite the Examiner's contention to the contrary, clearly this section does not teach sending notification of a change in status of an upstream link "via an aggregate link" as recited in claim 1.

Further, the Examiner refers to column 7, lines 21-37 as teaching "continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device" as recited in claim 1. This cited section is listed herein for convenience:

> The present invention also provides for a failure propagation mechanism to support extension of LAP. As discussed above, in an arbitrary MAN mesh, it is not easy to provision physical links for connecting network devices. The faults are detected as shown in step **58** which shows that network **20** continuously exchanges peer information to determine the link state. If a failure is detected inside or at the edge of network **20**, step **60**, this information is propagated to the edges (internal link failure) or far edge (edge failure) of the network **20** where the user equipment A and B is attached, step **61**. The respective edge aggregation ports a, b or c on switching node C, and k, l or m on switching node N are forced into a disabled state, so that the user equipment can detect that a link is down and rapidly react to this condition, by re-distributing the flow from the failed logical link onto the remaining logical links.

Despite the Examiner's contention to the contrary, clearly this section does not teach "continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device " as recited in claim 1.

For at least these reasons, Applicants submit claim 1 and its dependents are allowable over *Saskio* and *Mark*. Claims 10, 15, 19, and 28 recite similar limitations as claim 1 that are also not taught in *Saskio* and *Mark*. Accodingly, Applicants respectfully submit these claims are also allowable and respectfully request withdrawal of this rejection.

Claims 2, 4, 6, 8, 11-12, 14, 16-18 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saskio* in view of *Mark* and *Jain* (U.S. Publication 2002/0112072).

These claims depend, directly or indirectly, from claims 1, 10, 15, and 19, which Applicants submit are allowable for at least reasons discussed above. Further, Applicants respectfully submit that *Jain* fails to overcome the teachings of *Saskio* and *Mark*. Accordingly, Applicants submit these claims are also allowable and respectfully request withdrawal of this rejection.

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

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Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Dated: November 23, 2009

Respectfully submitted, and
S-signed pursuant to 37 C.F.R. 1.4,

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PAGE 15/15 * RCVD AT 11/23/2009 10:34:37 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/22 * DNIS:2738300 * CSID:17135831025 * DURATION (mm-ss):11-20

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FACSIMILE COVER SHEET

DATE:	November 23, 2009
FILE NO:	SEQ12792
TO:	Examiner Ma
FAX NO:	1.571.273.8300
COMPANY:	USPTO
FROM:	Randol W. Read
PAGE(S) with cover:	15
ORIGINAL TO FOLLOW?	☐ YES ☒ NO

RESPONSE TO OFFICE ACTION DATED JULY 21, 2009

TITLE:	**SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES**
U.S. SERIAL NO.:	**11/398,519**
FILING DATE:	**April 5, 2006**
INVENTOR:	**Tirumalai et al.**
EXAMINER:	**Wing Ma**
GROUP ART UNIT:	**2456**
CONFIDENTIALITY NOTE:	**7705**

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/398,519	04/05/2006	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	11/23/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 22	Minus	** 28	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 5	Minus	*** 7	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DIANE WILLIAMS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tatinmkai	CISC/12792	7705

62147 7590 07/21/2009

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EXAMINER
MA, WING

ART UNIT	PAPER NUMBER
2456	

MAIL DATE	DELIVERY MODE
07/21/2009	PAPER

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

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

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	11/398,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	Wing Ma	2456	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

Quicker Connections - Exhibit 2011
IPR2025-01088 - Page 370

DETAILED ACTION

1. Claims 1-6 and 8-28 are subject to examination. Claim 7 has been cancelled.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the "computer readable medium," recited by claims 19 and 22, requires a clear definition in the specification. Since the specification does not provide any definition or any suggestion of the "computer readable medium", for the purpose of this examination, the Office will interpret "computer readable medium" as a conventional storage medium.

Referring to claims 22-27,

Although the applicant states that the independent claims 22 and 25 recite the use of an aggregate link (see applicant's remarks filed 03/02/2009, page 2, fourth paragraph). The claim set filed on 03/02/2009 recites the claims as unchanged. Therefore, the prior art rejections for claims 22-27 are incorporated by reference from the Office action dated 10/29/2008.

Response to Arguments

3. Applicant's arguments filed 03/02/09 with respect to claims 1-6, 8-21 and 28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. 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.

5. Claims 1, 3, 5, 9-10, 14-15, 19-20 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio (hereinafter Saskio) (US 2004/0105390 A1) in view of Mark et al. (hereinafter Mark) (US 6,956,824 B2).

Referring to claim 1,

Saskio teaches a method for managing a network path between at least one end station and a network, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network (para. [0028] and FIG. 1, teach a first network device, LAN switch SW7, and an upstream communication link, LSW7. para [0029] teaches the upstream communication is connected to router R1, which is connected to a network. para. [0034] and [0035], teach that each device of Saskio's system contains an Ethernet controller, which monitors the status of active links); and

sending, by the first network device, notification of the change in status to a second network device in communication with the end station via a first downstream communication link. (para. [0028] and FIG. 1 teach the first network device, SW7, sends a notification of the change in status, link-down state, to a second network device SW1. SW1 is in communication with an end station, Host 1, and the connection is referred to

as a down-link.) the notification designed to cause the second network device to disable the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third switch and the end station (para. [0028] teaches the second network device, SW1, sends the link-down state to Host 1. para. [0026] teaches that when a Host device receives a path failure notification, it switches to a second downstream link, $L1_2$. This process is analogous to a failover. FIG. 1 teaches $L1_2$ is connected to a third switch, SW2.)

Saskio fails to explicitly indicate sending notification of the change in status via an aggregate link communication link between a first device and a second network device and continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device.

Mark teaches sending notification of the change in status via an aggregate link communication link between a first device and a second network device (col. 6, lines 41-67 teach detecting a fault and propagating notification of the fault via a link aggregation interface.) and continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device. (col. 7, lines 22-36 teach re-distributing the flow of a failed link and maintaining the link aggregation interface.)

To provide the link aggregation interface of Mark would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (aggregating multiple physical links into a

logical link) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., one skilled in the art would have recognized that link aggregation allows for the failover of physical routes.

Referring to claim 3,

Saskio and Mark teach the method of claim 1. Saskio teaches wherein sending notification, by the first network device, of the change in status to the second network device comprises: sending a message from the first network device to one or more network devices in communication with the first network device. (para. [0028] teaches propagation of the link-down state to Host devices, which are network device in communication with the first network device, SW7.)

Referring to claim 5,

Saskio and Mark teach the method of claim 1. Saskio teaches wherein the second switch is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second switch and a plurality of end stations. (para. [0028] teaches if SW1 gets the link-down state, it sets the downstream links, $L1_1$ and $L2_1$, to the link-down state as well. $L1_1$ and $L2_1$ connect SW1 to the Host.)

Referring to claim 9,

Saskio and Mark teach the method of claim 1. Saskio teaches wherein the change in communication status comprises a loss in connectivity between the first network device and the network and the method further comprises:

detecting, by the first network device, recovery of connectivity between the first network device and the network (para. [0031] teaches the recovery detection's process is the same as the failure detection's; therefore the monitoring mechanism taught by para. [0034] and [0035] also applies to link-up situations);

and sending, by the first network device, notification of the recovery in status to the second network device (If the steps recited by para. [0028] are modified to reflect the link-up situation, the first network device, SW7, would propagate notification of the recovery, link-up state, to the secondary network device, SW1.); and in response to receiving the notification of the recovery in status, enabling by the second switch, the first downstream communication link (para. [0028], reflecting the link-up situation, teaches the second switch propagates the link-up state to the Host, thereby enabling the first downstream communication link, $L1_1$.)

Referring to claim 10,

Claim 10 is at least a first network device and at least a second network device configured to carry out the method of claim 1. Therefore claim 10 is rejected for the reasons set forth for claim 1.

Referring to claim 13,

Claim 13 is a claim to a second network device configured to carry out the method of claim 5. Therefore claim 5 is rejected for the reasons set forth for claim 5.

Referring to claim 15,

Claim 15 is a claim to a system, comprising: a plurality of end stations; at least a first network device and at least a second network device configured to carry out the

method of claim 1. Saskio teaches a plurality of end stations in FIG. 1 and para. [0028]. The remaining claim limitations are rejected for the reasons set forth for claim 1.

Referring to claim 19,

Saskio teaches an aggregation device comprising: a processor (para. [0033] teaches that each network device contains a CPU); and a computer readable medium containing instructions which (it is inherent the network devices contain some type of medium and code to perform the steps of para. [0028] and [0035]), when executed by the processor, cause the aggregation device to perform operations comprising,

detecting a change in status of a first upstream communication link between the aggregation device and a network (para. [0028] and FIG. 1, teach an aggregation device, SW7, and an upstream communication link, LSW7. para [0029] teaches the upstream communication is connected to router R1, which is connected to a network. para. [0034] and [0035], teach that each device of Saskio's system contains an Ethernet controller, which monitors the status of active links),

and sending notification of the change in status to a network device in communication with an end station via a first downstream communication link. (para. [0028] and FIG. 1 teach SW7 sends a notification of the change in status, link-down state, to a network device, SW1. SW1 is in communication with an end station, Host 1, and the connection is referred to as a down-link.)

Saskio fails to explicitly indicate sending notification of the change in status via an aggregate link communication link and continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device.

Mark teaches sending notification of the change in status via an aggregate link communication link (col. 6, lines 41-67 teach detecting a fault and propagating notification of the fault via a link aggregation interface.) and continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device. (col. 7, lines 22-36 teach re-distributing the flow of a failed link and maintaining the link aggregation interface.)

To provide the link aggregation interface of Mark would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (aggregating multiple physical links into a logical link) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., one skilled in the art would have recognized that link aggregation allows for the failover of physical routes.

Referring to claim 20,

Saskio and Mark teach the aggregation device of claim 19. Saskio teaches wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network (para. [0031] teaches the recovery detection's process is the same as the failure detection's; therefore the monitoring mechanism taught by para. [0034] and [0035] also applies to link-up situations);

and sending notification of the recovery in status to the network device. (If the steps recited by para. [0028] are modified to reflect the link-up situation, the aggregation device, SW7, would propagate notification of the recovery, link-up state, to the network device, SW1.)

Referring to claim 28,

Saskio teaches a network device comprising:

means for detecting a change in status of a first upstream communication link between the network device and a network (para. [0028] and FIG. 1, teach a network device, SW7, and an upstream communication link, LSW7. para [0029] teaches the upstream communication is connected to router R1, which is connected to a network. para. [0034] and [0035], teach that each device of Saskio's system contains an Ethernet controller, which monitors the status of active links.);

and means for sending notification of the change in status to another network device in communication with an end station via a downstream communication link to cause the other network device to disable the downstream communication link. (para. [0028] and FIG. 1 teach SW7 sends a notification of the change in status, link-down state, to another network device, SW1. SW1 is in communication with an end station, Host 1, and the connection is referred to as a down-link. para. [0026] teaches that when a Host device receives a path failure notification, it switches to a second downstream link, $L1_2$, which effectively disables $L1_1$.)

Saskio fails to explicitly indicate sending notification of the change in status via an aggregate link communication link and continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device.

Mark teaches sending notification of the change in status via an aggregate link communication link (col. 6, lines 41-67 teach detecting a fault and propagating notification of the fault via a link aggregation interface.) and continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device. (col. 7, lines 22-36 teach re-distributing the flow of a failed link and maintaining the link aggregation interface.)

To provide the link aggregation interface of Mark would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (aggregating multiple physical links into a logical link) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., one skilled in the art would have recognized that link aggregation allows for the failover of physical routes.

6. Claims 2, 4, 6, 8, 11-12, 14, 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio in view of Mark and Jain (hereinafter Jain) (US 2002/0112072 A1).

Referring to claim 2,

Saskio and Mark teach the method of claim 1. Saskio and Mark fail to explicitly teach wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

Jain teaches intermediate nodes of network device receiving a notification of a change in status from a network device, and forwarding the notification to another device. (para. [0070] teaches when a node receives a fault notification it uses the label and forwards it to the appropriate node.)

To provide the propagation implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio and Mark, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by merely forwarding data and not consuming it, propagation efficiency is increased.

Referring to claim 4,

Saskio and Mark teach the method of claim 1. Saskio and Mark fail to explicitly teach wherein sending a message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user.

Jain teaches wherein sending a message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user. (**Note:** Examiner is construing the term "user" to be a network element. para. [0070] teaches each node contains a pre-configured multi-cast tree which specifies paths to all other nodes in the network. para. [0070] also teaches fault notifications use labels which designate destination nodes.)

To provide the label implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio and Mark, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by merely designating destination information in a packet label, fault notifications are able to reach their handlers.

Referring to claim 6,

Saskio and Mark teach the method of claim 1. Saskio and Mark fail to explicitly teach wherein the second switch is configured to forward a message containing the notification to one or more network devices specified by a user.

Jain teaches wherein sending a message from the second network device to one or more network devices in communication with the second network device comprises sending a message to one or more network devices specified by a user. (**Note:**

Examiner is construing the term "user" to be a network element. para. [0070] teaches each node contains a pre-configured multi-cast tree which specifies paths to all other nodes in the network. para. [0070] also teaches fault notifications use labels which designate destination nodes. para. [0070] further teaches fault notifications may take multiple hops, therefore a secondary node would also forward a notification based on label information.)

To provide the label implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio and Mark, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by merely designating destination information in a packet label, fault notifications are able to reach their handlers.

Referring to claim 8,

Saskio and Mark teach the method of claim 1. Saskio and Mark fail to explicitly teach wherein the plurality of end stations are specified by a user.

Jain teaches the end stations are specified by a network element. (**Note:** Examiner is construing the term "user" to be a network element. para. [0070] teaches the label of a failure notification specifies the end stations, because it is based on the label where the notification is sent. The failure notification is also generated by a network device.)

To provide the label implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio and Mark, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by merely designating destination information in a packet label, fault notifications are able to reach their handlers.

Referring to claim 11,

Claim 11 is a claim to one or more intermediate network devices configured to carry out the method of claim 2. Therefore claim 11 is rejected for the reasons set forth for claim 2.

Referring to claim 12,

Claim 12 is a claim to the first network device configured to carry out the method of claim 4. Therefore claim 12 is rejected for the reasons set forth for claim 4.

Referring to claim 14,

Claim 14 is a claim to a system implementing the method of claim 8. Therefore claim 14 is rejected for the reasons set forth for claim 8.

Referring to claim 16,

Saskio and Mark teach the system of claim 15. Saskio and Mark fail to explicitly teach wherein the plurality of end stations comprises at least one end station without a second network interface.

Jain teaches external equipment coupled to edge equipment via a network link (FIG. 1 and para. [0028]). The external equipment maps to the end station, and since it is not linked to another device, it only has a single network interface.

To provide the concept of including a single network interface device of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio and Mark, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by including end stations with single interfaces, the system becomes more compatible with a wider variety of devices.

Referring to claim 17,

Claim 17 is a claim to the first network device configured to carry out the method of claim 4. Therefore claim 17 is rejected for the reasons set forth for claim 4.

Referring to claim 18,

Saskio and Mark teach the system of claim 15. Saskio and Mark also teach the second network device configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second switch and a limited subset of the plurality of end stations (see rejection for claim 5).

Saskio and Mark fail to explicitly indicate the limited subset of the plurality of end stations are specified by a user.

Jain teaches the end stations are specified by a network element. (**Note:** Examiner is construing the term "user" to be a network element. para. [0074] teaches fault notifications cause nodes to re-reroute links, thereby disabling them. The fault notification was generated by a network device, as taught by para. [0067], and it is a subset of plurality of node connections.)

To provide the fault selection concept of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio and Mark, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by selectively disconnecting link connections, the network devices can choose to re-route failed links and leave functional links alone.

Referring to claim 21,

Saskio and Mark teach the aggregation device of claim 19. Saskio and Mark fail to explicitly teach wherein the operations comprise: obtaining a list of network devices specified by a user; and sending notification of the change in status to the network devices specified by the user.

Jain teaches each node contains a preconfigured multi-cast tree, which reads on a list of network devices specified by the user. (**Note:** Examiner is construing the term "user" to be a network element.) para. [0070] further teaches sending failure notification

to the destination specified by the label. The label is also generated by a network device.)

To provide the concept of obtaining a network list and sending notification of a change in status to a network device of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio and Mark, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by selectively sending notification of the change in status to a network device, less bandwidth is wasted.

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wing Ma whose telephone number is (571)270-5656. The examiner can normally be reached on Monday thru Friday, during the hours of 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing Ma/
Examiner, Art Unit 2456

/Jeffrey Pwu/
Supervisory Patent Examiner, Art Unit 2446

Notice of References Cited	Application/Control No. 11/398,519	Applicant(s)/Patent Under Reexamination TIRUMALAI ET AL.	
	Examiner Wing Ma	Art Unit 2456	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,956,824	10-2005	Mark et al.	370/242
*	B	US-7,453,900	11-2008	Robinson et al.	370/431
*	C	US-2007/0047578	03-2007	Abe et al.	370/468
*	D	US-2006/0227704	10-2006	Nakagawa et al.	370/217
*	E	US-2008/0016402	01-2008	Harel et al.	714/43
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	10/15/2008	07/10/2009							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	-							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
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	24	✓	✓							
	25	✓	✓							
	26	✓	✓							
	27	✓	✓							
	28	✓	✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

SEARCHED

Class	Subclass	Date	Examiner
709	238, 239	10/2008	WM
370	241, 244, 245, 248	10/2008	WM

SEARCH NOTES

Search Notes	Date	Examiner
Inventors' names searches on EAST	10/2008	WM
text search only on EAST - see search history printout	10/2008	WM
updated EAST search - see printout	07/2009	WM

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L6	10739	(switch$4 or failover or (fail near over)) and (path or route) and (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L7	377	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L8	21	("2002/0112072").URPN.	USPAT	OR	ON	2009/07/15 17:33
L10	4191	709/238.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L11	932	709/238.ccls. and notification	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L12	77	709/238.ccls. and notification and (failover or (fail near over))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L13	488	709/238.ccls. and notification and ((failover or (fail near over)) or switch)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L14	1065	709/239.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L28	377	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L29	21	("2002/0112072").URPN.	USPAT	OR	ON	2009/07/15 17:33

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L30	15	("4799215" | "5164939" | "5400329" | "5453980" | "5566170" | "5590366" | "5974467" | "6023471" | "6104700").PN. OR ("6452934").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/15 17:33
L31	9	("2003/0117950").URPN.	USPAT	OR	ON	2009/07/15 17:33
L32	11	US-6112249-$.DID. OR US-3920975-$.DID. OR US-5452115-$.DID. OR US-6373838-$.DID. OR US-5521958-$.DID. OR US-5864284-$.DID. OR US-5509027-$.DID. OR US-6311288-$.DID. OR US-6542934-$.DID. OR US-6657951-$.DID. OR US-6721269-$.DID.	US-PGPUB; USPAT	OR	ON	2009/07/15 17:33
L33	55	("20020191247" | "5049871" | "5093824" | "5412376" | "5590118" | "5590119" | "5596722" | "5646936" | "5687167" | "5737319" | "5781528" | "5805578" | "5805593" | "5835696" | "5881048" | "5881246" | "5884297" | "5920257" | "5933425" | "5959972" | "5987526" | "5995503" | "5999286" | "6011780" | "6041037" | "6041049" | "6047331" | "6075766" | "6075775" | "6097696" | "6097722" | "6115753" | "6130876" | "6130881" | "6134671" | "6148000" | "6154778" | "6163525" | "6222653" | "6259673" | "6272107" | "6275492" | "6282170" | "6292464" | "6301244" | "6304549" | "6324162" | "6347078" | "6370119" | "6400681" | "6430150" | "6457050" | "6463062" | "6504845").PN. OR ("7200104").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2009/07/15 17:33
L34	403	(L28 or L29 or L30 or L32 or L33 or L31) and user	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L35	356	(L28 or L29 or L30 or L32 or L33 or L31) and user and define$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33

L36	210	(L28 or L29 or L30 or L32 or L33 or L31) and (user same define$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L37	181	(L28 or L29 or L30 or L32 or L33 or L31) and (user WITH define$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L39	156	(L28 or L29 or L30 or L32 or L33 or L31) and (network near administrator)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L40	5	(network near administrator) same set same (failover or fail $over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L41	57	(network near administrator) same (failover or fail$over or fail near over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L42	91	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L43	15	link same failure same manually same configure	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L44	3	link same failure same administrator same list same notify	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L48	86	(failure near over) and administrator and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L49	45	link same failure same administrator same list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L50	177	link same failure same administrator same (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33

L68	1244	(link same failure same list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L69	377	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L70	270	L69 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L71	1495	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L72	823	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table) and ("370"/$$. ocls. or "709"/$$.ocls.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L73	2149	370/241.ocls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L74	582	370/244.ocls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L75	326	370/245.ocls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L76	943	370/248.ocls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L77	139	L74 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L78	780	(L73 or L74 or L75 or L76 or L77) and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33

L79	31	(L73 or L74 or L75 or L76 or L77) and list and ((fail near over) or failover or fail$over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L80	43	(L73 or L74 or L75 or L76 or L77) and (list or table) and ((fail near over) or failover or fail$over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L81	37	(L73 or L74 or L75 or L76 or L77) and (table) and ((fail near over) or failover or fail $over)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L86	377	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L87	1294	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L89	1035	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) and (failure) and (aggregat$5 near5 (link or path or stream)) and (notificat $5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L90	13	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L91	52	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L92	11	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error) same (aggregat$5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33

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L93	14	(upstream or (up adj stream) or (up adj link) or uplink or (up adj (stream or path or link))) same (failure or change or update or error or disconnect$5) same (aggregat $5 near5 (link or path or stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L94	68	(failure or change or update or error or disconnect$5) same (aggregate adj5 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L95	83	(failure or change or update or error or disconnect$5) same (aggregate near3 (link or path or stream or flow)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L96	78	L95 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L97	76	L95 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT	OR	ON	2009/07/15 17:33
L98	209	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near25 (aggregat$5 near5 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L99	174	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near20 (aggregat$5 near3 (link or path or stream or flow)) near20 (change or disconnect or failure or fail or update or error) near20 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33

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L100	165	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L101	19	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near15 (aggregat$5 near3 (link or path or stream or flow)) near15 (change or disconnect or failure or fail or update or error) near15 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) near15 (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L102	23	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) near25 (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L103	19	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) near25 (aggregat$5 near3 (link or path or stream or flow)) near25 (change or disconnect or failure or fail or update or error) near25 ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) near25 (notificat$5 or alert or message)	US-PGPUB; USPAT	OR	ON	2009/07/15 17:33

L104	15	L103 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L105	15	L103 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT	OR	ON	2009/07/15 17:33
L106	9	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 link) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) near3 up) or (uplink or upstream) or (up? link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT	OR	ON	2009/07/15 17:33
L107	137	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same ((link or stream or path or flow) or (uplink or upstream) or (up?link or up? stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L108	137	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) or (uplink or upstream) near3 up) or (up? link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33

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L109	14	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (((link or stream or path or flow) near3 up) or (uplink or upstream) or (up?link or up?stream)) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L110	137	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or update or error) same (notificat$5 or alert or message)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L111	14	L110 same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L112	14	L110 same (((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up)))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L114	70	(Send$4 or transmit$4 or transmiss$5 or communicat$4 or broadcast$5 or dispatch$4 or issu$4 or relay$4 or transf $5 or transport$4) same (aggregat$5 near3 (link or path or stream or flow)) same (change or disconnect or failure or fail or error) same ((uplink or upstream) or (up?link or up?stream) or ((link or stream or path or flow) near3 up))	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L115	57	L114 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/07/15 17:33
L117	15	L102 and (@ad<"20060405" or @rlad<"20060405")	US-PGPUB; USPAT	OR	ON	2009/07/15 17:33

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IPR2025-01088 - Page 400

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Dated: March 2, 2009 Signature: /Randol W. READ/ Reg. #43876 (Randol W. Read)

Docket No.: 1654.024762 (SEQ12792) (PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Tirumalai et al.	§	Confirmation No.: 7705
	§	
	§	Group Art Unit: 2456
Serial No.: 11/398,519	§	
	§	Examiner: W. Ma
Filed: April 5, 2006	§	
	§	
For: SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES	§	

RESPONSE TO OFFICE ACTION DATED OCTOBER 29, 2008

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

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action dated October 29, 2008, having a 1-month extended period for response set to expire on March 2, 2009, please enter this response and reconsider the claims pending in the application for reasons discussed below.

The Commissioner is hereby authorized to charge counsel's Deposit Account No. 20-0782/1654.024762 (SEQ12792)/RWR the amount of $130.00 for a 1-month extension, and for any fees, including excess claims fees, required to make this response timely and acceptable to the Office.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper. **Remarks** begin on page 8 of this paper.

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Quicker Connections - Exhibit 2011
IPR2025-01088 - Page 402

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AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for managing a network path between at least one end station and a network, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network; [[and]]

sending, by the first network device, via an aggregate link communication link between the first device and a second network device, notification of the change in status to [[a]] the second network device in communication with the end station via a first downstream communication link, the notification designed to cause the second network device to disable the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third switch and the end station; and

continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device.

2. (Original) The method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

3. (Original) The method of claim 1, wherein sending notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device.

4. (Original) The method of claim 1, wherein sending a message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user.

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5. (Original) The method of claim 1, wherein the second switch is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second switch and a plurality of end stations.

6. (Original) The method of claim 1, wherein the second switch is configured to forward a message containing the notification to one or more network devices specified by a user.

7. (Canceled)

8. (Original) The method of claim 1, wherein the plurality of end stations are specified by a user.

9. (Original) The method of claim 1, wherein the change in communication status comprises a loss in connectivity between the first network device and the network and the method further comprises:

detecting, by the first network device, recovery of connectivity between the first network device and the network; and

sending, by the first network device, notification of the recovery in status to the second network device; and

in response to receiving the notification of the recovery in status, enabling by the second switch, the first downstream communication link.

10. (Currently Amended) A network switching system, comprising:

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core; and

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device, via an aggregate link and, in response, disable a first downstream communication link between the second network device and an end station, wherein the aggregate link continues to carry traffic.

PAGE 4/11 * RCVD AT 3/2/2009 11:59:45 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/17 * DNIS:2738300 * CSID:7136234844 * DURATION (mm-ss):03-18

11. (Original) The system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device.

12. (Original) The system of claim 10, wherein the first network device is configured to send notification of the change in status to a plurality of network devices specified by a user.

13. (Original) The system of claim 10, wherein the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second switch and a plurality of end stations.

14. (Original) The system of claim 13, wherein the plurality of end stations are specified by a user.

15. (Currently Amended) A system, comprising:

a plurality of end stations;

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core; and

at least a second network device configured to receive, from the first network device, via an aggregate link, notification of the change in status from the first network device and, in response, disable first downstream communication links between first network interface devices on the plurality of end stations, thereby causing at least some of the plurality of end stations to switch to second downstream communications links between second network interface devices thereon and at least a third network device, wherein the aggregate link continues to carry traffic.

16. (Original) The system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface.

PAGE 5/11 * RCVD AT 3/2/2009 11:59:45 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/17 * DNIS:2738300 * CSID:7136234844 * DURATION (mm-ss):03-18

17. (Original) The system of claim 15, wherein the first network device is configured to send notification of the change in status to a plurality of network devices specified by a user.

18. (Original) The system of claim 15, wherein the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second switch and a limited subset of the plurality of end stations specified by a user.

19. (Currently Amended) An aggregation device comprising:

a processor; and

a computer readable medium containing instructions which, when executed by the processor, cause the aggregation device to perform operations comprising,

detecting a change in status of a first upstream communication link between the aggregation device and a network, [[and]]

sending notification of the change in status, via an aggregate link, to a network device in communication with an end station via a first downstream communication link, and

maintaining the aggregate link to continue to carry traffic.

20. (Original) The aggregation device of claim 19, wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network; and

sending notification of the recovery in status to the network device.

21. (Original) The aggregation device of claim 19, wherein the operations comprise:

obtaining a list of network devices specified by a user; and

sending notification of the change in status to the network devices specified by the user.

PAGE 6/11 * RCVD AT 3/2/2009 11:39:45 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/17 * DNIS:2738300 * CSID:7136234844 * DURATION (mm-ss):03-18

22. (Original) An access device, comprising:

a processor; and

a computer readable medium containing instructions which, when executed by the processor, cause the access device to perform operations comprising,

in response to receiving notification of a detected change in status between an upstream network device and a network, disabling at least one downstream communication link between the access device and at least one end station.

23. (Original) The access device of claim 22, wherein disabling at least one downstream communication link between the access device and at least one end station comprises disabling downstream communication links between the access device a plurality of end stations.

24. (Original) The access device of claim 22, wherein the operations further comprise receiving a user-specified list of the plurality of end stations to be disabled in response to receiving notification of the detected change in status from the upstream switching device.

25. (Original) A network device, comprising:

means for receiving notification of a detected change in status between an upstream network device and a network; and

means for disabling at least one downstream communication link between the access device and at least one end station.

26. (Original) The network device of claim 25, wherein the means for disabling at least one downstream communication link between the access device and at least one end station comprises an optical driver circuit.

27. (Original) The network device of claim 25, wherein the means for receiving notification of a detected change in status between an upstream network device and a

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network comprises means for receiving a message broadcast from the upstream network device.

28. (Currently Amended) A network device comprising:

means for detecting a change in status of a first upstream communication link between the network device and a network; [[and]]

means for sending notification of the change in status, via an aggregate link, to another network device in communication with an end station via a downstream communication link to cause the other network device to disable the downstream communication link; and

means for maintaining the aggregate link to continue to carry traffic.

REMARKS

This is intended as a full and complete response to the Office Action dated October 29, 2008, having a 1-month extended period for response set to expire on March 2, 2009. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-28 are pending in the application. Claim 7 is cancelled. Claims 1-6 and 8-28 remain pending following entry of this response.

Further, Applicants are not conceding in this application that those amended (or canceled) claims are not patentable over the art cited by the Examiner, as the present claim amendments and cancellations are only for facilitating expeditious prosecution of the claimed subject matter. Applicants respectfully reserve the right to pursue these (pre-amended or canceled claims) and other claims in one or more continuations and/or divisional patent applications.

Claim Rejections - 35 U.S.C. § 112

Claim 7 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claim 7 has been cancelled, thus eliminating the grounds for this rejection.

Claim Rejections - 35 U.S.C. § 102

Claims 1, 3, 5, 9-10, 14-15, 19-20, 22-23, 25 and 28 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Saksio* (U.S. Publication 2004/0105390).

Applicants respectfully traverse this rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal*

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Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

In the present case, the cited reference fails to teach each and every element of the claims. For example, *Saksio* fails to teach detecting a change in status of an upstream link, sending notification of the change in status via an via an aggregate link communication link between a first device and a second network device and continuing to carry traffic on the aggregate link after sending the notification of change in status to the second network device, as recited in claim 1.

In fact, fails to mention the term "aggregate link" at all and certainly does not mention continuing to carry traffic on an aggregate link after sending notification of a change in status of an upstream link on that aggregate link, as recited in the claims. Applicants respectfully submit that *Saksio* fails to teach an aggregate link or anything that may be reasonably construed to have the recited features of the claimed aggregate link.

Therefore, Applicants submit claim 1 and its dependents are allowable. Independent claims 10, 15, 19, 22, 25, and 28 also recite similar use of an aggregate link that are not taught in *Saksio*. Accordingly, Applicants submit these claims, as well as their depedents are also allowable and respectfully request withdrawal of this rejection.

Claim Rejections - 35 U.S.C. § 103

Claims 2, 4, 6-8, 11-12, 14, 16-18, 21, 24 and 26-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Jain* (U.S. Publication 2002/0112072).

These claims each depend, directly or indirectly from claims 1, 10, 15, 19, 22, or 25 which Applicants submit are allowable for reasons discussed above. Accordingly,

PAGE 10/11 * RCVD AT 3/2/2009 11:59:45 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/17 * DNIS:2738300 * CSID:7136234844 * DURATION (mm-ss):03-10

Applicants submit these claims are also allowable and respectfully request withdrawal of this rejection.

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Dated: March 2, 2009

Respectfully submitted, and
S-signed pursuant to 37 C.F.R. 1.4,

By: /Randol W. READ/ Reg. #43876
Randol W. Read
Registration No.: 43,876
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PAGE 11/11 * RCVD AT 3/2/2009 11:55:45 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-5/17 * DNIS:2738300 * CSID:7136234844 * DURATION (mm-ss):03-18

PATTERSON & SHERIDAN, LLP
ATTORNEYS AT LAW

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TO:	Mail Stop Amendment Examiner Ma
FAX NO:	571.273.8300
COMPANY:	USPTO
FROM:	Randol W. Read
PAGE(S) with cover:	11
ORIGINAL TO FOLLOW?	☐ YES ☒ NO

RESPONSE TO OFFICE ACTION DATED OCTOBER 29, 2008
WITH 1-MONTH EXTENSION

TITLE:	**System and Methodology for Fast Link Failover Based on Remote Upstream Failures**
U.S. SERIAL NO.:	**11/398,519**
FILING DATE:	**April 5, 2006**
INVENTOR:	**Tirumalai et al.**
EXAMINER:	**W. Ma**
GROUP ART UNIT:	**2456**
CONFIDENTIATION NO.:	**7705**

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/398,519	04/05/2006	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY ☐ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	28 minus 20 =	* 8	X $ =		OR	X $50 =	400
INDEPENDENT CLAIMS (37 CFR 1.16(h))	7 minus 3 =	* 4	X $ =			X $201 =	800
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1200

APPLICATION AS AMENDED – PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
AMENDMENT	03/02/2009									
	Total (37 CFR 1.16(i))	* 27	Minus	** 28	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 7	Minus	*** 7	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/GLENN BURNS JR/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/398,519	04/05/2006	Gokul S. Tatavolai	CISC/12792	7705

62147 7590 10/29/2008

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EXAMINER	
MA, WING	

ART UNIT	PAPER NUMBER
2456	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

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

Office Action Summary	Application No.	Applicant(s)	
	11/398,519	TIRUMALAI ET AL.	
	Examiner	Art Unit	
	Wing Ma	2456	

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 04/05/2006.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-28 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-28 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 05 April 2006 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Quicker Connections - Exhibit 2011
IPR2025-01088 - Page 415

DETAILED ACTION

1. Claims 1-28 are subject to examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 7,

Claim 7 recites "without interpreting the message." Examiner is unclear as to what this phrase means. Examiner will construe the limitation to be not consuming the path information.

Claim Rejections - 35 USC § 102

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

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 5, 9-10, 14-15, 19-20, 22-23, 25, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Saskio (hereinafter Saskio) (US 2004/0105390 A1).

Referring to claim 1,

Saskio teaches a method for managing a network path between at least one end station and a network, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network (para. [0028] and FIG. 1, teach a first network device, LAN switch SW7, and an upstream communication link, LSW7. para [0029] teaches the upstream communication is connected to router R1, which is connected to a network. para. [0034] and [0035], teach that each device of Saskio's system contains an Ethernet controller, which monitors the status of active links); and

sending, by the first network device, notification of the change in status to a second network device in communication with the end station via a first downstream communication link. (para. [0028] and FIG. 1 teach the first network device, SW7, sends a notification of the change in status, link-down state, to a second network device SW1. SW1 is in communication with an end station, Host 1, and the connection is referred to as a down-link.) the notification designed to cause the second network device to disable the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third switch and the end station (para. [0028] teaches the second network device, SW1, sends the link-down state to Host 1. para. [0026] teaches that when a Host device receives a path failure notification, it switches to a second downstream link, $L1_2$. This process is analogous to a failover. FIG. 1 teaches $L1_2$ is connected to a third switch, SW2.)

Referring to claim 3,

Saskio teaches the method of claim 1, wherein sending notification, by the first network device, of the change in status to the second network device comprises: sending a message from the first network device to one or more network devices in communication with the first network device. (para. [0028] teaches propagation of the link-down state to Host devices, which are network device in communication with the first network device, SW7.)

Referring to claim 5,

Saskio teaches the method of claim 1, wherein the second switch is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second switch and a plurality of end stations. (para. [0028] teaches if SW1 gets the link-down state, it sets the downstream links, $L1_1$ and $L2_1$, to the link-down state as well. $L1_1$ and $L2_1$ connect SW1 to the Host.)

Referring to claim 9,

Saskio teaches the method of claim 1, wherein the change in communication status comprises a loss in connectivity between the first network device and the network and the method further comprises:

detecting, by the first network device, recovery of connectivity between the first network device and the network (para. [0031] teaches the recovery detection's process is the same as the failure detection's; therefore the monitoring mechanism taught by para. [0034] and [0035] also applies to link-up situations);

and sending, by the first network device, notification of the recovery in status to the second network device (If the steps recited by para. [0028] are modified to reflect

the link-up situation, the first network device, SW7, would propagate notification of the recovery, link-up state, to the secondary network device, SW1.); and in response to receiving the notification of the recovery in status, enabling by the second switch, the first downstream communication link (para. [0028], reflecting the link-up situation, teaches the second switch propagates the link-up state to the Host, thereby enabling the first downstream communication link, $L1_1$.)

Referring to claim 10,

Claim 10 is at least a first network device and at least a second network device configured to carry out the method of claim 1. Therefore claim 10 is rejected for the reasons set forth for claim 1.

Referring to claim 13,

Claim 13 is a claim to a second network device configured to carry out the method of claim 5. Therefore claim 5 is rejected for the reasons set forth for claim 5.

Referring to claim 15,

Claim 15 is a claim to a system, comprising: a plurality of end stations; at least a first network device and at least a second network device configured to carry out the method of claim 1. Saskio teaches a plurality of end stations in FIG. 1 and para. [0028]. The remaining claim limitations are rejected for the reasons set forth for claim 1.

Referring to claim 19,

Saskio teaches an aggregation device comprising: a processor (para. [0033] teaches that each network device contains a CPU); and a computer readable medium containing instructions which (it is inherent the network devices contain some type of

medium and code to perform the steps of para. [0028] and [0035]), when executed by the processor, cause the aggregation device to perform operations comprising,

detecting a change in status of a first upstream communication link between the aggregation device and a network (para. [0028] and FIG. 1, teach an aggregation device, SW7, and an upstream communication link, LSW7. para [0029] teaches the upstream communication is connected to router R1, which is connected to a network. para. [0034] and [0035], teach that each device of Saskio's system contains an Ethernet controller, which monitors the status of active links),

and sending notification of the change in status to a network device in communication with an end station via a first downstream communication link (para. [0028] and FIG. 1 teach SW7 sends a notification of the change in status, link-down state, to a network device, SW1. SW1 is in communication with an end station, Host 1, and the connection is referred to as a down-link.).

Referring to claim 20,

Saskio teaches the aggregation device of claim 19, wherein the operations further comprises:

detecting recovery of connectivity between the aggregation device and the network (para. [0031] teaches the recovery detection's process is the same as the failure detection's; therefore the monitoring mechanism taught by para. [0034] and [0035] also applies to link-up situations);

and sending notification of the recovery in status to the network device. (If the steps recited by para. [0028] are modified to reflect the link-up situation, the aggregation

device, SW7, would propagate notification of the recovery, link-up state, to the network device, SW1.)

Referring to claim 22,

Saskio teaches an access device, comprising: a processor (para. [0033] teaches that each network device contains a CPU); and a computer readable medium containing instructions which (it is inherent the network devices contain some type of medium and code to perform the steps of para. [0028] and [0035]), when executed by the processor, cause the access device to perform operations comprising,

in response to receiving notification of a detected change in status between an upstream network device and a network, disabling at least one downstream communication link between the access device and at least one end station. (para. [0028] teaches the access device, SW1, receives a link-down state from the upstream device, SW7. In response, SW 1 sends the link-down state to Host 1. para. [0026] teaches that when a Host device receives a path failure notification, it switches to a second downstream link, $L1_2$, which effectively disables $L1_1$.)

Referring to claim 23,

Saskio teaches the access device of claim 22, wherein disabling at least one downstream communication link between the access device and at least one end station comprises disabling downstream communication links between the access device a plurality of end stations. (para. [0028] teaches if SW1 gets the link-down state, it sets the downstream links, $L1_1$ and $L2_1$, to the link-down state as well. $L1_1$ and $L2_1$ connect SW1 to the Host.)

Referring to claim 25,

Saskio teaches a network device, comprising:

means for receiving notification of a detected change in status between an upstream network device and a network (para. [0028] teaches the network device, SW1, receives a link-down state from the upstream network device, SW7.);

and means for disabling at least one downstream communication link between the access device and at least one end station. (SW 1 sends the link-down state to Host 1. para. [0026] teaches that when a Host device receives the link-down state, it switches to a second downstream link, $L1_2$, which effectively disables $L1_1$.)

Referring to claim 28,

Saskio teaches a network device comprising:

means for detecting a change in status of a first upstream communication link between the network device and a network (para. [0028] and FIG. 1, teach a network device, SW7, and an upstream communication link, LSW7. para [0029] teaches the upstream communication is connected to router R1, which is connected to a network. para. [0034] and [0035], teach that each device of Saskio's system contains an Ethernet controller, which monitors the status of active links.);

and means for sending notification of the change in status to another network device in communication with an end station via a downstream communication link to cause the other network device to disable the downstream communication link. (para. [0028] and FIG. 1 teach SW7 sends a notification of the change in status, link-down state, to another network device, SW1. SW1 is in communication with an end station,

Host 1, and the connection is referred to as a down-link. para. [0026] teaches that when a Host device receives a path failure notification, it switches to a second downstream link, $L1_2$, which effectively disables $L1_1$.)

Claim Rejections - 35 USC § 103

6. 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.

7. Claims 2, 4, 6, 7, 8, 11-12, 14, 16-18, 21, 24, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saskio in view of Jain (hereinafter Jain) (US 2002/0112072 A1).

Referring to claim 2,

Saskio teaches the method of claim 1. Saskio fails to explicitly teach wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

Jain teaches intermediate nodes of network device receiving a notification of a change in status from a network device, and forwarding the notification to another device. (para. [0070] teaches when a node receives a fault notification it uses the label and forwards it to the appropriate node.)

To provide the propagation implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed

elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by merely forwarding data and not consuming it, propagation efficiency is increased.

Referring to claim 4,

Saskio teaches the method of claim 1. Saskio fails to explicitly teach wherein sending a message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user.

Jain teaches wherein sending a message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user. (**Note:** Examiner is construing the term "user" to be a network element. para. [0070] teaches each node contains a pre-configured multi-cast tree which specifies paths to all other nodes in the network. para. [0070] also teaches fault notifications use labels which designate destination nodes.)

To provide the label implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change

in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by merely designating destination information in a packet label, fault notifications are able to reach their handlers.

Referring to claim 6,

Saskio teaches the method of claim 1. Saskio fails to explicitly teach wherein the second switch is configured to forward a message containing the notification to one or more network devices specified by a user.

Jain teaches wherein sending a message from the second network device to one or more network devices in communication with the second network device comprises sending a message to one or more network devices specified by a user. (**Note:** Examiner is construing the term "user" to be a network element. para. [0070] teaches each node contains a pre-configured multi-cast tree which specifies paths to all other nodes in the network. para. [0070] also teaches fault notifications use labels which designate destination nodes. para. [0070] further teaches fault notifications may take multiple hops, therefore a secondary node would also forward a notification based on label information.)

To provide the label implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than

predictable results to one of ordinary skill in the art at the time of the invention, i.e., by merely designating destination information in a packet label, fault notifications are able to reach their handlers.

Referring to claim 7,

Saskio teaches the method of claim 6, wherein the second network device is configured to forward the message without interpreting the message. (para. [0028] teaches the link-down state is "propagated" from SW1 to the hosts. Propagation does not implicate consumption.)

Referring to claim 8,

Saskio teaches the method of claim 1. Saskio fails to explicitly teach wherein the plurality of end stations are specified by a user.

Jain teaches the end stations are specified by a network element. (**Note:** Examiner is construing the term "user" to be a network element. para. [0070] teaches the label of a failure notification specifies the end stations, because it is based on the label where the notification is sent. The failure notification is also generated by a network device.)

To provide the label implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by

merely designating destination information in a packet label, fault notifications are able to reach their handlers.

Referring to claim 11,

Claim 11 is a claim to one or more intermediate network devices configured to carry out the method of claim 2. Therefore claim 11 is rejected for the reasons set forth for claim 2.

Referring to claim 12,

Claim 12 is a claim to the first network device configured to carry out the method of claim 4. Therefore claim 12 is rejected for the reasons set forth for claim 4.

Referring to claim 14,

Claim 14 is rejected for the reasons set forth for claim 8.

Referring to claim 16,

Saskio teaches the system of claim 15. Saskio fails to explicitly teach wherein the plurality of end stations comprises at least one end station without a second network interface.

Jain teaches external equipment coupled to edge equipment via a network link (FIG. 1 and para. [0028]). The external equipment maps to the end station, and since it is not linked to another device, it only has a single network interface.

To provide the concept of including a single network interface device of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a

packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by including end stations with single interfaces, the system becomes more compatible with a wider variety of devices.

Referring to claim 17,

Claim 17 is a claim to the first network device configured to carry out the method of claim 4. Therefore claim 117 is rejected for the reasons set forth for claim 4.

Referring to claim 18,

Claim 18 is a claim to the second network device configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second switch and a limited subset of the plurality of end stations specified by a user.

Jain teaches the end stations are specified by a network element. (**Note:** Examiner is construing the term "user" to be a network element. para. [0074] teaches fault notifications cause nodes to re-reroute links, thereby disabling them. The fault notification was generated by a network device, as taught by para. [0067], and it is a subset of plurality of node connections.)

To provide the fault selection concept of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than

predictable results to one of ordinary skill in the art at the time of the invention, i.e., by selectively disconnecting link connections, the network devices can choose to re-route failed links and leave functional links alone.

Referring to claim 21,

Saskio teaches the aggregation device of claim 19. Saskio fails to explicitly teach wherein the operations comprise: obtaining a list of network devices specified by a user; and sending notification of the change in status to the network devices specified by the user.

Jain teaches each node contains a preconfigured multi-cast tree, which reads on a list of network devices specified by the user. (**Note:** Examiner is construing the term "user" to be a network element.) para. [0070] further teaches sending failure notification to the destination specified by the label. The label is also generated by a network device.)

To provide the concept of obtaining a network list and sending notification of a change in status to a network device of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by selectively sending notification of the change in status to a network device, less bandwidth is wasted.

Referring to claim 24,

Saskio teaches the access device of claim 22. Saskio fails to explicitly teach wherein the operations further comprise receiving a user-specified list of the plurality of end stations to be disabled in response to receiving notification of the detected change in status from the upstream switching device.

Jain teaches storing an identification of all the possible points of failure for the network on para. [0068]. This is analogous to receiving a network device specified list of the plurality if end station links, needed to be disabled. (**Note:** Examiner is construing the term "user" to be a network element.) para. [0070] further teaches this is a response to a failure notification generated by a first device.)

To provide the concept of receiving a list of all failed links of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of a packet forwarding protocol) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., tracking all invalid links on a list allows for rerouting to be performed once.

Referring to claim 26,

Saskio teaches the network device of claim 25. Saskio fails to explicitly teach wherein the means for disabling at least one downstream communication link between the access device and at least one end station comprises an optical driver circuit.

Jain teaches the use of SONET over fiber-optic links (para. [0029]), which inherently requires an optical driver circuit.

To provide the SONET implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. use of fiber-optic links) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by changing the communication means from electronic to optic, the available bandwidth would be increased.

Referring to claim 27,

Saskio teaches the network device of claim 25. Saskio fails to explicitly teach wherein the means for receiving notification of a detected change in status between an upstream network device and a network comprises means for receiving a message broadcast from the upstream network device.

Jain teaches the means for receiving notification of a detected change in status between a network device and a network comprise means for receiving a message broadcast from another network device. (para. [0070] teaches forwarding the fault notification to all interfaces except the interface via which the notification was received, this step is analogous to a broadcast.)

To provide the broadcast implementation of Jain would have been obvious to one of ordinary skill in the art, in view of the teachings of Saskio, since all the claimed

elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods (i.e. broadcasting a fault message) with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., by broadcasting the link down state error information, propagation occurs more efficiently.

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wing Ma whose telephone number is (571)270-5656. The examiner can normally be reached on Monday thru Friday, during the hours of 9:00 AM to 5:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wing Ma/
Examiner, Art Unit 2456

/Ashok B. Patel/

Primary Examiner, Art Unit 2456

Notice of References Cited	Application/Control No. 11/398,519	Applicant(s)/Patent Under Reexamination TIRUMALAI ET AL.	
	Examiner Wing Ma	Art Unit 2456	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0105390	06-2004	Saksio, Mauri	370/245
*	B	US-2003/0179700	09-2003	Saleh et al.	370/216
*	C	US-2002/0152320	10-2002	Lau, Pui Lun	709/238
*	D	US-6,542,934	04-2003	Bader et al.	709/239
*	E	US-2002/0112072	08-2002	Jain, Sudhanshu	709/239
*	F	US-6,513,129	01-2003	Tentij et al.	714/4
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
	Wing Ma	2456

SEARCHED			
Class	Subclass	Date	Examiner
709	238, 239	10/2008	WM
370	241, 244, 245, 248	10/2008	WM

SEARCH NOTES		
Search Notes	Date	Examiner
Inventors' names searches on EAST	10/2008	WM
text search only on EAST - see search history printout	10/2008	WM

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11398519	TIRUMALAI ET AL.
	Examiner	Art Unit
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✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE									
Final	Original	10/15/2008									
	1	✓									
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	14	✓									
	15	✓									
	16	✓									
	17	✓									
	18	✓									
	19	✓									
	20	✓									
	21	✓									
	22	✓									
	23	✓									
	24	✓									
	25	✓									
	26	✓									
	27	✓									
	28	✓									

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1131	(link same failure same list)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:39
L2	331	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:40
L3	243	L2 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:40
L4	1342	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:40
L5	743	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and (list or table) and ("370"/$$.ccls. or "709"/$$.ccls.)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:41
L6	1981	370/241.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:46
L7	547	370/244.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:46
L8	302	370/245.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:47

L9	867	370/248.cds.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:47
L10	130	l7 and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:47
L11	688	(l6 or l7 or l8 or l9 or l10) and list	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 10:48
L17	38	("4076961" | "4577182" | "4718079" | "4856047" | "4887290" | "4910763" | "4995035" | "5002387" | "5005122" | "5125021" | "5128979" | "5134644" | "5426773" | "5448723" | "5454024").PN. OR ("6112249").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/10/22 11:00
S6	9357	(switch$4 or failover or (fail near over)) and (path or route) and (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/16 09:39
S7	331	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/16 09:40
S9	14	("4799215" | "5164939" | "5400329" | "5453980" | "5566170" | "5590366" | "5974467" | "6023471" | "6104700").PN. OR ("6452934").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/10/16 16:27

S10	3772	709/238.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/16 18:26
S11	829	709/238.ccls. and notification	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/16 18:26
S13	437	709/238.ccls. and notification and ((failover or (fail near over)) or switch)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/16 18:27
S14	963	709/239.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/16 18:30
S22	11	US-6112249-$.DID. OR US-3920975-$.DID. OR US-5452115-$.DID. OR US-6373838-$.DID. OR US-5521958-$.DID. OR US-5864284-$.DID. OR US-5509027-$.DID. OR US-6311288-$.DID. OR US-6542934-$.DID. OR US-6657951-$.DID. OR US-6721269-$.DID.	US-PGPUB; USPAT	OR	ON	2008/10/17 18:49
S25	55	("20020191247" | "5049871" | "5093824" | "5412376" | "5590118" | "5590119" | "5596722" | "5646936" | "5687167" | "5737319" | "5781528" | "5805578" | "5805593" | "5835696" | "5881048" | "5881246" | "5884297" | "5920257" |	US-PGPUB; USPAT; USOCR	OR	ON	2008/10/17 19:27

		"5933425" | "5959972" | "5987526" | "5995503" | "5999286" | "6011780" | "6041037" | "6041049" | "6047331" | "6075766" | "6075775" | "6097696" | "6097722" | "6115753" | "6130876" | "6130881" | "6134671" | "6148000" | "6154778" | "6163525" | "6222653" | "6259673" | "6272107" | "6275492" | "6282170" | "6292464" | "6301244" | "6304549" | "6324162" | "6347078" | "6370119" | "6400681" | "6430150" | "6457050" | "6463062" | "6504845").PN. OR ("7200104").URPN.				
S28	331	(switch$4 or failover or (fail near over)) same (path or route) same (notification) and administrator	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/21 13:53
S30	14	("4799215" | "5164939" | "5400329" | "5453980" | "5566170" | "5590366" | "5974467" | "6023471" | "6104700").PN. OR ("6452934").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2008/10/21 13:53

S32	11	US-6112249-$.DID. OR US-3920975-$.DID. OR US-5452115-$.DID. OR US-6373838-$.DID. OR US-5521958-$.DID. OR US-5864284-$.DID. OR US-5509027-$.DID. OR US-6311288-$.DID. OR US-6542934-$.DID. OR US-6657951-$.DID. OR US-6721269-$.DID.	US-PGPUB; USPAT	OR	ON	2008/10/21 13:53
S33	55	("20020191247" | "5049871" | "5093824" | "5412376" | "5590118" | "5590119" | "5596722" | "5646936" | "5687167" | "5737319" | "5781528" | "5805578" | "5805593" | "5835696" | "5881048" | "5881246" | "5884297" | "5920257" | "5933425" | "5959972" | "5987526" | "5995503" | "5999286" | "6011780" | "6041037" | "6041049" | "6047331" | "6075766" | "6075775" | "6097696" | "6097722" | "6115753" | "6130876" | "6130881" | "6134671" | "6148000" | "6154778" | "6163525" | "6222653" | "6259673" |	US-PGPUB; USPAT; USOCR	OR	ON	2008/10/21 13:53

		"6272107" | "6275492" | "6282170" | "6292464" | "6301244" | "6304549" | "6324162" | "6347078" | "6370119" | "6400681" | "6430150" | "6457050" | "6463062" | "6504845").PN. OR ("7200104").URPN.				
S34	361	(S28 or S29 or S30 or S32 or S33 or S31) and user	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/21 13:53
S35	317	(S28 or S29 or S30 or S32 or S33 or S31) and user and define$3	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/21 13:53
S36	187	(S28 or S29 or S30 or S32 or S33 or S31) and (user same define $3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/21 14:08
S37	162	(S28 or S29 or S30 or S32 or S33 or S31) and (user WITH define $3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/21 14:09
S39	133	(S28 or S29 or S30 or S32 or S33 or S31) and (network near administrator)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/21 15:08
S42	79	link same failure same administrator same specif$4	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 01:33
S50	163	link same failure same administrator same (list or table)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2008/10/22 05:25

S66	18	US-6(721269-$.DID. OR US-6725401-$. DID. OR US-6604208-$.DID. OR US-6530032-$.DID. OR US-6513129-$.DID.) and broadcast	US-PGPUB; USPAT	OR	ON	2008/10/22 06:22

10/22/2008 11:17:47 AM
C:\Documents and Settings\wma\My Documents\EAST\Workspaces\11398519.wsp

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BIB DATA SHEET

CONFIRMATION NO. 7705

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/398,519	04/05/2006 RULE	709	2456	CISC/12792

APPLICANTS

Gokul S. Tirumalai, San Jose, CA;
Albert Hyde Mitchell, San Jose, CA;

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

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

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

05/05/2006

Foreign Priority claimed	35 USC 119(a-d) conditions met	Verified and Acknowledged	Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ Yes ☑ No	☐ Yes ☑ No	/WING MA/ Examiner's Signature	Initials	CA	8	28	7

ADDRESS

PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX 77056-6582
UNITED STATES

TITLE

System and methodology for fast link failover based on remote upstream failures

FILING FEE RECEIVED		
2200	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

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APPLICATION NUMBER	FILING OR 371(c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/398,519	04/05/2006	Gokul S. Tirumalai	CISC/12792

CONFIRMATION NO. 7705

62147
PATTERSON & SHERIDAN, LLP/CISC
3040 POST OAK BLVD.
SUITE 1500
HOUSTON, TX77056-6582

Title: System and methodology for fast link failover based on remote upstream failures

Publication No. US-2007-0237085-A1
Publication Date: 10/11/2007

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Pre-Grant Publication Division, 703-605-4283

PTO/SB/122 (04-05)
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Application

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

Application Number	11/398,519
Filing Date	4/5/06
First Named Inventor	Tirumalai et al.
Art Unit	2141
Examiner Name	Unassigned
Attorney Docket Number	CISC/12792

Please change the Correspondence Address for the above-identified application to:

☒ The address associated with Customer Number: 62147

OR

☐ **Firm or Individual Name**

Address

City	**State**	**Zip**
Country		
Telephone 713.623.4844	**Email** rread@pattersonsheridan.com	

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I am the :

☐ Applicant/Inventor.

☐ Assignee of record of the entire interest. Certificate under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ Attorney or agent of record. Registration Number 43,876.

☐ Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Registration Number _____.

Signature

Typed or Printed Name Randol W. Read

Date May 22, 2006	Telephone 713.623.4844

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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466711_1.DOC

Electronic Acknowledgement Receipt

EFS ID:	1053296
Application Number:	11398519
Confirmation Number:	7705
Title of Invention:	System and methodology for fast link failover based on remote upstream failures
First Named Inventor:	Gokul S. Tirumalai
Correspondence Address:	Randol W. Read Patterson & Sheridan, LLP Suite 1500 3040 Post Oak Blvd. Houston TX 77056 US 713-623-4844 -
Filer:	Randol Read/Esther Marques
Filer Authorized By:	Randol Read
Attorney Docket Number:	CISC/12792
Receipt Date:	22-MAY-2006
Filing Date:	05-APR-2006
Time Stamp:	11:24:23
Application Type:	Utility
International Application Number:	

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1	Change of Address	CISC12792_ChgCorrAdd.pdf	47321	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	47321		

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.

PTO/SB/05 (05-05)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office. U.S. DEPARTMENT OF COMMERCE
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))

Attorney Docket No.	CISC/12792
First Inventor	Tirumalai et al.
Title	System and Methodology for Fast Link Failover Based on Remote Upstream Failures
Express Mail Label No.	EV 668243885 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ **Fee Transmittal Form (e.g., PTO/SB/17)**
   (Submit an original and a duplicate for fee processing)
2. ☐ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☒ **Specification** [*Total Pages* 18]
   Both the claims and abstract must start on a new page
   (For information on the preferred arrangement, see MPEP 608.01(a))
4. ☒ **Drawing(s)** *(35 U.S.C.113)* [*Total Sheets* 8]
5. **Oath or Declaration** [*Total Sheets* ___]
   a. ☐ Newly executed (original or copy)
   b. ☐ Copy from a prior application (37 CFR 1.63 (d))
   (for a continuation/divisional with Box 18 completed)
   i. ☐ DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
   (if applicable, items a.-c. are required)
   a. Computer Readable Form (CRF)
      i. ☐ Computer Readable Form (CRF)
      ii. ☐ Transfer Request (37 CFR 1.821(e))
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

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P.O. Box 1450
Alexandria VA 22313-1450

ACCOMPANYING APPLICATIONS PARTS

9. ☒ **Assignment Papers** (cover sheet & document(s))
   Name of Assignee Cisco Technology, Inc.
   3 pages
10. ☐ **37 C.F.R. 3.73(b) Statement** ☐ **Power of Attorney**
    (when there is an assignee)
11. ☐ **English Translation Document** *(if applicable)*
12. ☐ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of foreign patent documents, publications & other information
13. ☐ **Preliminary Amendment**
14. ☒ **Return Receipt Postcard** (MPEP 503)
    (Should be specifically itemized)
15. ☐ **Certified Copy of Priority Document(s)**
    (if foreign priority is claimed)
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☒ Other: Combined Declaration and Power of Attorney,
    3 pages

113006 U.S. PTO
11/398519

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*
☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) *of prior application No:* ____ / ____
Prior application information: *Examiner* ____ *Art Unit:* ____

19. CORRESPONDENCE ADDRESS

☐ The address associated with Customer Number [ ] OR ☒ Correspondence address below

Name	Randol W. Read				
Address	Patterson & Sheridan, LLP 3040 Post Oak Blvd., Suite 1500				
City	Houston	*State*	TX	*Zip Code*	77056
Country	USA	*Telephone*	713.623.4844	*Email address*	rread@pattersonsheridan.com

Signature		*Date*	April 5, 2006
Name (Print/Type)	Randol W. Read	*Registration No. (Attorney/Agent)*	43,876

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL for FY 2006

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT	($) 2,200.00

Complete If Known	
Application Number	Unassigned
Filing Date	Herewith
First Named Inventor	Tirumalai et al.
Examiner Name	Unassigned
Art Unit	Unassigned
Attorney Docket No.	CISC/12792

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify) :

☒ Deposit Account Deposit Account Number: 20-0782/CISC/12792/RWR Deposit Account Name: Patterson & Sheridan, LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☒ Charge any additional fee(s) or underpayments of fee(s) Under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee($)	Fee($)	Fee($)	Fee($)	Fee($)	Fees Paid ($)
Utility	300	150	500	250	200	100	1000
Design	200	100	100	50	130	65	____
Plant	200	100	300	150	160	80	____
Reissue	300	150	500	250	600	300	____
Provisional	200	100	0	0	0	0	____

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		Extra Claims		Fee($)		Fee Paid ($)
28	-20 or HP=	8	x	50	=	400

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims		Extra Claims		Fee($)		Fee Paid ($)
7	- 3 or HP=	4	x	200	=	800

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	
Fee ($)	Fee Paid ($)
____	____

3. APPLICATION SIZE FEE

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26	- 100 =	____	/ 50 =	____	(round up to a whole number) x		=	____

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UNITED STATES PATENT APPLICATION FOR:

SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES

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CERTIFICATION OF MAILING UNDER 37 C.F.R. 1.10

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5 April 2006
Date of Signature

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SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention generally relates to management of switched computer networks and, more particularly, to propagating detected changes in upstream connectivity to downstream devices.

Description of the Related Art

[0002] A computer network generally includes a number of devices, including switches, routers and hubs, connected so as to allow communication among the devices. The devices within a network may be generally categorized into two classes: end stations connected along the edge of a network and network devices. End stations typically include devices that primarily supply or consume information, such as workstations, desktop PCs, printers, servers, hosts, fax machines, and other such devices. Network devices typically include devices that primarily transfer information between other devices (e.g., between end stations and other network devices), such as gateways, switches, routers, and other such devices. In other words, network devices generally provide connectivity between end stations and the network core.

[0003] FIG. 1 illustrates an exemplary network 100 in which a plurality of end stations 110 are connected to a network core 120 via multiple layers of switches 130. In some cases, the network may be modeled in accordance with the Open System Interconnection (OSI) model, which defines a networking framework for implementing protocols in multiple (seven) layers. The switches 130 may represent Data Link or "Layer 2" layer switching, that encodes and decodes data packets into bits. Layer 2 switches implement the network transmission protocol and handle errors in the physical layer (Ethernet, optics, etc.), flow control and frame

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synchronization. In the illustrated example, switches 130 include aggregation switches 132 (SW1 and SW2), and access switches 134 (SW3 and SW4). The end stations 110 may be file servers, data servers, workstations, personal computers (PCs), and the like.

[0004] In an effort to provide greater reliability, such networks are often designed to provide redundant Layer 2 connectivity between end stations 110 and the network core 120. To this end, at least some end stations 110 may each have multiple network interface cards NICs 112 (or other type network interface/adapter), allowing the end stations 110 to connect to the network through primary links/connections (L_P) and secondary links (L_S). For example, the end stations may be configured to connect to the network through a primary path (via SW3 and SW1) by default and switch (or "failover") to a secondary path (via SW4 and SW2) if a connectivity problem is detected in the primary path, such as a loss of connectivity to a link L_C between switch SW1 and the network core 120.

[0005] In conventional systems, end stations do not become aware of a change in upstream connectivity until they discover it on their own. For example, end stations may only discover a loss of upstream connectivity after experiencing consistent protocol packet timeouts. As a result, after a loss in network connectivity on the primary path, end stations may not immediately switch from their primary path to their alternative path despite a loss in network connectivity on the primary path, which may degrade network performance.

[0006] Therefore, there is a need for techniques that cause end stations to switch over to alternative paths more rapidly in response to remote upstream connectivity changes.

SUMMARY OF THE INVENTION

[0007] Embodiments of the present invention provide techniques for propagating changes in upstream connectivity downstream to connected end stations.

[0008] One embodiment provides a method for managing a network path between at least one end station and a network. The method generally includes detecting, by a first switching device, a change in status of a first upstream communication link between the first switching device and the network, sending, by the first switching device, notification of the change in status to a second switching device in communication with the end station via a first downstream communication link, and, in response to receiving the notification, disabling by the second switch, the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third switch and the end station.

[0009] Another embodiment provides a network switching system generally including at least a first switching device and at least a second switching device. The first switching device is generally configured to detect a change in status of a first upstream communication link between the first switching device and a network core. The second switching device is generally configured to receive, from the first switching device, notification of the change in status from the first switching device and, in response, disable a first downstream communication link between the second switching device and an end station. For some embodiments, their may be one or more intermediate switching devices, between the first and second switching devices, that receive the notification of the change in status from the first switching device and propagate the notification (possibly through other intermediate switches) to the second switching device that ultimately disables the first downstream communication link with the end station.

[0010] Another embodiment provides a system generally including a plurality of end stations, at least a first switching device, and at least a second switching device. The first switching device is generally configured to detect a change in status of a first upstream communication link between the first switching device and a network core. The second switching device is generally configured to receive, from the first switching device, notification of the change in status from the first switching device and, in response, disable first downstream communication links between first network interface devices on the plurality of end stations, thereby causing at least some of the plurality of end stations to switch to second downstream

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communications links between second network interface devices thereon and at least a third switching device.

[0011] Another embodiment provides an aggregation switching device generally including a processor and a computer readable medium containing instructions which, when executed by the processor, cause the switching device to perform operations. The operations generally include detecting a change in status of a first upstream communication link between the first switching device and a network and sending notification of the change in status to a second switching device in communication with an end station via a first downstream communication link.

[0012] Another embodiment provides an access switching device generally including a processor and a computer readable medium containing instructions which, when executed by the processor, cause the switching device to perform operations. The operations generally include in response to receiving, from an upstream switching device, notification of a detected change in status between the first switching device and a network, disabling at least one downstream communication link between the access switching device and at least one end station.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] So that the manner in which the above recited features of the present invention can be understood in detail, a more particular description of the invention, briefly summarized above, may be had by reference to embodiments, some of which are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrate only typical embodiments of this invention and are therefore not to be considered limiting of its scope, for the invention may admit to other equally effective embodiments.

[0014] FIG. 1 illustrates an exemplary multilayer switched network.

[0015] FIG. 2 is a flow diagram of exemplary operations for propagating upstream connectivity information to a downstream device, in accordance with embodiments of the present invention.

[0016] FIGs. 3A-3D illustrate propagating, and responding to, changes in upstream connectivity, in accordance with one embodiment of the present invention.

[0017] FIG. 4 illustrates the routing of traffic through links maintained between access and aggregation devices, in accordance with one embodiment of the present invention.

[0018] FIG. 5 is a flow diagram of exemplary operations for propagating changes in connectivity, in accordance with embodiments of the present invention.

DETAILED DESCRIPTION

[0019] Embodiments of the present invention generally provide methods and apparatus for propagating changes in upstream connectivity downstream. For some embodiments, an upstream switch connected to a network core may detect a change in connectivity and, in response, send a message indicating the change to a downstream switch connected to an end station. In response to the message, the downstream switch may disable a link with end station. Disabling the link may cause the end station to promptly switch (fail over) to a different link, in an effort to establish an alternate path to the network. Further, by maintaining the link between the intermediate or downstream switch and the upstream device, network traffic routed through that switch need not be re-routed and the link can continue to carry traffic destined for other networks.

[0020] Methods and apparatus for managing a multilayer switching path are described. In the following description, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be appreciated, however, to one skilled in the art that the present invention may be practiced without these specific details. In other instances, well-known structures

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and devices are shown in block diagram form (absent specific details) in order to avoid unnecessarily obscuring the present invention.

[0021] To facilitate understanding, the following terms, as used herein, have the following meaning. As used herein, the term end station generally refers to any device capable of a network connection via one or more network interfaces and need not necessarily reside at an edge of a network. Examples of end stations include a server, PC, fax machine, printer, or the like. The term switch (or switching device) generally refers to any type device that switches network traffic, such as a Layer 2 switch (per the OSI model) that switches Ethernet traffic. The term access device generally refers to a network element that is connected to one or more end stations. The term aggregation device generally refers to a network element that connects to one or more access devices. The term upstream generally refers to a path (or device along a path) in the direction from an end station towards the core of the network. The term downstream generally refers to a path (or device along a path) in the direction from the core of the network to the edge (e.g., towards an end station). The terms link or connection may be used herein interchangeably and generally refer to any connection between devices, such as a Layer 2 network connection between two devices. The term failure generally refers to a loss of connectivity to a link from a device, regardless of the particular cause, including if the link is intentionally disabled by another device.

PROPAGATING (DOWNSTREAM) CHANGES IN UPSTREAM CONNECTIVITY

[0022] Embodiments of the present invention allow changes in upstream connectivity to be communicated downstream, thereby allowing an end station to quickly make decisions regarding which paths to use to the network. The techniques described herein may be implemented, for example, as software methods (e.g., executable instructions residing in memory) running on network devices (e.g., aggregation devices and/or access devices) that are directly or indirectly connected to a network interface of an end station. As will be described herein, the indirectly connected switches may track the link status on upstream interfaces and communicate any change in connectivity (loss/restoration) to a set of

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downstream interfaces, for example, by sending a message. Such a message may be intercepted by downstream network devices, such as access switches directly connected to network interfaces of the end stations. In response, these switches may take appropriate action based on the message communicated, for example, disabling corresponding active links if the message indicates loss of connectivity. This allows conventional end stations with redundant network interfaces to detect that their primary connection is down and to automatically switch over to their secondary network interfaces.

[0023] FIG. 2 is a flow diagram of exemplary operations for propagating upstream connectivity information to a downstream device, in accordance with embodiments of the present invention. For some embodiments, the operations 200 may be collectively performed by a combination of switches, such as aggregation switches connected to a network core and access switches connected to an end station. To illustrate the potential operation of the switching devices, the operations 200 may be described with reference to network diagrams of FIGs. 3A-3D, which illustrate the status of different links in the network as connectivity changes therein.

[0024] To facilitate understanding, only a limited portion of the network shown in FIG. 1 is illustrated in FIGs. 3A-3D. However, those skilled in the art will recognize that the concepts described herein may be advantageously scaled to accommodate any size and type of switching network having any number of multiple switching layers (e.g., any combination of aggregate switches, access switches, routers, and any other types of network elements), with potentially hundreds of end stations.

[0025] The operations begin, at step 202, by detecting a change in upstream connectivity between a first switch and a network core. Referring to FIG. 3A, the exemplary network shown includes a layer of aggregation switches 332 SW1 and SW2 and a layer of access switches 334 SW3 and SW4. As illustrated, a primary path between end stations 110 and the network core 120 may be established through SW3 and SW1 via first network interface cards 112 (NIC1). As illustrated in FIG. 3, however, a loss of connectivity between SW1 and the network core may occur for any number of reasons (e.g., device failure, such as failure of a laser in a

fiber optic connection, failure in the physical connection/cable, or loss of power). For some embodiments, switches SW3 may have downstream connections to both end stations and other switches, not just to one another.

[0026] At step 204, the change in connectivity is communicated to a second switch located downstream between the first switch and an end station. As further illustrated in FIG. 3B, the first switch SW1 may communicate the change in connectivity (a loss in this example), to second switch SW3 via a change in connectivity message. As will be described in greater detail below, the contents of the message may vary, as may the recipients. For some embodiments, a user (e.g., network administrator) may be able to configure the manner in which the message is sent, for example, broadcasting to all devices to respond/ignore or only sending the message to identified devices (e.g., along a path to an end device).

[0027] At step 206, a downstream connection between the second switch and the end station is modified in response to the change in connectivity. For example, as illustrated in FIG. 3C, SW3 may decipher the message from SW1 and, in response, disable (bring down) the link between the primary NICs of the end stations 110. Exactly how the link is disabled may depend on the corresponding type of physical medium. For example, for an Ethernet connection this may entail simply ceasing to transmit a signal (e.g., by disabling a laser for a fiber optic Ethernet connection or bringing down the voltage level for a copper Ethernet connection).

[0028] In any case, end stations equipped with redundant network interfaces may be configured to react to such a loss in connectivity to a primary link by automatically switching (or "failing over") to a secondary interface in order to establish an alternate path to the network. Thus, in the illustrated example as shown in FIG. 3D, end stations 110 may automatically switch over to secondary NICs to establish an alternate path to the core network via SW4 and SW2.

[0029] For some embodiments, should the connectivity between SW1 and the network core be restored, switch SW1 may forward another message to SW3 (and/or other connected devices) indicating such. In response to the message, SW3

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may bring the link with the connected end station back up, restoring it to an operational state. In response to detecting that the primary link has been brought back up, one or more of the end stations 110 may switch back to the primary connections immediately, or at any appropriate later time, for example, depending on the particular circumstance.

[0030] By propagating an upstream Layer 2 connectivity failure in this manner, switchover times for the end stations may be reduced. In other words, end stations may switchover much more rapidly than in conventional systems that rely on waiting for a higher layer protocol running on these end stations to detect that its link to the network is not working properly. These higher layer protocols typically rely upon timers to fail, and also have to account for network congestion to avoid erroneously detecting "false" failures.

[0031] In addition to improving switchover times, the techniques described herein also allow upstream switches (e.g., SW1 and SW2) to maintain their interfaces to downstream devices (e.g., SW3 and SW4). This is advantageous in that other network traffic may continue to pass through the interface from access devices to aggregation devices and allows multiple networks to be active that would otherwise be inactive if this link were brought down. These links (L_X) may continue to carry traffic for management, as well as other local network traffic.

CONFIGURING UPSTREAM FAILURE PROPAGATION

[0032] The particular manner in which changes in upstream connectivity are propagated down to an end station may vary, depending on a particular implementation. As an example, the particular format and contents of the message sent by an upstream device to communicate a change in upstream connectivity may vary. For some embodiments, the contents of the message may include at least an indication of the detected change (e.g., loss or restoration), as well as any other suitable information, such as identification of an intended recipient (destination). The type and/or number of devices to receive a message indicating a change in

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connectivity may also vary depending on a particular implementation and, for some embodiments, may be configurable by a user (e.g., a network administrator).

[0033] The contents of messages may vary with different embodiments and different types of messages may be sent (e.g., broadcast to many devices or sent directly to identified recipients). In any case, messages may include a common set of fields including, but not limited to one or more of the following: 1) a Switch identifier (source of the msg); 2) a Msg_type/Action_type (e.g., Link Lost, Link Restored, or link removed from being monitored, for example, if a user reconfigures a link from being the cause of downstream interfaces being brought down); 3) an Upstream Link Identifier (which may be at least be unique on the source switch); 4) a SW Version of some type; 5) a msg counter for a number of msgs of this type sent; and 6) a time stamp of action occurrence. For some embodiments, the Upstream Link Identifier may be a field in the message that identifies the upstream interface. As an alternative, the message may include an identifier of a group that is effected by the change in connectivity of an upstream interface. The upstream interface may be a single physical interface, or it could be a logical grouping of physical interfaces.

[0034] The particular contents of a message may depend on the particular type of message being sent. For some embodiments, there may be at least two types of messages, for example, broadcast or direct, with each having different contents. Regardless of the implementation, msg contents would most likely contain a common set of fields, such as those listed above. The field contents, however, would likely change depending up on the action and the source switch.

[0035] As illustrated in FIG. 4, for some embodiments, a message may be broadcast to multiple devices connected to a switch detecting a change in communication status. How the message is treated may depend on the particular recipient. As an example, a switch, such as SW3 in a downstream path between the switch sending the message may intercept the message and respond accordingly, while other devices may ignore the message or forward it on to other devices connected thereto.

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[0036] For some embodiments, a user may be able to configure a particular set of downstream interfaces that should be brought down upon receiving a message indicating a loss of upstream connectivity. For example, as illustrated in FIG. 5, a user may be able to define a first group 510_1 of end stations with primary interfaces connected to a switch SW3 that should be brought down in the event that connectivity between SW1 and the network core (L_C) is lost. This grouping may define a logical connection between these end stations and an upstream interface. As a result, in response to detecting a change in connectivity of the upstream interface, switch SW3 may disable the end stations in the first group 510_1. In response to the primary interface being disabled, the end stations may automatically switch over to secondary interfaces connected to SW4.

[0037] A second group of end stations 510_2 may not have a secondary NIC and, thus should not be brought down in the event that upstream connectivity is lost. Such end stations (e.g., older "legacy" end stations) may not have the capability to switch over from a primary to secondary interface. As such, the downstream interfaces connecting to such end stations may be configured to be maintained (not brought down) by the user in the case of an upstream link losing connectivity. As illustrated, end stations in Group 2 may continue to use the same interface with SW3 and their traffic may be routed to the network core via a redundant link (L_Z) between SW1 and SW2 to reach the core. While the bandwidth of the redundant link L_Z may not be as high as the direct link to the core (link L_C) and may not be meant to carry sustained traffic to the core, it may still allow the end station to remain active.

[0038] For some embodiments, the techniques described herein may be configurable by a user, for example, via a user command to run automatically, on demand, or be disabled. In some cases, a user may be allowed to define logical grouping of upstream interfaces to downstream interfaces. Further, for some embodiments, in addition to, or as an alternative to selecting groups, the techniques described herein could be configurable to be enabled in a variety of ways with varying scope, such as on a "per port" basis, via a particular connection (e.g., a VLAN), or switch-wide.

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CONCLUSION

[0039] By propagating upstream connectivity losses detected by an upstream device to a downstream device connected, the downstream device may bring down a connection with an end station. Bringing down the connection may result in the end station promptly switching over to a redundant connection. Further, by maintaining the link between the intermediate switch and the upstream device, network traffic routed therethrough need not be re-routed.

[0040] While the foregoing is directed to embodiments of the present invention, other and further embodiments of the invention may be devised without departing from the basic scope thereof, and the scope thereof is determined by the claims that follow.

What is claimed is:

1. A method for managing a network path between at least one end station and a network, comprising:

detecting, by a first network device, a change in status of a first upstream communication link between the first network device and the network; and

sending, by the first network device, notification of the change in status to a second network device in communication with the end station via a first downstream communication link, the notification designed to cause the second network device to disable the first downstream communication link in a manner that causes the end station to failover to a second downstream link between a third switch and the end station.

2. The method of claim 1, wherein one or more intermediate network devices, between the first and second network devices, receives the notification of the change in status from the first network device and forwards the notification to the second network device.

3. The method of claim 1, wherein sending notification, by the first network device, of the change in status to the second network device comprises:

sending a message from the first network device to one or more network devices in communication with the first network device.

4. The method of claim 1, wherein sending a message from the first network device to one or more network devices in communication with the first network device comprises sending a message to one or more network devices specified by a user.

5. The method of claim 1, wherein the second switch is configured to disable, in response to receiving the notification, a plurality of downstream communication links between the second switch and a plurality of end stations.

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6. The method of claim 1, wherein the second switch is configured to forward a message containing the notification to one or more network devices specified by a user.

7. The method of claim 6, wherein the second network device is configured to forward the message without interpreting the message.

8. The method of claim 1, wherein the plurality of end stations are specified by a user.

9. The method of claim 1, wherein the change in communication status comprises a loss in connectivity between the first network device and the network and the method further comprises:

detecting, by the first network device, recovery of connectivity between the first network device and the network; and

sending, by the first network device, notification of the recovery in status to the second network device; and

in response to receiving the notification of the recovery in status, enabling by the second switch, the first downstream communication link.

10. A network switching system, comprising:

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core; and

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device and, in response, disable a first downstream communication link between the second network device and an end station.

11. The system of claim 10, further comprising one or more intermediate network devices, between the first and second network devices, configured to receive the notification of the change in status from the first network device and forward the notification to the second network device.

12. The system of claim 10, wherein the first network device is configured to send notification of the change in status to a plurality of network devices specified by a user.

13. The system of claim 10, wherein the second network device is configured to, in response to receiving notification of the change in status from the first network device, disable first downstream communication links between the second switch and a plurality of end stations.

14. The system of claim 13, wherein the plurality of end stations are specified by a user.

15. A system, comprising:

a plurality of end stations;

at least a first network device configured to detect a change in status of a first upstream communication link between the first network device and a network core; and

at least a second network device configured to receive, from the first network device, notification of the change in status from the first network device and, in response, disable first downstream communication links between first network interface devices on the plurality of end stations, thereby causing at least some of the plurality of end stations to switch to second downstream communications links between second network interface devices thereon and at least a third network device.

16. The system of claim 15, wherein the plurality of end stations comprises at least one end station without a second network interface.

17. The system of claim 15, wherein the first network device is configured to send notification of the change in status to a plurality of network devices specified by a user.

18. The system of claim 15, wherein the second network device is configured to, in response to receiving notification of the change in status from the first network

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device, disable first downstream communication links between the second switch and a limited subset of the plurality of end stations specified by a user.

19. An aggregation device comprising:

a processor; and

a computer readable medium containing instructions which, when executed by the processor, cause the aggregation device to perform operations comprising,

detecting a change in status of a first upstream communication link between the aggregation device and a network, and

sending notification of the change in status to a network device in communication with an end station via a first downstream communication link.

20. The aggregation device of claim 19, wherein the operations further comprise:

detecting recovery of connectivity between the aggregation device and the network; and

sending notification of the recovery in status to the network device.

21. The aggregation device of claim 19, wherein the operations comprise:

obtaining a list of network devices specified by a user; and

sending notification of the change in status to the network devices specified by the user.

22. An access device, comprising:

a processor; and

a computer readable medium containing instructions which, when executed by the processor, cause the access device to perform operations comprising,

in response to receiving notification of a detected change in status between an upstream network device and a network, disabling at least one downstream communication link between the access device and at least one end station.

23. The access device of claim 22, wherein disabling at least one downstream communication link between the access device and at least one end station comprises disabling downstream communication links between the access device a plurality of end stations.

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24. The access device of claim 22, wherein the operations further comprise receiving a user-specified list of the plurality of end stations to be disabled in response to receiving notification of the detected change in status from the upstream switching device.

25. A network device, comprising:

means for receiving notification of a detected change in status between an upstream network device and a network; and

means for disabling at least one downstream communication link between the access device and at least one end station.

26. The network device of claim 25, wherein the means for disabling at least one downstream communication link between the access device and at least one end station comprises an optical driver circuit.

27. The network device of claim 25, wherein the means for receiving notification of a detected change in status between an upstream network device and a network comprises means for receiving a message broadcast from the upstream network device.

28. A network device comprising:

means for detecting a change in status of a first upstream communication link between the network device and a network; and

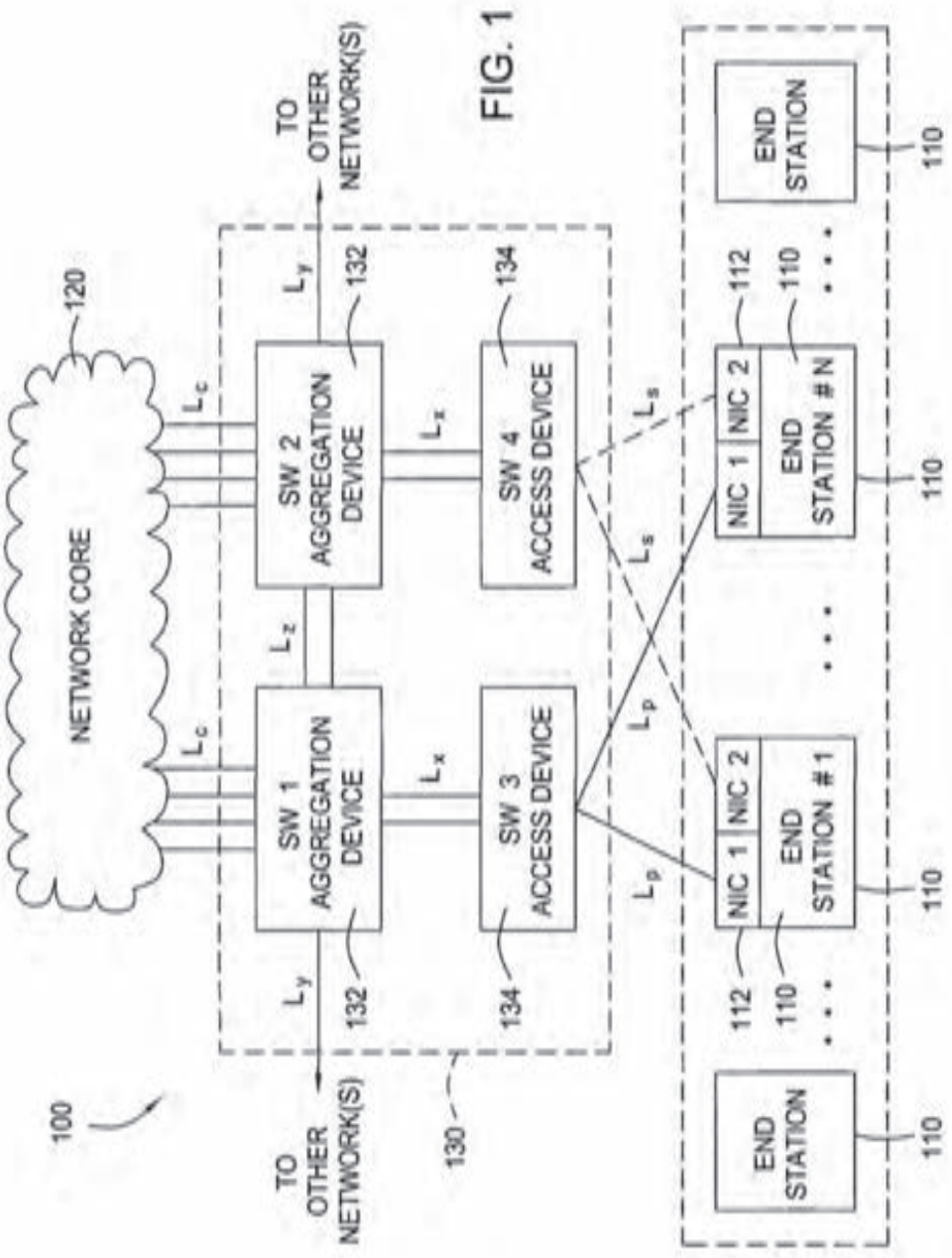
means for sending notification of the change in status to another network device in communication with an end station via a downstream communication link to cause the other network device to disable the downstream communication link.

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ABSTRACT OF THE DISCLOSURE

A method and apparatus that promote expedited fast link failover decisions by and end station with redundant multilayer switching paths to a network are disclosed. In response to detecting a change in connectivity with an upstream link to a network, an upstream switch may send a notification to an intermediate switch with a downstream link to the end station. In response to the notification, the intermediate switch may disable ("bring down") the downstream link to the end station. Bringing the downstream link down in this manner may cause the end station to switch ("failover") to a different downstream link, for example, allowing the end station to establish connectivity to the network via a redundant path.

FIG. 1


100
120
NETWORK CORE
TO OTHER NETWORK(S)
TO OTHER NETWORK(S)
130
SW 1 AGGREGATION DEVICE
SW 2 AGGREGATION DEVICE
SW 3 ACCESS DEVICE
SW 4 ACCESS DEVICE
L_c
L_c
L_y
L_y
L_z
L_x
L_x
L_p
L_p
L_s
L_s
132
132
134
134
NIC 1
NIC 2
NIC 1
NIC 2
END STATION #1
END STATION #N
END STATION
END STATION
110
110
110
110
112
112

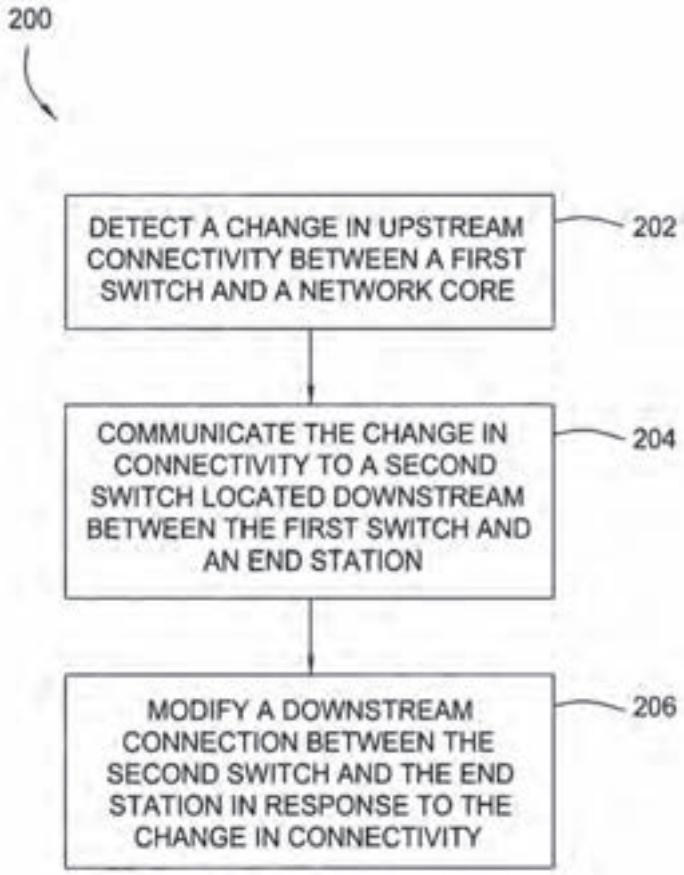

200
DETECT A CHANGE IN UPSTREAM CONNECTIVITY BETWEEN A FIRST SWITCH AND A NETWORK CORE
202
COMMUNICATE THE CHANGE IN CONNECTIVITY TO A SECOND SWITCH LOCATED DOWNSTREAM BETWEEN THE FIRST SWITCH AND AN END STATION
204
MODIFY A DOWNSTREAM CONNECTION BETWEEN THE SECOND SWITCH AND THE END STATION IN RESPONSE TO THE CHANGE IN CONNECTIVITY
206

FIG. 2

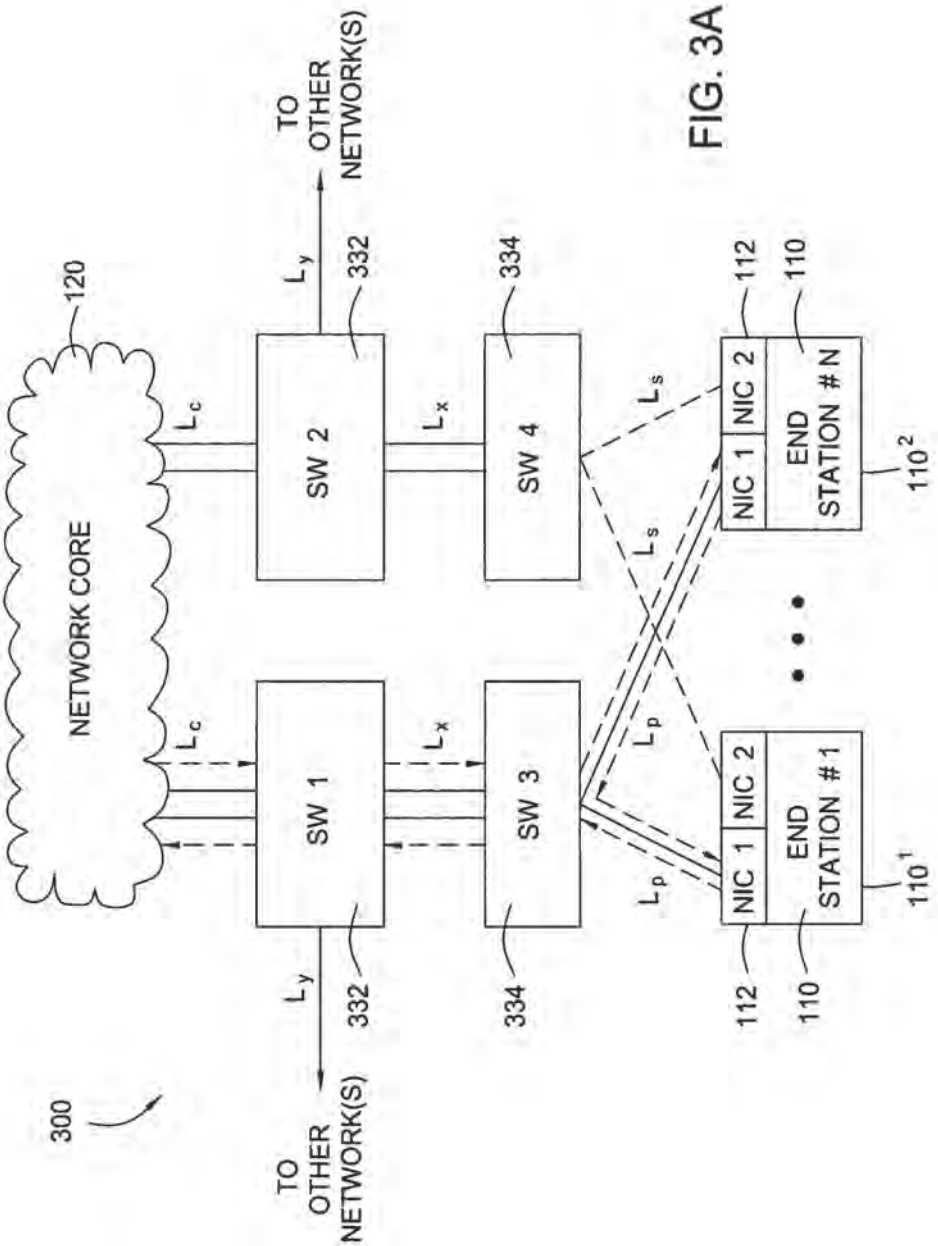

300
120
NETWORK CORE
TO OTHER NETWORK(S)
TO OTHER NETWORK(S)
SW 1
SW 2
SW 3
SW 4
L_c
L_x
L_y
L_p
L_s
332
334
NIC 1
NIC 2
END STATION # 1
END STATION # N
110^1
110^2
110
112

FIG. 3A

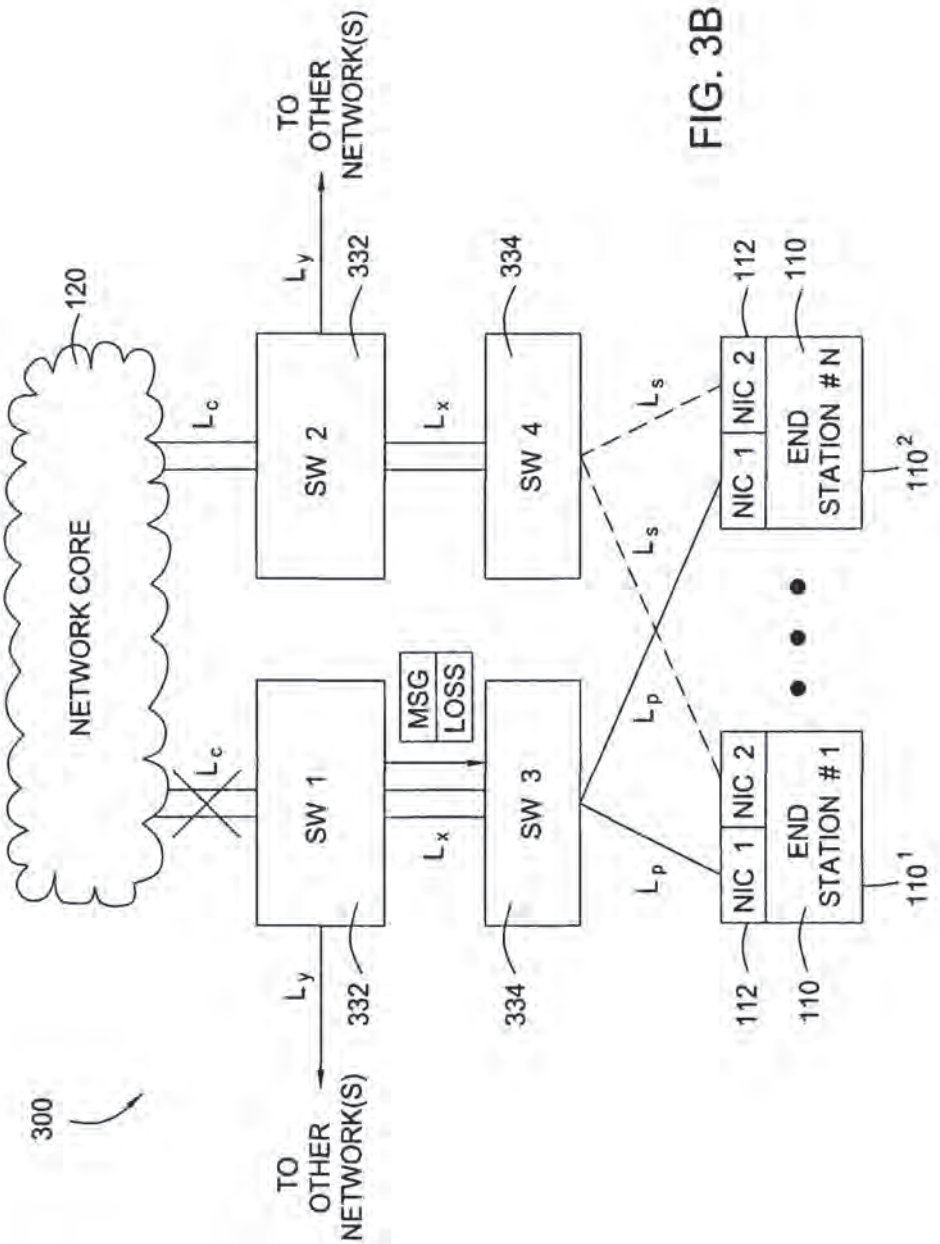

300
120
NETWORK CORE
TO OTHER NETWORK(S)
TO OTHER NETWORK(S)
SW 1
SW 2
SW 3
SW 4
L_c
L_c
L_x
L_x
L_y
L_y
L_p
L_p
L_s
L_s
MSG LOSS
332
332
334
334
112
112
110
110
NIC 1
NIC 2
NIC 1
NIC 2
END STATION # 1
END STATION # N
110^1
110^2

FIG. 3B

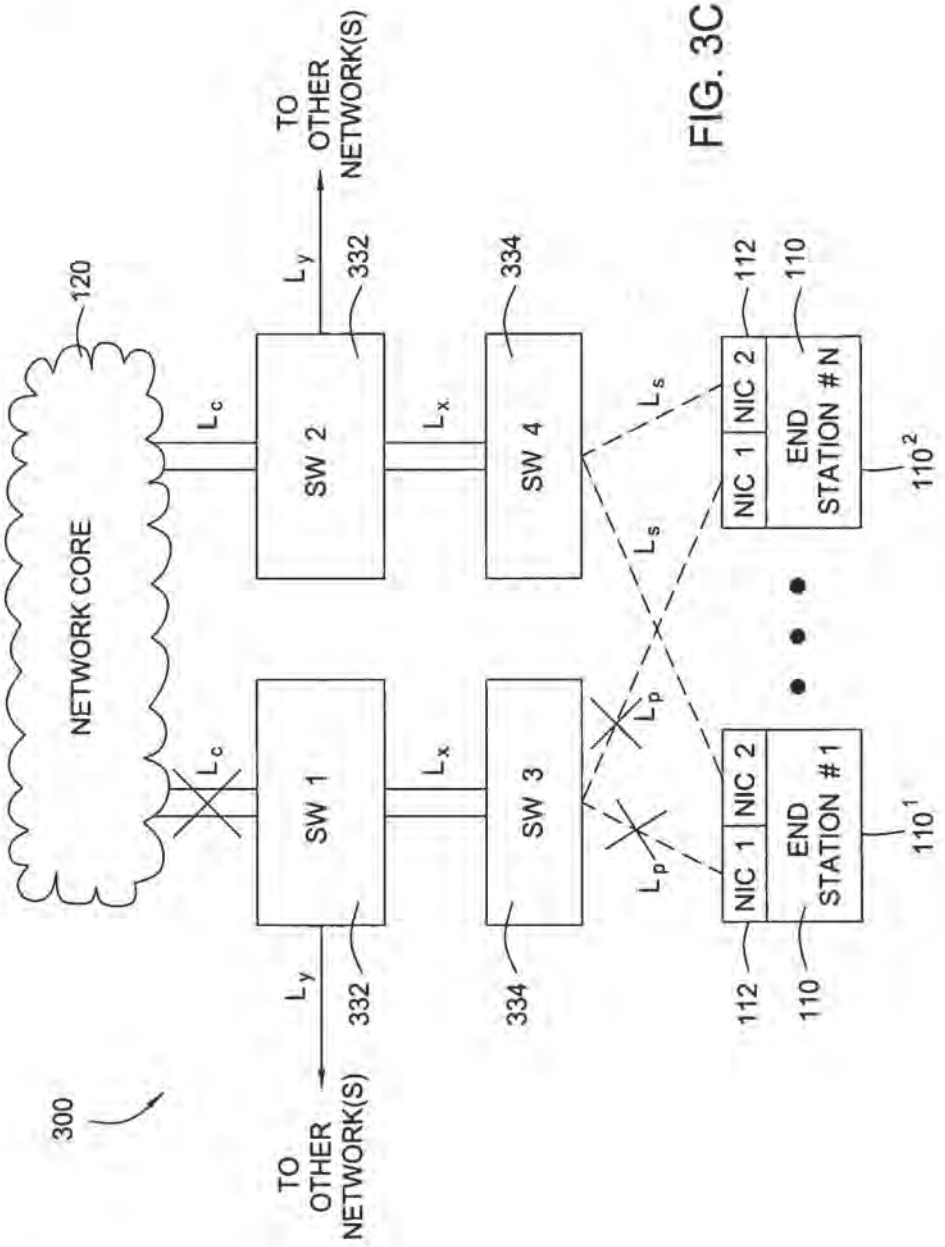

300
NETWORK CORE
120
TO OTHER NETWORK(S)
TO OTHER NETWORK(S)
SW 1
SW 2
SW 3
SW 4
L_c
L_c
L_x
L_x
L_y
L_y
L_s
L_s
L_p
L_p
332
332
334
334
NIC 1
NIC 2
NIC 1
NIC 2
END STATION #1
END STATION #N
110
110
112
112
110^1
110^2

FIG. 3C

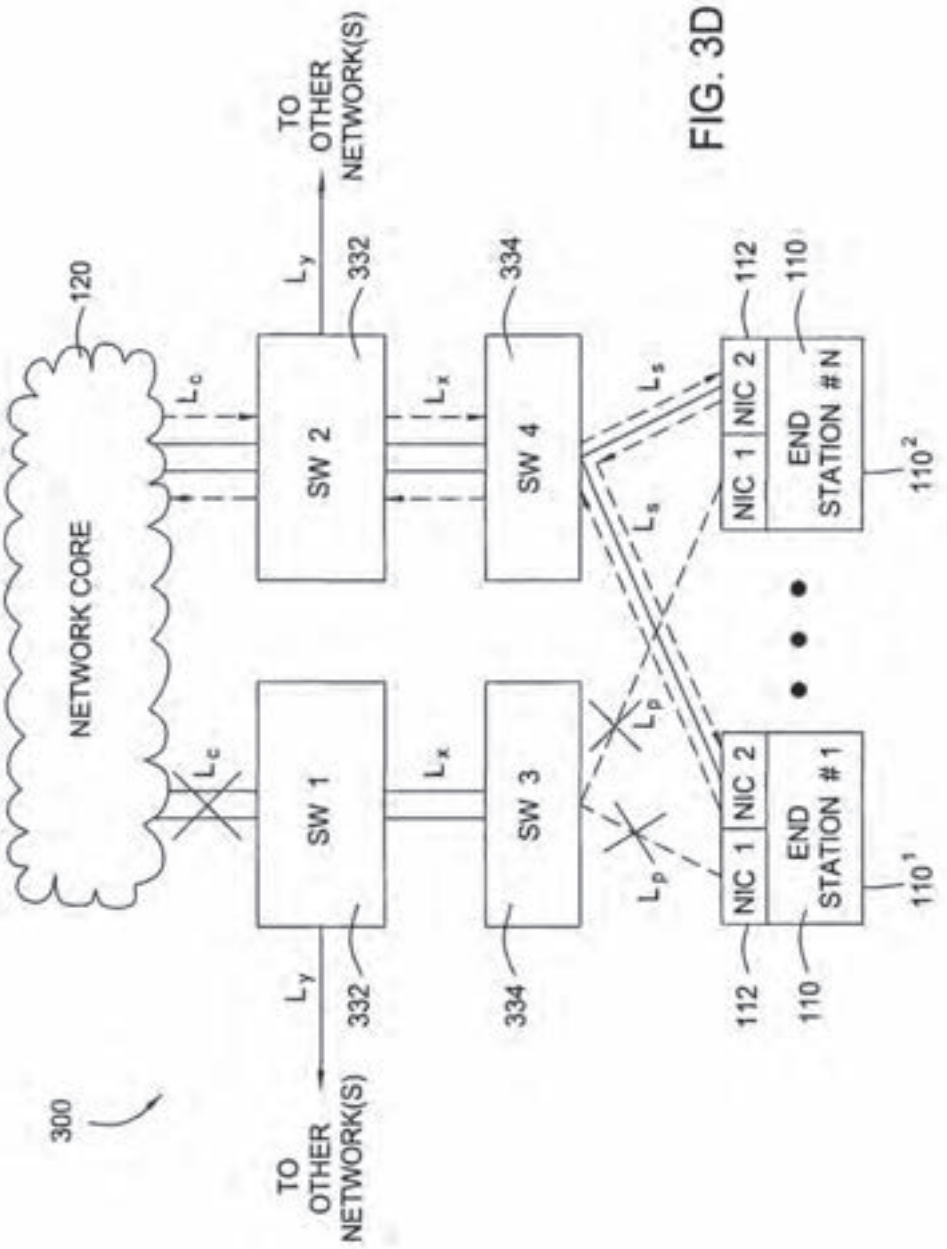

300
NETWORK CORE
120
TO OTHER NETWORK(S)
TO OTHER NETWORK(S)
SW 1
SW 2
SW 3
SW 4
L_c
L_x
L_y
L_s
L_p
332
334
112
110
NIC 1
NIC 2
END STATION #1
END STATION #N
110^1
110^2

FIG. 3D

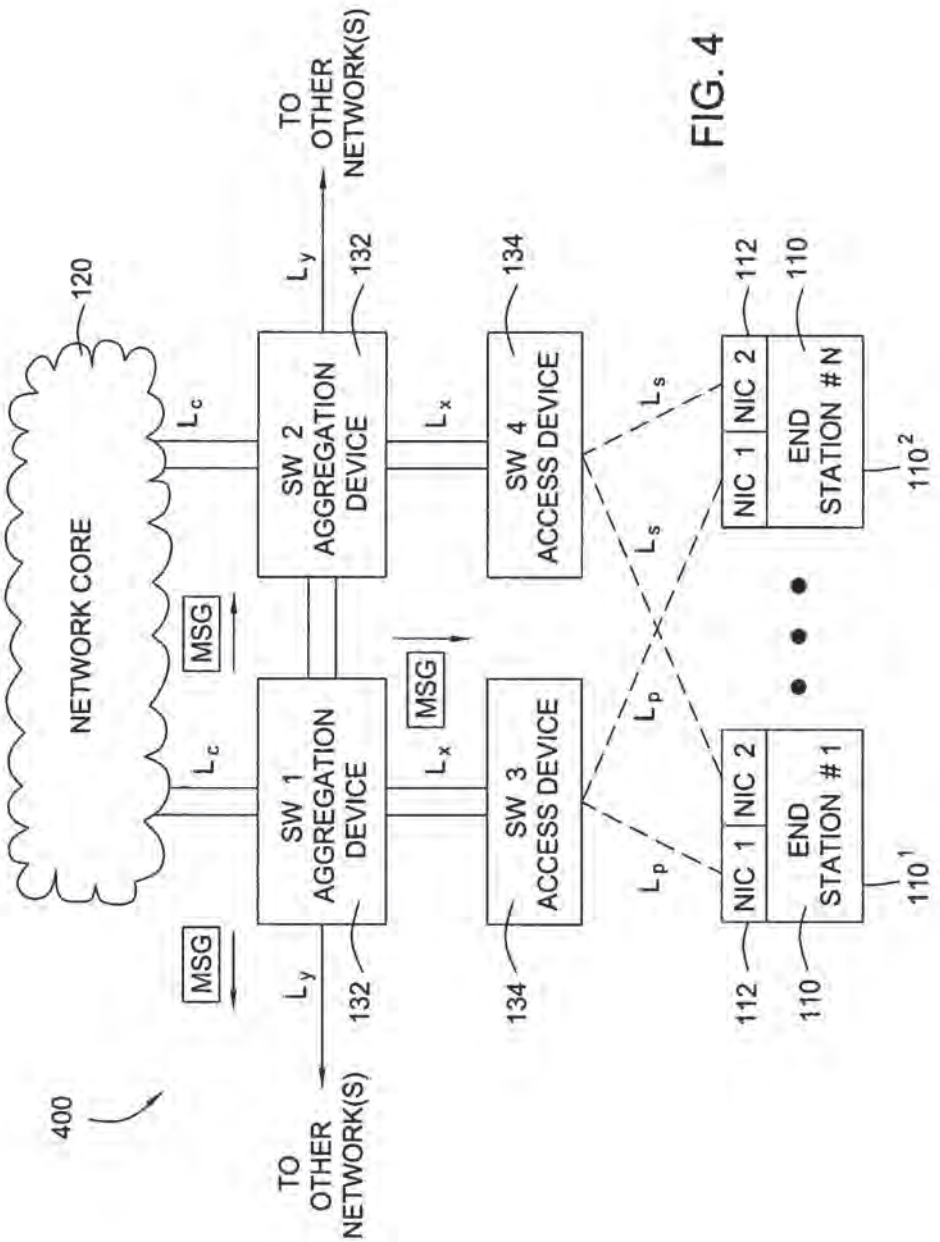

400
120
NETWORK CORE
SW 1 AGGREGATION DEVICE
SW 2 AGGREGATION DEVICE
SW 3 ACCESS DEVICE
SW 4 ACCESS DEVICE
132
134
L_c
L_x
L_y
L_p
L_s
MSG
TO OTHER NETWORK(S)
NIC 1
NIC 2
END STATION # 1
END STATION # N
110
112
110^1
110^2

FIG. 4

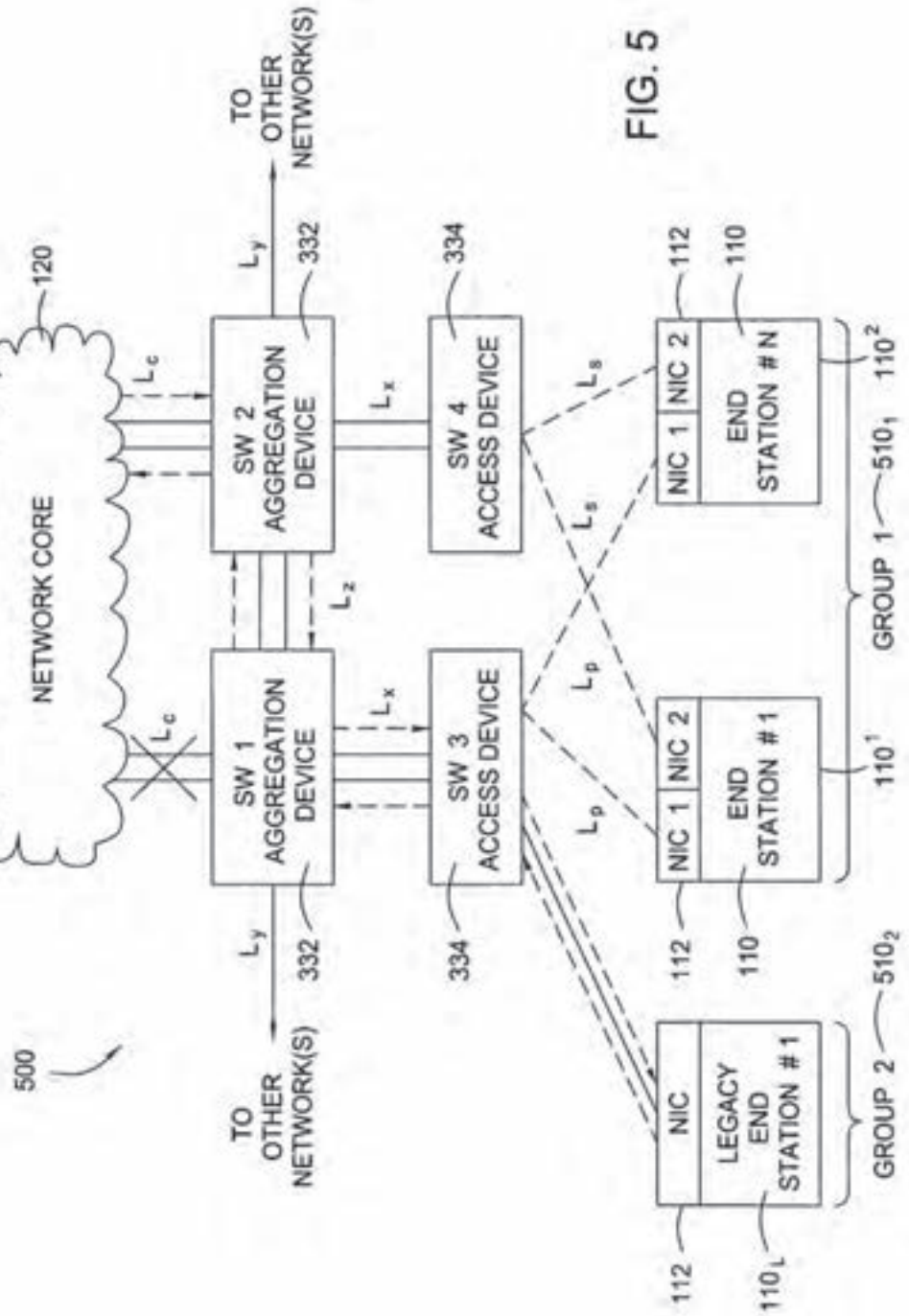

500
120
NETWORK CORE
SW 1 AGGREGATION DEVICE
SW 2 AGGREGATION DEVICE
SW 3 ACCESS DEVICE
SW 4 ACCESS DEVICE
332
334
L_c
L_x
L_z
L_y
L_s
L_p
TO OTHER NETWORK(S)
NIC 1
NIC 2
NIC
END STATION # N
END STATION # 1
LEGACY END STATION # 1
110
112
110_L
110^1
110^2
510_1
510_2
GROUP 1
GROUP 2

FIG. 5

Atty. Dkt. No. CISC/12792

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

This declaration is of the following type:

- ☒ original
- ☐ divisional
- ☐ continuation
- ☐ continuation-in-part

INVENTORSHIP IDENTIFICATION

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

SYSTEM AND METHODOLOGY FOR FAST LINK FAILOVER BASED ON REMOTE UPSTREAM FAILURES

SPECIFICATION IDENTIFICATION

The specification of which:

- ☒ is attached hereto
- ☐ was filed on ____, under Serial No. _____ , executed on even date herewith; or
- ☐ Express Mail No.(as Serial No. not yet known) and was amended on _____ (if applicable)
- ☐ was described and claimed in PCT International Application No._____ filed on _____ and as amended under PCT Article 19 on _____.

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information I know to be material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56, and which is material to the examination of this application; namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and

- ☐ In compliance with this duty there is attached an Information Disclosure Statement in accordance with 37 CFR §1.98.

BEST AVAILABLE COPY

PRIORITY CLAIM (35 U.S.C. §119)

I hereby claim foreign priority benefits under Title 35, United States Code, §119, of any provisional or foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below, and have also identified below any provisional or foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

☒ No such applications have been filed.

☐ Such applications have been filed as follows:

A. Prior foreign/PCT application(s) filed within 12 mos. (6 mos. for design) prior to this application, and any priority claims under 35 U.S.C. §119

Country/PCT	Application No	Date Filed	Priority Claimed
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

B. All foreign application(s), if any, filed more than 12 mos. (6 mos for design) prior to this U.S. application

Country:
Application No:
Filing date:

C. U.S. Provisional Application filed within 12 months prior to this application

Serial No.	Filing Date

PRIORITY CLAIM (35 U.S.C. §120)

I hereby claim the benefit under Title 35, United States Code, §120, of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information that is material to the examination of this application (namely, information where there is substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application.

☒ No such applications have been filed
☐ Such applications have been filed, as follows:

Serial No.	Filing Date	Status: Patented	Pending	Abandoned

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POWER OF ATTORNEY

I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Randol W. Read — Registration No. 43,876

Send correspondence to:

Randol W. Read
Patterson & Sheridan, LLP
3040 Post Oak Blvd., Suite 1500
Houston, TX 77056

Direct telephone calls to:

Randol W. Read
Patterson & Sheridan, L.L.P.
713.623.4844

DECLARATION

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 Sec. 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Full name of **sole or first** inventor: GOKUL S. TIRUMALAI
Inventor's signature: G. S. T. Date: 04/05/2006
Residence: 3102 Hillary Dr.
San Jose, CA 95124
Post Office Address: Same as above.
U.S.A. Country of Citizenship: India

Full name of **second** inventor: ALBERT HYDE MITCHELL
Inventor's signature: A. H. M. Date: 4/5/06
Residence: 1098 Norfolk Dr.
San Jose, CA 95129
Post Office Address: Same as above.
U.S.A. Country of Citizenship: U.S.A.

(DECLARATION ENDS WITH THIS PAGE)

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PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

04/07/2006 FFANREIA 00000033 200782 11398519

01 FC:1011 300.00 DA
02 FC:1111 500.00 DA
03 FC:1311 200.00 DA
04 FC:1201 800.00 DA
05 FC:1202 400.00 DA

PTO-1556
(5/87)

*U.S. Government Printing Office: 2002 — 459-267/59033

PTO/SB/06 (12-04)
Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875 Effective December 8, 2004

Application or Docket Number: 11398519

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	150.00		N/A	300.00
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	$250		N/A	$500
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	$100		N/A	$200
TOTAL CLAIMS (37 CFR 1.16(i))	28 minus 20 =	* 8	X$ 25 =		OR	X$50 =	8 00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	7 minus 3 =	* 4	X100 =			X200 =	2 00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			+180=			+360=	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	7 00

APPLICATION AS AMENDED – PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	X$ 25 =		OR	X$50 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X100 =		OR	X200 =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					+180=		OR	+360=	
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

1 - 10 - 15 - 19 - 22 - 25 - 28

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	X$ 25 =		OR	X$50 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X100 =		OR	X200 =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					+180=		OR	+360=	
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

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

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/05 (05-05)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office. U.S. DEPARTMENT OF COMMERCE
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))

Attorney Docket No.	CISC/12792
First Inventor	Tirumalai et al.
Title	System and Methodology for Fast Link Failover Based on Remote Upstream Failures
Express Mail Label No.	EV 668243885 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ **Fee Transmittal Form (e.g., PTO/SB/17)**
   (Submit an original and a duplicate for fee processing)
2. ☐ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☒ **Specification** [*Total Pages* 18]
   Both the claims and abstract must start on a new page
   (For information on the preferred arrangement, see MPEP 608.01(a))
4. ☒ **Drawing(s)** *(35 U.S.C.113)* [*Total Sheets* 8]
5. **Oath or Declaration** [*Total Sheets* ___]
   a. ☐ Newly executed (original or copy)
   b. ☐ Copy from a prior application (37 CFR 1.63 (d))
   (for a continuation/divisional with Box 18 completed)
   i. ☐ DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
   (if applicable, items a.-c. are required)
   a. Computer Readable Form (CRF)
      i. ☐ Computer Readable Form (CRF)
      ii. ☐ Transfer Request (37 CFR 1.821(e))
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ADDRESS TO: **Commissioner for Patents**
P.O. Box 1450
Alexandria VA 22313-1450

ACCOMPANYING APPLICATIONS PARTS

9. ☒ **Assignment Papers** (cover sheet & document(s))
   Name of Assignee Cisco Technology, Inc.
   3 pages
10. ☐ **37 C.F.R. 3.73(b) Statement** ☐ **Power of Attorney**
    (when there is an assignee)
11. ☐ **English Translation Document** *(if applicable)*
12. ☐ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of foreign patent documents, publications & other information
13. ☐ **Preliminary Amendment**
14. ☒ **Return Receipt Postcard** (MPEP 503)
    (Should be specifically itemized)
15. ☐ **Certified Copy of Priority Document(s)**
    (if foreign priority is claimed)
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☒ Other: Combined Declaration and Power of Attorney,
    3 pages

113006 U.S. PTO 11/398519

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*
☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) *of prior application No:* ____ / ____
Prior application information: *Examiner* ____ *Art Unit:* ____

19. CORRESPONDENCE ADDRESS

☐ The address associated with Customer Number [ ] OR ☒ Correspondence address below

Name	Randol W. Read				
Address	Patterson & Sheridan, LLP 3040 Post Oak Blvd., Suite 1500				
City	Houston	*State*	TX	*Zip Code*	77056
Country	USA	*Telephone*	713.623.4844	*Email address*	rread@pattersonsheridan.com

Signature		*Date*	April 5, 2006
Name (Print/Type)	Randol W. Read	*Registration No. (Attorney/Agent)*	43,876

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
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PTO/SB/17 (01-06)
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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL for FY 2006

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT	($) 2,200.00

Complete If Known	
Application Number	Unassigned
Filing Date	Herewith
First Named Inventor	Tirumalai et al.
Examiner Name	Unassigned
Art Unit	Unassigned
Attorney Docket No.	CISC/12792

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify) :

☒ Deposit Account Deposit Account Number: 20-0782/CISC/12792/RWR Deposit Account Name: Patterson & Sheridan, LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☒ Charge any additional fee(s) or underpayments of fee(s) Under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee($)	Fee($)	Fee($)	Fee($)	Fee($)	Fees Paid ($)
Utility	300	150	500	250	200	100	1000
Design	200	100	100	50	130	65	____
Plant	200	100	300	150	160	80	____
Reissue	300	150	500	250	600	300	____
Provisional	200	100	0	0	0	0	____

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		Extra Claims		Fee($)		Fee Paid ($)
28	-20 or HP=	8	x	50	=	400

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims		Extra Claims		Fee($)		Fee Paid ($)
7	- 3 or HP=	4	x	200	=	800

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	
Fee ($)	Fee Paid ($)
____	____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets		Number of each additional 50 or fraction thereof		Fee ($)		Fee Paid ($)
26	- 100 =	____	/ 50 =	____	(round up to a whole number) x		=	____

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	____
Other (e.g., late filing surcharge) :	____

SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	43,876	Telephone	713.623.4844
Name (Print/Type)	Randol W. Read			Date	April 5, 2006

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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