

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 November 2006 (30.11.2006)

PCT

(10) International Publication Number
WO 2006/126098 A3

(51) International Patent Classification:
H04L 12/24 (2006.01) **H04L 12/26** (2006.01)

(21) International Application Number:
PCT/IB2006/001805

(22) International Filing Date: 22 May 2006 (22.05.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/137,147 25 May 2005 (25.05.2005) US

(71) Applicant (for all designated States except US): **ALCATEL LUCENT** [FR/FR]; 54, rue La Boétie, F-75008 Paris (FR).

(72) Inventors: **ROBERTS, Peter**; 43 Victor Street, Stittsville, Ontario, K2S 1H9 (CA). **RAJSIC, Carl**; 2 Brookbend Crescent, Nepean, Ontario K2H 1E4 (CA).

(74) Agent: **HERVOUET, Sylvie**; Feray Lenne Conseil, 39/41 avenue Aristide Briand, F-92163 Antony Cedex (FR).

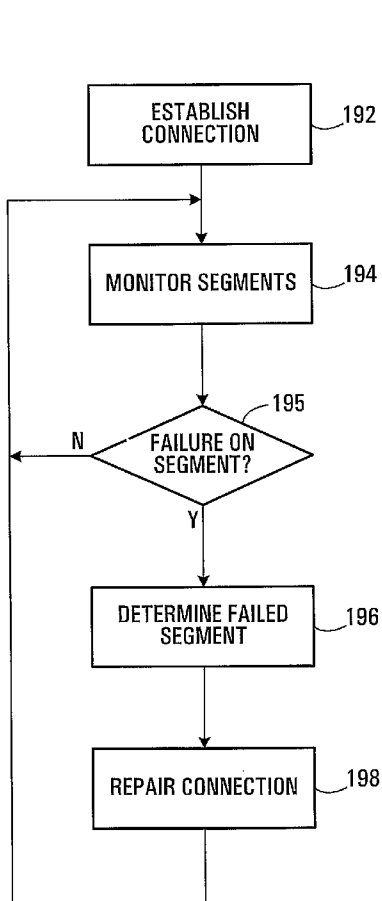
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

[Continued on next page]

(54) Title: COMMUNICATION NETWORK CONNECTION FAILURE PROTECTION



(57) Abstract: Communication network connection failure protection methods and systems are disclosed. Control information is communicated in a communication network, and causes network elements of the communication network to establish connection monitoring for respective segments of the network connection. Connection monitoring information which is communicated on the segments allows failures such as loss of continuity to be detected and reported. Responsive to an indication of a failure on a segment, the segment on which the failure occurred is identified, and the network connection can be rerouted around that segment.

WO 2006/126098 A3



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

8 November 2007

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2006/001805

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04L12/24 H04L12/26

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 246 396 A (ALCATEL CANADA INC [CA]) 2 October 2002 (2002-10-02)	1-5, 7-13, 16-18, 21-23
Y	abstract paragraph [0001] - paragraph [0019] paragraph [0022] - paragraph [0025] paragraph [0032] - paragraph [0040] figures 1-3 ----- -/--	6, 14, 15, 19, 20, 24, 25

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

22 August 2007

Date of mailing of the international search report

30/08/2007

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

AURA MARCOS, F

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2006/001805

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>CAVENDISH, D. ET AL.: "OAM in MPLS-based networks" IEEE, [Online] October 2004 (2004-10), pages 91-99, XP002447607 Retrieved from the Internet: URL:http://ieeexplore.ieee.org/iel5/35/29548/01341266.pdf> abstract page 91, column 1, line 20 - page 93, column 1, line 35 page 95, column 1, line 20 - page 96, column 2, line 5 page 97, column 1, line 35 - column 2, line 32 page 98, column 1, line 20 - column 2, line 15</p>	6,14,15, 19,20, 24,25
A	<p>-----</p> <p>KOMPELLA, K. ET AL.: "Detecting MPLS Data Plane Failures" IETF, [Online] October 2004 (2004-10), pages 1-32, XP002447608 Retrieved from the Internet: URL:http://tools.ietf.org/html/draft-ietf-mpls-lsp-ping-07> [retrieved on 2007-08-22] abstract page 1, line 1 - page 4, line 20 page 21, line 20 - page 27, line 15</p>	1-25
A	<p>-----</p> <p>SHARMA V ET AL: "Framework for Multi-Protocol Label Switching (MPLS)-based Recovery" IETF STANDARD, INTERNET ENGINEERING TASK FORCE, IETF, CH, February 2003 (2003-02), XP015009252 ISSN: 0000-0003 abstract page 14, line 1 - page 18, line 20 page 1, line 1 - page 8, line 15 page 21, line 25 - page 22, line 25 page 25, line 20 - line 25 page 26, line 25 - line 10</p> <p>-----</p>	1-25

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2006/001805

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1246396	A	02-10-2002	CN 1383292 A	04-12-2002
			JP 2002300192 A	11-10-2002
			US 2004202112 A1	14-10-2004
