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(71) Applicant (for all designated States except US): **THE BOEING COMPANY** [US/US]; 100 North Riverside Plaza, Chicago, IL 60606-2016 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KETTERING, Chris, B.** [US/US]; 12806 NE 70th Place, Kirkland, WA 98033 (US). **MOORE, Daniel, B.** [US/US]; 10341 NE 141st St, Bothell, WA 98011-5216 (US). **HUNTER, Freelon, F.** [US/US]; 25001 180th Ave. SE, Kent, WA 98042 (US). **TOOLSON, Jeffery, L.** [US/US]; 13818 48th Dr NE, Marysville, WA 98271 (US). **ROYALTY,**

**Charles, D.** [US/US]; 4605 130th Ave SE, Bellevue, WA 98006-2009 (US). **JACOBS, Michael, N.** [US/US]; 7293 Maxwellton Rd., Clinton, WA 98236 (US).

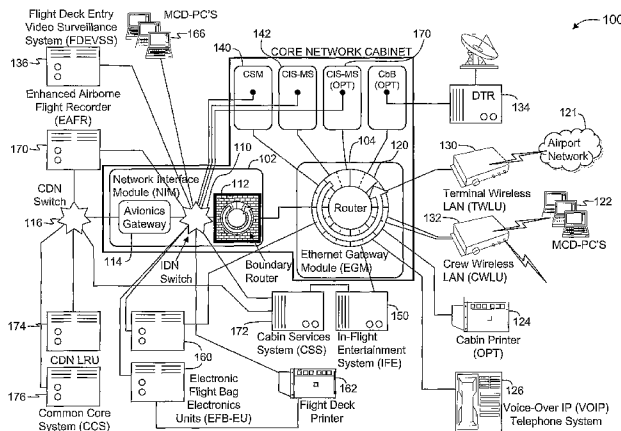
(74) Agent: **TSUDA, Diane, M.**; The Boeing Company, MC 110-SD54, P.O. Box 2515, Seal Beach, CA 90740-1515 (US).

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[Continued on next page]

(54) Title: METHODS AND APPARATUS PROVIDING AN AIRBORNE E-ENABLED ARCHITECTURE AS A SYSTEM OF SYSTEMS



(57) Abstract: A network architecture for implementation in a vehicle is described that comprises an Ethernet gateway module (EGM) and network interface module (NIM). The EGM comprises an Ethernet switch and router therein and is configured to provide an open data network (ODN) connection to the network architecture for a plurality of open data network devices. The NIM is configured to provide an isolated data network and comprises an Ethernet switch to connect a plurality of secure devices to an isolated data network (IDN), the secure devices related to operation and navigation of the vehicle, a router and a gateway/router. The router is configured to interface the IDN to the open data network connections and comprises a packet filtering function to determine which, if any, data from the ODN may be passed through to the IDN and applied to operation and navigation of the vehicle via the secure devices connected to the IDN. The gateway/router provides network address and protocol translation to connect the IDN to a secure common data network associated with vehicle operation. The architecture provides segregation between network devices in the IDN and CDN related to operation and navigation of the vehicle, and network devices in the ODN.

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<b>B. FIELDS SEARCHED</b>				
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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) <b>EPO-Internal</b>				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
<b>X</b>	<p>THANTHRY N ET AL: "Aviation data networks: security issues and network architecture" SECURITY TECHNOLOGY, 2004. 38TH ANNUAL 2004 INTERNATIONAL CARNAHAN CONFERENCE ON ALBUQUERQUE, NM, USA OCT. 11-14, 2004, PISCATAWAY, NJ, USA, IEEE, 11 October 2004 (2004-10-11), pages 77-81, XP010776208 ISBN: 0-7803-8506-3 the whole document</p> <p style="text-align: center;">----- -/--</p>	<b>1-25</b>		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <span style="margin-left: 200px;"><input type="checkbox"/> See patent family annex.</span>				
<p>* Special categories of cited documents :</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;"> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="width: 50%; border: none; vertical-align: top;"> <p>"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</p> <p>"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</p> <p>"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.</p> <p>"&amp;" document member of the same patent family</p> </td> </tr> </table>			<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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.</p> <p>"&amp;" document member of the same patent family</p>
<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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.</p> <p>"&amp;" document member of the same patent family</p>			
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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, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  <b>MARTINOZZI, A</b>			

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PCT/US2006/045593

G(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>PATRICK SCHUSTER: "Integrated Modular Avionics &amp; APEX standards" ANNOUNCEMENT AEEC, XX, XX, 13 October 2002 (2002-10-13), pages 1-13, XP002427573 page 5 page 6 page 8 page 11 - page 12</p> <p style="text-align: center;">-----</p>	1-25
A	<p>WARGO C A ET AL: "Security consideratiolis for the e-enabled aircraft" AEROSPACE CONFERENCE, 2003. PROCEEDINGS. 2003 IEEE MARCH 8-15, 2003, PISCATAWAY, NJ, USA, IEEE, vol. 4, 8 March 2003 (2003-03-08), pages 41533-41550, XP010660380 ISBN: 0-7803-7651-X the whole document</p> <p style="text-align: center;">-----</p>	1-25