English Translation Version for Reference Only

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Approved by：Xu Chaoqun

China Civil Aviation Technical Standard Order

This China Civil Aviation Technical Standard Order (CTSO) is issued according to Part 37 of the China Civil Aviation Regulations (CCAR-37). Each CTSO is a criterion which the concerned aeronautical materials, parts or appliances used on civil aircraft must comply with when it is presented for airworthiness certification.

AIRBORNE NAVIGATION DATA STORAGE SYSTEM

1. Purpose.

This China Civil Aviation Technical Standard Order (CTSO) is for manufacturers applying for airborne navigation data storage systems CTSO authorization (CTSOA). This CTSO prescribes the minimum performance standards (MPS) that airborne navigation data storage systems must meet for approval and identification with the applicable CTSO marking.

2. Applicability.

This CTSO affects new application submitted after its effective date. Major design changes to article approved under this CTSO will require a new authorization in accordance with section 21.353 of CCAR-21R4.

3. Requirements

New models of airborne navigation data storage system identified

and manufactured on or after the effective date of this CTSO must meet the Global Systems, Inc., document “Minimum Performance Standard (MPS) for the Airborne Navigation Data Storage/Systems,” dated March 31, 1983.

a. Environmental Qualification.

Demonstrate the required performance under the test conditions specified in RTCA/DO-160G, titled Environmental Conditions and Test Procedures for Airborne Equipment, using standard environmental conditions and test procedures appropriate for airborne equipment. Applicant may use a different standard environmental condition and test procedure than RTCA/DO-160G, provided the standard is appropriate for the FIS-B equipment.

Note: The use of RTCA/DO-160D (with Changes 1 and 2 only, incorporated) or earlier versions is generally not considered appropriate and will require substantiation via the deviation process as discussed in paragraph 3.d of this CTSO.

b. Software Qualification.

If the article includes software, develop the software according to RTCA/DO-178B, Software Considerations in Airborne Systems and Equipment Certification, dated December 1, 1992.

c. Electronic Hardware Qualification.

If the article includes complex airborne electronic hardware, develop

the component according to RTCA/DO-254, dated April 19, 2000, Design Assurance Guidance for Airborne Electronic Hardware For airborne electronic hardware determined to be simple, RTCA/DO-254, paragraph 1.6 applies.

d. Deviations.

For using alternative or equivalent means of compliance to the criteria in this CTSO, the applicant must show that the equipment maintains an equivalent level of safety. Apply for a deviation under the provision of 21.368(a) in CCAR-21R4.

4. Marking.

a. Mark at least one major component permanently and legibly with all the information in 21.423(b) of CCAR-21R4. The marking must include the serial number. The environmental categories in which it has been qualified to operate in accordance with RTCA document DO-160B shall be legibly and permanently marked on the major equipment component.

b. Also, mark the following permanently and legibly, with at least the manufacturer’s name, subassembly part number, and the CTSO number:

(1) Each component that is easily removable (without hand tools); and,

(2) Each subassembly of the article that manufacturer determined may be interchangeable.

c. If the article includes software and/or airborne electronic hardware, then the article part numbering scheme must identify the software and airborne electronic hardware configuration. The part numbering scheme can use separate, unique part numbers for software, hardware, and airborne electronic hardware.

d. The applicant may use electronic part marking to identify software or airborne electronic hardware components by embedding the identification within the hardware component itself (using software) rather than marking it on the equipment nameplate. If electronic marking is used, it must be readily accessible without the use of special tools or equipment.

NOTE: If unit is too small to include such marking, the requirements of 21.423(b) of CCAR-21R4, may be met by placing the information on an attached tag.

5. Application Data Requirements.

The applicant must furnish the responsible certification personnel with the related data to support design and production approval. The application data include a statement of conformance as specified in section 21.353(a)(1) in CCAR-21R4 and one copy each of the following

technical data:

a. Operating instructions.

b. Equipment limitations.

c. Installation procedures and limitations.

d. Schematic drawings as applicable to the installation procedures.

e. Wiring diagrams as applicable to the installation procedures.

f. List of the major components (by part number) that make up the equipment system complying with the standards prescribed in this CTSO.

g. Manufacturer's CTSO qualification test report.

h. Nameplate drawing.

6. Manufacturer Data Requirements.

Besides the data given directly to the authorities, have the following technical data available for review by the authorities:

a. A drawing list, enumerating all the drawings and processes that are necessary to define the article design.

b. The functional test specification to be used to test each production article to ensure compliance with this CTSO.

c. Equipment calibration procedures.

d. Corrective maintenance procedures (within 12 month after CTSO authorization).

f. Schematic drawings.

7. Furnished Data Requirements.

If furnishing one or more articles manufactured under this CTSO to one entity (such as an operator or repair station), provide one copy or technical data and information specified in paragraphs 5.a and 5.h of this CTSO. Add any data needed for the proper installation, certification, use, or for continued compliance with the CTSO, of the airborne navigation data storage systems.

8. Availability of Referenced Documents.

(1) Order RTCA documents from:

Radio Technical Commission for Aeronautics, Inc.

1150 18th Street NW, Suite 910, Washington D.C. 20036

You may also order them online from the RTCA Internet website at: www.rtca.org.

(2) Copies of Global Systems, Inc. document “Minimum Performance Standards (MPS) for the Airborne Navigation Data Storage System,” dated March 31, 1983 may be purchased from Global Systems, Inc., 2144 Michelson Drive, Irvine, California 92715, ATTN: Production Manager, Navigation Data, Telephone: (714) 851-0119.