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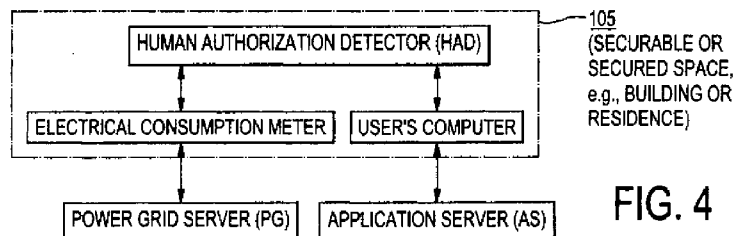


FIG. 4

(57) Abstract: A secure communications and location authorization system using a power line or a portion thereof as a side-channel that mitigates man-in-the-middle attacks on communications networks and devices connected to those networks. The system includes a power grid server associated with a substation, or curb-side distribution structure such as a transformer, an electric meter associated with a structure having electric service and able to communicate with the power grid server, a human authorization detector input device connected to the electric meter and the power grid server. The human authorization detector is able to receive an input from a user physically located at the structure and capable of communicating with the power grid server via the electric meter. The user's physical input into the device causing a request to be sent to the power grid server that then generates a location certificate for the user. Without the location certificate, access to the communications network and devices connected to those networks can be denied.



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A. CLASSIFICATION OF SUBJECT MATTER**H04L 9/32(2006.01)i**

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B. FIELDS SEARCHED

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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

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eKOMPASS(KIPO internal) & Keywords: "PLC", homeplug*, homePNA*, smart*, power*, electric*, grid*, meter*, gauge*, location*, position*

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005-0005150 A1 (BALLARD THOMAS VANCE) 06 January 2005 See abstract; figures 1,7-10; paragraphs [0034]-[0039],[0073]-[0096]; claims 1,10-11.	1-86
A	US 2003-0167178 A1 (MICHAEL JARMAN et al.) 04 September 2003 See abstract; figures 2-4; paragraphs [0042]-[0049]; claims 1,7,18-20.	1-86
A	US 2006-0038662 A1 (MELVIN WHITE et al.) 23 February 2006 See abstract; figure 2; paragraphs [0039]-[0042],[0063]-[0065].	1-86
A	US 2003-0151491 A1 (FABRICE MARTIN et al.) 14 August 2003 See abstract; figures 1-7; paragraphs [0030]-[0040],[0107]-[0140]; claims 1-11.	1-86

 Further documents are listed in the continuation of Box C. See patent family annex.

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