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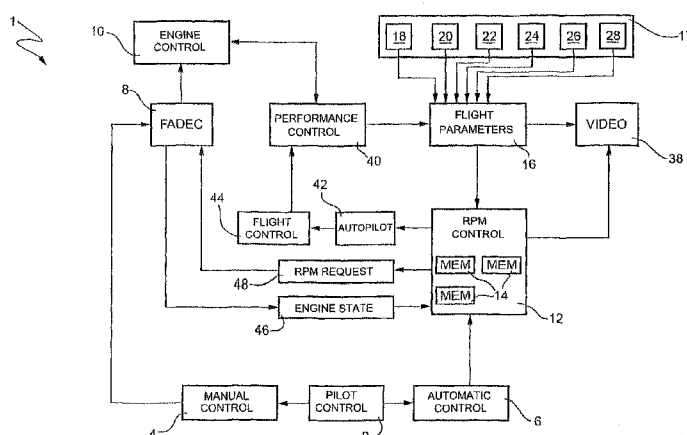


FIG. 1

(57) Abstract: An electronic flight control system (1) for an aircraft (100) capable of hovering and having at least one rotor (102; 104). The flight control system (1) is configured to operate in a manual flight control mode, in which the flight control system (1) controls rotor speed in response to direct commands from the pilot; and in at least two automatic flight control modes corresponding to respective flight modes of the aircraft, and in which the flight control system (1) controls rotor speed automatically on the basis of flight conditions. The flight control system (1) is also configured to memorize, for each automatic flight control mode, a respective flight table relating different speed values of the rotor to different values of at least one flight quantity; and to automatically control rotor speed in the automatic flight control modes on the basis of the respective flight tables.

## INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER  
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Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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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. |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| A         | WO 2008/048245 A2 (SIKORSKY AIRCRAFT CORP [US]) 24 April 2008 (2008-04-24)<br>cited in the application<br>the whole document<br>----- | 1-12                  |
| A         | US 2008/234881 A1 (CHEREPINSKY IGOR [US] ET AL) 25 September 2008 (2008-09-25)<br>the whole document<br>-----                         | 1-12                  |
| A         | US 2006/253230 A1 (FANCIULLO TODD M [US] ET AL) 9 November 2006 (2006-11-09)<br>the whole document<br>-----                           | 1-12                  |



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# INTERNATIONAL SEARCH REPORT

Information on patent family members

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| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|-------------------------------------------|---------------------|----------------------------|---------------------|
| WO 2008048245 A2                          | 24-04-2008          | CA 2627998 A1              | 24-04-2008          |
|                                           |                     | EP 1946224 A2              | 23-07-2008          |
|                                           |                     | US 2007118254 A1           | 24-05-2007          |
| -----                                     |                     |                            |                     |
| US 2008234881 A1                          | 25-09-2008          | EP 2134598 A2              | 23-12-2009          |
|                                           |                     | WO 2008137217 A2           | 13-11-2008          |
| -----                                     |                     |                            |                     |
| US 2006253230 A1                          | 09-11-2006          | CN 101495369 A             | 29-07-2009          |
|                                           |                     | EP 1877930 A2              | 16-01-2008          |
|                                           |                     | JP 2008540218 A            | 20-11-2008          |
|                                           |                     | WO 2007084170 A2           | 26-07-2007          |
| -----                                     |                     |                            |                     |