

(51) International Patent Classification:
H04L 12/56 (2006.01)(21) International Application Number:
PCT/IB2010/054852(22) International Filing Date:
26 October 2010 (26.10.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/614,323 6 November 2009 (06.11.2009) US(71) Applicant (for all designated States except US): **TELEFONAKTIEBOLAGET L M ERICSSON (PUBL)** [SE/SE]; S-164 83 Stockholm (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LU, Wenhui** [US/US]; 1028 Belvedere Lane, San Jose, California 95129 (US). **KINI, Sriganesh** [IN/US]; 45855 Cheyenne Pl, Fremont, California 94539 (US).(74) Agents: **CAMERON, Michael, G.** et al.; 6300 Legacy, MS EVR 1-C-11, Plano, Texas 75024 (US).

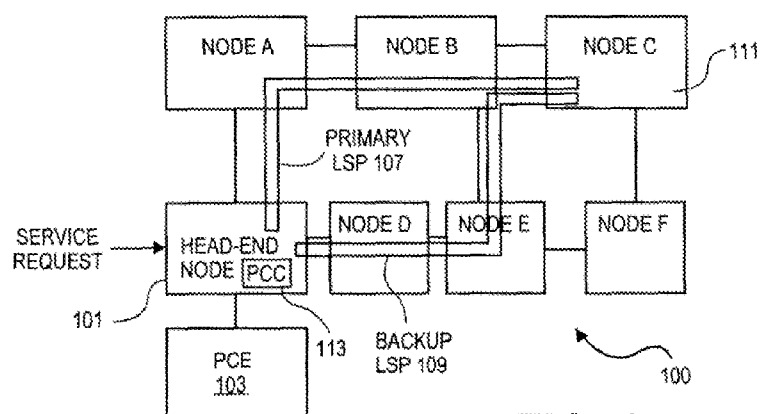
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG,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

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: DISJOINT PATH COMPUTATION ALGORITHM

**FIG. 1**

(57) **Abstract:** A network element implementing Multiprotocol Label Switching to automatically create an optimal deterministic back-up Label Switch Path (LSP) (109) that is maximally disjoint from a primary LSP (107) to provide a reliable back up to the primary LSP (107). The network element receives a request for a generation of an LSP, determines that the request for the generation of the LSP is for the back-up LSP (109), locates each Sink of the primary LSP (107) in a traffic engineering database, modifies each link of the primary LSP (107) to have a link cost significantly greater than an actual link cost to discourage use of each link of the primary LSP (107) in the back-up LSP (109), executes a Constrained Shortest Path First algorithm to obtain the back-up LSP (109), wherein the back-up LSP (109) has a maximum disjointness from the primary LSP (107) due to a modified cost of each link of the primary LSP (107) and retains the back-up LSP (109)