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(54) Title: AUTOMATED CONFIGURATION OF PACKET ROUTED NETWORK

(57) Abstract: Detailed configurations for specific network elements are automatically generated and, if desired, automatically activated in response to an addition, modification and/or deletion of a network service or topology specified at high level. Network configuration information is stored in a database. Metadata, including descriptions of network elements, properties of network elements and relationships between network elements, is used to describe network elements, is used to describe network topologies. Data fields described the metadata store current configuration data for each network element.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/22654

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 13/00, 13/14, 13/42
 US CL : 709/223, 225, 233, 220, 221

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)
 U.S. : 709/223, 225, 233, 220, 221

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 Google.com, IEEE, ACM

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,845,090 (Collins, III et al.) 1 December 1998 (1.12.1998), Abstract; column 1-6	1-6, 8-9, 13-14, 17-26
X	US 5,442,749 (Northcutt et al.) 15 August 1995 (15.8.1995), Abstract, columns 3-8	1-6, 8-9, 13-14, 17-26
X	US 5,109,515 (Laggis et al.) 28 April 1992 (28.4.1992), Abstract, columns 2-11	1-6, 9, 13-14, 17-26
Y	US 5,557,317 (Nishio et al.) 17 September 1996 (17.19.1996), Abstract columns 1-6	8

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 application or patent 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

15 January 2004 (15.01.2004)

Date of mailing of the international search report

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Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/22654

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
 2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
 3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

 4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-6, 8-9, 13-14, 17-26
- Remark on Protest The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group 1, claim(s) 15, 16, 27, drawn to using metadata and abstract information for one or more affected network elements from network database.

Group 2, claim(s) 7, 10, 11, 12, drawn to verification of data send to database.

Group 3, claim(s) 1-6, 8-9, 13-14, 17-26, drawn to automatically generate configuration data.

The inventions listed as Groups 1, 2, and 3 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

As per Group 1, Group 1 deals with abstract information (metadata) other than automatically generated configuration data is involved in the invention. This deals with topology of the network in an abstract level rather than updating database files.

As per Group 2, Group 2 deals with verification technique is used as a checking step for updating the database, to make sure configuration data is consistent with the packet network.

As per Group 3, Group 3 deals with automatically generation of configuration data for various network elements via the functionality of a database.