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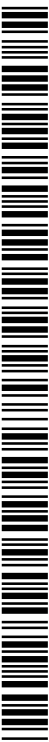
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(54) Title: END-TO-END DELAY MANAGEMENT FOR DISTRIBUTED COMMUNICATIONS NETWORKS

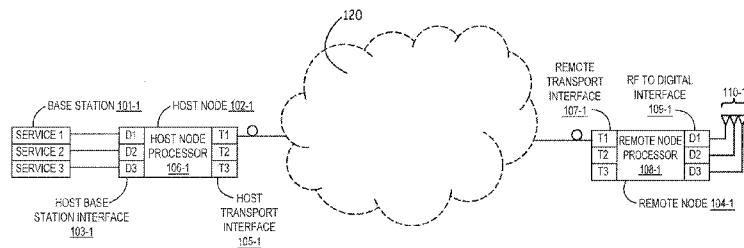


FIG. 1C

(57) Abstract: A method for calculating delay in a distributed antenna system includes sending a ping initiation message from a remote node to a host node in a distributed antenna system. The ping initiation message uniquely identifies a first communication port of the remote node to the host node with a unique identification. The method also includes receiving a ping reply message at the remote node. The ping reply message corresponds to the ping initiation message and also uniquely identifies the first communication port of the remote node with the unique identification. The method also includes determining, at the remote node, whether the ping reply message corresponds to the first communication port of the remote node based on the unique identification. The method also includes, when the ping reply message corresponds to the first communication port of the remote node, calculating the round-trip time delay between sending the ping initiation message and receiving the ping reply message at the remote node.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/042237

A. CLASSIFICATION OF SUBJECT MATTER

H04L 29/02(2006.01)i

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 29/02; G08C 15/00; H04W 88/08; H04J 14/08; H04B 17/00; H04L 12/26; H04W 4/00; H04B 1/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: distributed antenna, ping initiation message, ping reply message, delay, RTT

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2011-0122772 A1 (STEVEN B. STUART) 26 May 2011 See paragraphs [0017], [0020]-[0027]; claim 1; and figure 1.	1-36
A	US 2009-0046586 A1 (STEVEN B. STUART et al.) 19 February 2009 See paragraph [0025]; claim 1; and figure 1.	1-36
A	US 2011-0039497 A1 (DAVID HAMMARWALL et al.) 17 February 2011 See paragraphs [0052]-[0070]; claim 17; and figures 4-6.	1-36
A	US 5805983 A (ARUN NAIDU et al.) 08 September 1998 See column 5, line 14 - column 6, line 60; claim 1; and figures 4-6b.	1-36
A	US 2010-0202356 A1 (LARRY G. FISCHER et al.) 12 August 2010 See paragraphs [0007], [0008]; claim 1; and figure 1.	1-36

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

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"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

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"&" document member of the same patent family

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Information on patent family members

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