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(54) Title: METHODS AND APPARATUS FOR REDUCING THE EFFECTIVENESS OF CHOSEN LOCATION ATTACKS IN A PEER-TO-PEER OVERLAY NETWORK

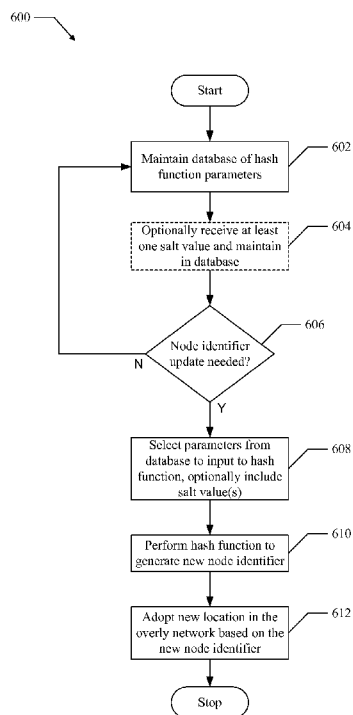


FIG. 6

(57) Abstract: Methods and apparatus for reducing the effectiveness of chosen location attacks in a peer-to-peer overlay network. A method includes determining that new node identifiers are to be generated for a plurality of nodes in the network, inputting parameters to a hash function to generate a selected node identifier, and adopting a location in the network associated with the selected node identifier. Another method includes receiving a node identifier associated with a selected node, inputting parameters associated with the selected node to a hash function to generate a corresponding node identifier, comparing the node identifier with the corresponding node identifier, and determining that the selected node is a potential attacker if the node identifiers do not match. Another method includes detecting responsibility for initiating an update to one or more node identifiers, generating parameters to generate the node identifiers, and transmitting the parameters on the network.



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GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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

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**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/064693 A1 (PABLA KULDIPSINGH A [US] ET AL) 1 April 2004 (2004-04-01) abstract paragraph [0014] - paragraph [0016] paragraph [0090] - paragraph [0105] paragraph [0112] paragraph [0125] paragraph [0349] paragraph [0484] paragraph [0498] paragraph [0608] - paragraph [0609] paragraph [0732] claims 1,4  -----  -/--	1-56

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	*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
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*O* document referring to an oral disclosure, use, exhibition or other means	*Z* document member of the same patent family
*P* document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Kopp, Klaus

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## C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Information on patent family members

International application No <b>PCT/US2009/048046</b>
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US 2004064693	A1	01-04-2004	NONE																																																																				
EP 1906616	A1	02-04-2008	NONE																																																																				
EP 1361728	A2	12-11-2003	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">AU</td> <td style="width: 40%;">2003203717</td> <td style="width: 10%;">A1</td> <td style="width: 30%;">13-11-2003</td> </tr> <tr> <td>BR</td> <td>0301300</td> <td>A</td> <td>17-08-2004</td> </tr> <tr> <td>CA</td> <td>2424067</td> <td>A1</td> <td>29-10-2003</td> </tr> <tr> <td>CN</td> <td>1455569</td> <td>A</td> <td>12-11-2003</td> </tr> <tr> <td>JP</td> <td>2004030610</td> <td>A</td> <td>29-01-2004</td> </tr> <tr> <td>MX</td> <td>PA03003318</td> <td>A</td> <td>29-10-2004</td> </tr> <tr> <td>NO</td> <td>20031496</td> <td>A</td> <td>30-10-2003</td> </tr> <tr> <td>PL</td> <td>359916</td> <td>A1</td> <td>03-11-2003</td> </tr> <tr> <td>RU</td> <td>2320008</td> <td>C2</td> <td>20-03-2008</td> </tr> <tr> <td>US</td> <td>2003204742</td> <td>A1</td> <td>30-10-2003</td> </tr> <tr> <td>US</td> <td>2008295170</td> <td>A1</td> <td>27-11-2008</td> </tr> <tr> <td>US</td> <td>2009006849</td> <td>A1</td> <td>01-01-2009</td> </tr> <tr> <td>US</td> <td>2006179139</td> <td>A1</td> <td>10-08-2006</td> </tr> <tr> <td>US</td> <td>2006161657</td> <td>A1</td> <td>20-07-2006</td> </tr> <tr> <td>US</td> <td>2006174005</td> <td>A1</td> <td>03-08-2006</td> </tr> <tr> <td>US</td> <td>2007168512</td> <td>A1</td> <td>19-07-2007</td> </tr> <tr> <td>ZA</td> <td>200302690</td> <td>A</td> <td>13-10-2003</td> </tr> </table>	AU	2003203717	A1	13-11-2003	BR	0301300	A	17-08-2004	CA	2424067	A1	29-10-2003	CN	1455569	A	12-11-2003	JP	2004030610	A	29-01-2004	MX	PA03003318	A	29-10-2004	NO	20031496	A	30-10-2003	PL	359916	A1	03-11-2003	RU	2320008	C2	20-03-2008	US	2003204742	A1	30-10-2003	US	2008295170	A1	27-11-2008	US	2009006849	A1	01-01-2009	US	2006179139	A1	10-08-2006	US	2006161657	A1	20-07-2006	US	2006174005	A1	03-08-2006	US	2007168512	A1	19-07-2007	ZA	200302690	A	13-10-2003
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