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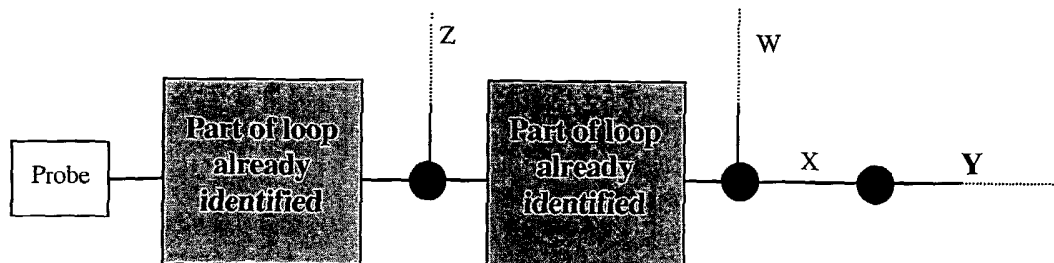
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ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: METHOD AND SYSTEM FOR IMPROVED SINGLE-ENDED LOOP MAKE-UP IDENTIFICATION



(57) Abstract: In a method and system for determining the composition of a subscriber loop, the method consists of analyzing the echo responses generated by the transmittal of pulses onto the subscriber loop. In the method, discontinuities along a loop are identified sequentially by comparing the measured waveform to waveforms generated on the basis of a hypothesized topology. The best match for the waveform is identified using a maximum likelihood approach and a maximum a-posteriori probability (MAP) estimator using observed knowledge regarding the loop plant. A multiple path search is also utilized to improve results and reduce computation time. Once the generated waveform that best matched the measured data had been found and a discontinuity identified, the waveform generated is subtracted from the measured data to produce a compensated waveform, which is used to detect the location and cause of the next echo. A calibration method is implemented to further improve data acquisition.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/15297

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01R 13/00

US CL : 702/66

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. : 702/66,69-71,74,87,97,117; 375/220; 379/3; 709/232

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/0016770 A1 (TRANS et al.) 23 January 2003 (23.01.2003), see entire document.	1-10
A,E	US 6,744,854 B2 (BERRIER et al.) 01 June 2004 (01.06.2004), see entire document.	1-10
A,P	US 6,668,041 B2 (KAMALI et al.) 23 December 2003 (23.12.2003), see entire document.	1-10

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

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Continuation of B. FIELDS SEARCHED Item 3:

USPAT, USPGPUB: search terms, subscriber & loop & cable & transmit\$4 & pulse & topolog\$4 & waveform & compar\$4 & echo,
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