Experimental Aviation of Switzerland
technical instruction #3

Electronic Flight Instruments
for VFR day condition

This technical information leaflet acts as a guideline for the use of electronic flight instruments in experimental airplanes in parallel or instead of mechanical standard flight instruments.

VFR flights minimal equipment:

JAR/FAR/CS23, JAR-VLA:

23.1303: flight and navigational instruments
-airspeed
-altimeter
-non stabilized magnetic direction indicator

An electronic flight instrument can be used in an experimental aircraft under the following conditions and in accordance with JAR/FAR/CS23.1311:

- no negative interference with other equipment (EMI).

- clear visibility of the display under direct sunlight.

- clearly visible to all flight crew positions (in side by side seating).

- the airspeed system must be calibrated and comply with the applicable tolerances.

- the altitude system must be calibrated and comply with the applicable tolerances.

- the magnetic indication system must be calibrated and comply with the applicable tolerances.

- the visual display incorporates all necessary markings of standard instruments.

- the visual flight display must not inhibit the primary engine parameters.

- electronic instruments must "flag" if the source is no longer reliable.

- minimum backup requirement is a speed indication for a save ending of a flight (the position shall comply with 23.1321(a)). A non stabilized magnetic direction indicator is also needed. Altitude backup can be waved, if the primary instrument has a failure rate $< 10^{-3}$ failures / h and the software is according DO-178B Level D.

  - if the backup is also an electronic instrument, it must be fed by an electric source independent from the main power system and needs to provide a minimal endurance of 30 minutes.

- Installation and operation (including setup/calibration) must be done according to the manufactures instruction.