

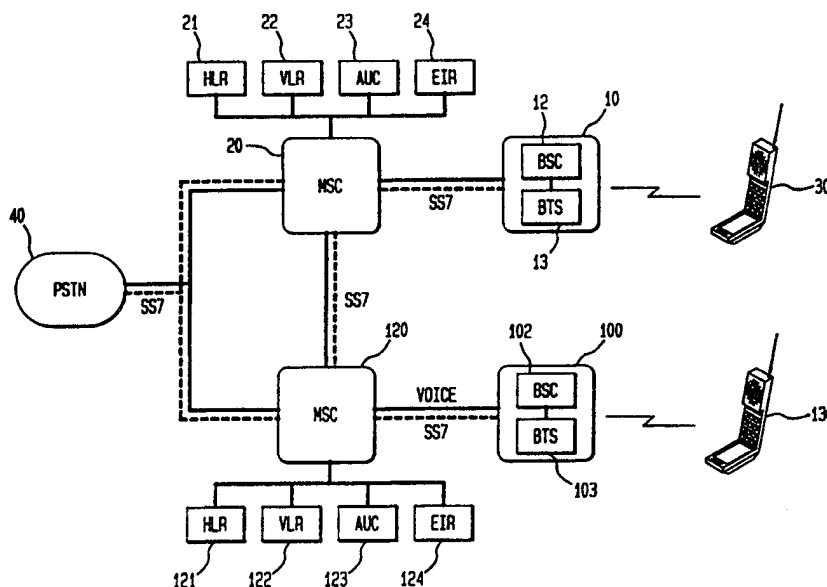
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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**(54) Title: DETECTION OF FRAUDULENTLY REGISTERED MOBILE PHONES**

**(57) Abstract**

A system and method are provided for detecting fraudulent use of a unique identifier associated with an authorized mobile station in a wireless telecommunications network. A monitoring system passively collects data associated with the registration of one or more mobile stations utilizing the unique identifier. A fraud detection processor analyzes the collected data using a first pattern recognition device. The pattern recognition device determines the periodicity of successive registration messages associated with the unique identifier of the authorized mobile station and a suspected fraudulent event is identified when the time between successive registration



messages is non-periodic. A second pattern recognition device may be utilized alone or in combination with the first pattern recognition device to identify suspected fraudulent activity when an apparent velocity of the mobile station utilizing the unique identifier between successive registration messages exceeds a predetermined maximum velocity. The apparent velocity is based upon the approximated geographical distance and time between successive registration messages. Upon the detection of a suspected fraudulent event by the first and/or second pattern recognition devices, an authentication system may be utilized to identify a suspected mobile station as an unauthorized mobile station when a response to an authentication challenge received from the suspected mobile station is not substantially the same as a predicted response calculated by the authentication system based upon at least the unique identifier of the authorized mobile station.

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/00441

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 H04Q7/38

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)

IPC 6 H04Q

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

Electronic data base consulted during the international search (name of data base and, where practical, 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	WO 96 15643 A (TELEFONAKTIEBOLAGET LM ERICSSON) 23 May 1996 see figure 9B see page 35, line 35 - page 36, line 23 see page 37, line 9 - line 18 see page 45, line 2 - line 11	1
A	*Idem*	2,4,5,9, 13,14, 20,24,28
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A	EP 0 336 079 A (MOTOROLA INC.) 11 October 1989 see claim 1	6

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

☒ Patent family members are listed in annex.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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