(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 13 June 2002 (13.06.2002)

PCT

(10) International Publication Number WO 02/046877 A3

- (51) International Patent Classification⁷: H04L 12/56, 29/06
- (21) International Application Number: PCT/US01/47296
- (22) International Filing Date: 4 December 2001 (04.12.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 09/732,674 8 December 2000 (08.12.2000) US
- (71) Applicant (for all designated States except US): HONEY-WELL INTERNATIONAL INC. [US/US]; Patent Service Group, P.O. Box 2245, Morristown, NJ 07962-2245 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): HEDDEN, Ralph, Coleman [US/US]; 24 Abiquiu Court, Sandia Park, NM 87047 (US).

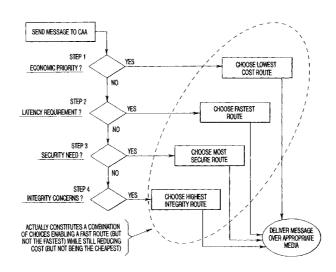
- (74) Agents: CRISS, Roger, H. et al.; Honeywell International Inc., Patent Services Group, P.O. Box 2245, Morristown, NJ 07962-2245 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,

[Continued on next page]

(54) Title: DIGITAL SIGNAL ROUTE DETERMINATION METHOD



(57) **Abstract:** In a method of routing digital signals based on criteria defined by the user all messages receive a prioritization based on the criteria defined by the individual user. Based on this guidance, each digital message is Tagged (10) so that Overlay software (20, 30, 40, 50) can determine the prioritization that will be applied to the message and subsequently which media or route (60) will be used and when a message should be sent. The Overlay software (20, 30, 40, 50) uses embedded look-up tables (80), which define available routes so that prioritization decisions can be made, real-time, based on route status (2, 3, 4) or cost (1), and prioritization algorithms or a combination of both to determine the most appropriate media or route (60) to send a message. The Overlay software (20, 30, 40, 50) also counts each message, the route used, and the time sent to enable accounting verification at an appropriate time in the future.



WO 02/046877 A3



CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,

RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

with international search report

(88) Date of publication of the international search report: 7 August 2003

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.

INTERNATIONAL SEARCH REPORT

Infunctional Application No PCT/US 01/47296

| a. classi IPC 7 | FICATION OF SUBJECT MATTER H04L12/56 H04L29/06 | | | | | | | | |
|---|---|---|-----------------------|--|--|--|--|--|--|
| According to | n International Patent Classification (IPC) or to both national classifica | ation and IPC | | | | | | | |
| | SEARCHED | | | | | | | | |
| Minimum do IPC 7 | ocumentation searched (classification system followed by classification H04L | on symbols) | | | | | | | |
| Documentat | tion searched other than minimum documentation to the extent that st | uch documents are included in the fields sea | arched | | | | | | |
| Electronic d | ata base consulted during the international search (name of data bas | se and, where practical, search terms used) | | | | | | | |
| EPO-In | ternal | | | | | | | | |
| | | | | | | | | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | | | | | | | | |
| Category ° | Citation of document, with indication, where appropriate, of the rele | evant passages | Relevant to claim No. | | | | | | |
| A | US 5 459 837 A (CACCAVALE FRANK S) 17 October 1995 (1995-10-17) column 1, line 48 - line 51 column 1, line 61 -column 2, line 5 | | 1–18 | | | | | | |
| А | EP 0 942 554 A (MOORE PRODUCTS CO) 15 September 1999 (1999-09-15) page 3, line 36 - line 53 | | 1–18 | | | | | | |
| Furt | her documents are listed in the continuation of box C. | X Patent family members are listed i | п аппех. | | | | | | |
| ° Special ca | | | | | | | | | |
| "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 | | '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 considered to involve an inventive step when the document is combined with one or more other such docu— | | | | | | | |
| other means "P" document published prior to the international filing date but | | ments, such combination being obvious to a person skilled in the art. 8 document member of the same patent family | | | | | | | |
| | actual completion of the international search | Date of mailing of the international sea | | | | | | | |
| 4 | April 2003 | 15/04/2003 | 15/04/2003 | | | | | | |
| Name and | mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 | Authorized officer | | | | | | | |
| | NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016 | Veen, G | | | | | | | |

INTERNATIONAL SEARCH REPORT

Information on patent family members

| Int | Application No |
|--------|----------------|
| PCT/US | 01/47296 |

| Patent document ited in search report | | Publication date | | Patent family member(s) | Publication date |
|--|---|---------------------|----------|--------------------------|--------------------------|
| JS 5459837 | Α | 17-10-1995 | NONE | | |
| EP 0942554 | Α | 15-09-1999 | US EP | 6192414 B1 0942554 A2 | 20-02-2001 15-09-1999 |

Form PCT/ISA/210 (patent family annex) (July 1992)