| Form | | - | | **CIVIL AVIATION AUTHORITY**  **Directorate General for Civil Aviation Regulation**  **Air Navigation Safety Department** | | | | |  |
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| Revision | | Initial | |
| Date | | 30 Nov 2024 | |
| **FILIGHT INSPECTION SERVICE PROVIDER**  **COMPLIANCE STATEMENT** | | | | | | | | | |
| **Date** | | **:** | | | **Applicant Name** | | | **:** | |
| **SR** | **Regulatory**  **Reference** | | **Regulatory Requirement** | | **Compliance with Regulatory Requirement** | | | **Flight Inspection Service Provider Reference Document/Manual**  **(Fill with Doc name, page , section/chapter, paragraph)** | |
| **Comply** | **Not Comply** | **Partially Comply** |
| **1** | **CAR 171 APPENDIX A**  **PART II - 1** | | **ORGANIZATION** | |  |  |  |  | |
|  |  | | **An applicant for Flight Inspection service certificate must employ, contract, or otherwise engage:**  **(1)** a person identified as the accountable manager who:   1. Has the authority within the applicant’s organization to ensure that all activities undertaken by the organization can be financed and carried out to meet applicable operational requirements; and 2. is responsible for ensuring that organization fulfil the relevant laws and regulations for Flight Inspection of Radio Navigation Aids. 3. ensure that the organization is prioritizing safety in carrying out Flight Inspection for Radio Navigation Aids. | |  |  |  |  | |
| **(2)** competent personnel in carrying out Flight Inspection of Radio Navigation (Flight Inspection Crew) and their Job description /responsibility. | |  |  |  |  | |
| **2** | **CAR 171 APPENDIX A**  **PART II -2** | | **FLIGTH INSPECTION CREW** | | | | | | |
|  |  | | 1. Flight Inspection Crew at least consist of two pilots and one or two Flight Inspection System Operator. | |  |  |  |  | |
| 1. The members of the flight inspection crew must be experts in their individual fields and certified as Flight Inspection Personnel by State Authority where the organization established, have sound knowledge and experience in flight testing / inspection procedures and requirements, and be capable of working as a team. | |  |  |  |  | |
| 1. Valid Medical and License for Crew Member | |  |  |  |  | |
| 1. The Organization shall have records and procedures for the following: 2. Procedure to assess the competence of the Flight Inspection Crew. 3. Procedure to maintain the competency of Flight Inspection Crew. | |  |  |  |  | |
| **3** | **CAR 171 APPENDIX A**  **PART II - 3** | | **FLIGHT INSPECTION MANUAL** | | | | | | |
|  |  | | 1. Policy statement and purposes of the organization; | |  |  |  |  | |
| 1. The organizational chart showing lines of responsibility between the persons specified in SR 1 | |  |  |  |
| 1. Personnel requirements specified in SR 2; | |  |  |  |
| 1. The duties and responsibilities of the senior person or persons specified in SR 2; | |  |  |  |
|  |  | | 1. Flight inspection system technical description including:   (a) Flight inspection system block diagram; and  (b) List of all flight inspection system receivers and its function, type model and date of installation | |  |  |  |  | |
|  |  | | 1. Flight inspection aircraft requirements and characteristics as specified in SR 4 | |  |  |  |  | |
|  |  | | 1. Flight Inspection system capabilities as specified in SR 6 | |  |  |  |  | |
|  |  | | 1. flight inspection operating instructions for the flight inspection crew including:   (a) The flight profile to be used for individual measurements;  (b) Pre-flight calibration of measuring system;  (c) Sitting of any necessary ground tracking or position fixing system;  (d) Operation of measuring system;  (e) Production of the flight inspection report;  (f) The production of records and graphs  (g) Production of a certificate attesting the result of a flight inspection and calibratio | |  |  |  |  | |
|  |  | | 1. Flight inspection procedures as specified in SR 13; | |  |  |  |  | |
|  |  | | 1. Maintenance procedures of the flight inspection system as specified in SR 16 | |  |  |  |  | |
|  |  | | 1. List of test equipment and Calibration procedure of Flight Inspection System and Test Equipment as specified in SR 11 | |  |  |  |  | |
| **4** | **CAR 171 APPENDIX A**  **PART II - 4** | | **FLIGHT INSPECTION AIRCRAFT** | | | | | | |
|  |  | | **1)** The organization shall have its own Flight Inspection Aircraft with:   1. Valid Aircraft Operator Certificate (AOC)/ Aircraft Operator Permit (AOP)/ other equivalent Document issued by ICAO’s member state will be accepted by DGCAR. 2. Valid Certificate of Airworthiness (CoA). 3. Valid Radio License Certificate or equivalent of it 4. Valid Aircraft Insurance 5. Noise Certificate | |  |  |  |  | |
| **(2)** Flight Inspection Aircraft shall fulfil the following characteristics:   1. Reliable, efficient type equipped and certified for IFR operations; 2. Sufficient carrying capacity for the flight crew, as well as all necessary electronic and recording equipment and spares. 3. Sufficient range and endurance to complete a normal mission without refuelling; 4. Aerodynamically stable throughout its speed range, but particularly at speeds encountered during flight inspection; 5. Low noise and vibration levels; 6. Low electrical noise characteristics to minimize interference with received signals; e.g. propeller modulation of the received signal must be as low as possible; 7. Stable electrical system of adequate capacity to operate the required electronic equipment in addition to the aircraft equipment; 8. Reasonably wide-speed and altitude range to enable flight inspection to be conducted, where possible, under the conditions encountered by users; 9. Suitable for future modifications or expansion of equipment to allow for inspection of additional aids or to increase accuracy or processing speed on existing facilities. | |  |  |  |  | |
| **5** | **CAR 171 APPENDIX A**  **PART II - 5** | | **AIRCRAFT INSTRUMENTATION** | | | | | | |
|  |  | | The flight inspection aircraft shall contain a full range of navigation equipment as required for instrument flying. Additional equipment must be provided for the monitoring and recording of the received navigation signals. The navigation receivers used by the flight inspection equipment shall be independent from the navigation equipment used by the aircraft. | |  |  |  |  | |
| **6** | **CAR 171 APPENDIX A**  **PART II - 6** | | **FLIGHT INSPECTION SYSTEM** | | | | | | |
|  |  | | 1. Service provider shall have fully automatic Flight Inspection system with the latest technology, advance feature to support inspection for new upgraded technology of Radio Navigation Aids, proven integrity and extended flexibility for future expansion. | |  |  |  |  | |
| 1. Flight Inspection Equipment shall comprise of flight inspection receivers with associated antenna, positioning fixing system, equipment for data display and processing and equipment for data recording. | |  |  |  |  | |
| 1. A VHF radio must be included in the flight inspection system in order to allow independent communication between the flight inspector and the ground crew, without affecting the pilot. | |  |  |  |  | |
| 1. Flight Inspection system shall be fully certified by Major European Civil Aviation Authority or FAA. | |  |  |  |  | |
| **7** | **CAR 171 APPENDIX A**  **PART II -7** | | **FLIGHT INSPECTION RECEIVER AND SENSOR** | | | | | | |
|  |  | | 1. Flight inspection receiver shall provide both navigation information as in standard aircraft equipment and flight inspection information. | |  |  |  |  | |
| 1. Flight inspection receivers shall include an AGC measurement to allow the determination of the filed strength when the receiver and antenna characteristic is taken into account | |  |  |  |  | |
| 1. Flight inspection receiver shall be used for the calibration of pulsed navigation facilities such as DME and radars, and provide the video signal of these facilities. | |  |  |  |  | |
| 1. Flight inspection equipment shall have its own dedicated antennas on the aircraft that are independent from the antennas used by aircraft’s own navigation equipment | |  |  |  |  | |
| 1. Flight inspection receivers must be of the highest quality in order to obtain the accuracy and integrity required for flight inspection purposes and shall provide additional measurement outputs specific to flight inspection | |  |  |  |  | |
| 1. The antenna of flight inspection receiver must be accurately placed in order to avoid interference problem. | |  |  |  |  | |
| **8** | **CAR 171 APPENDIX A**  **PART II -8** | | **POSITION FIXING SYSTEM** | | | | | | |
|  |  | | 1. The position-fixing system provides reference position (navigation) information in order to determine the navigation accuracy of the facility. | |  |  |  |  | |
| 1. The position fixing system shall generate position reference information using the same coordinate system as the navigation system under testing. | |  |  |  |  | |
| 1. The position-fixing system must be independent from the facility under testing/inspection | |  |  |  |  | |
| **9** | **CAR 171 APPENDIX A**  **PART II - 9** | | **POSITION REFERENCE SYSTEM** | | | | | | |
|  |  | | 1. Position Reference System shall provide the information for all phases of flight inspection. | |  |  |  |  | |
| 1. Position Reference System must be combination of different sensors for testing, including INSs, Radar altimeter, and GNSS augmentation as necessary. | |  |  |  |  | |
| 10 | **CAR 171 APPENDIX A**  **PART II -10** | | **DATA PROCESSING, DISPLAY AND RECORDING** | | | | | | |
|  |  | | 1. Flight inspection aircraft must be equipped includes a computer, which is used to read the data from the position-fixing sensors or system and from the flight inspection receivers and to compare the facility navigation information and the position reference information. | |  |  |  |  | |
| 1. Data generated from the flight inspection receivers and the position-fixing system are to be displayed and processed. The processing maybe performed either on-line or after completion of an inspection. | |  |  |  |  | |
| 1. The computer must have the capability of determining facility parameters, e.g. ILS localizer course width, alignment, etc. | |  |  |  |  | |
| 1. All relevant information like facility navigation information, reference information, facility error and additional receiver information, such as field strength, must be displayed on board the flight inspection aircraft for the operator. Data may be displayed on analogue or digital instruments as well as on computer screens. | |  |  |  |  | |
| 1. Chart recorders or printers shall be used for the documentation of flight inspection results. All data must be annotated properly either by the operator or automatically by the data-processing system. | |  |  |  |  | |
| **11** | **CAR 171 APPENDIX A**  **PART II -11** | | **CALIBRATION OF FLIGHT INSPECTION SYSTEM AND TEST EQUIPMENT** | | | | | | |
|  |  | | 1. Regular calibration of the flight inspection receivers and position-fixing system shall be performed in order to ensure a back tracing of data to international or national standards. | |  |  |  |  | |
| 1. The calibration may be performed either on board the flight inspection aircraft or in a laboratory. | |  |  |  |  | |
| 1. Each item of test equipment should have a documented calibration procedure and calibration records. | |  |  |  |  | |
| **12** | **CAR 171 APPENDIX A**  **PART II -12** | | **GENERAL TECHNICAL REQUIREMENT** | | | | | | |
|  |  | | Flight inspection service provider shall establish procedures to ensure that: | | | | | | |
| 1. Integration of the systems in the aircraft shall not affect the Airworthiness Certificate of the aircraft. Every modification has to be recorded in the technical documentation of the aircraft, along with the approvals of the manufacturer and of the certification state Authority concern. | |  |  |  |  | |
| 1. Particular operating instructions should be registered in flight and exploitation manuals. If this integration entails any performance limitation or operational restrictions for the aircraft, they should appear clearly in the corresponding documents | |  |  |  |  | |
| **13** | **CAR 171 APPENDIX A**  **PART II -13** | | **FLIGHT INSPECTION PROCEDURE** | | | | | | |
|  |  | | 1. flight profile / manoeuvre used in conducting of flight inspection for each facility; | |  |  |  |  | |
| 1. procedure for measurement of equipment during pre- flight inspection. | |  |  |  |  | |
| 1. Procedure for placement of position fixing equipment. | |  |  |  |  | |
| 1. Procedure for placement of ground tracking equipment. | |  |  |  |  | |
| 1. Procedure for operation of Flight Inspection Receiver for each Radio Navigation Facility. | |  |  |  |  | |
| **14** | **CAR 171 APPENDIX A**  **PART II -14** | | **DOCUMENTATION AND DATA RECORDING** | | | | | | |
|  |  | | **(1) Flight Inspection Data Recording**  Data recordings shall be archived and maintained on file with the flight inspection reports. This data shall be made available to engineering and maintenance personnel for solving site problems and for assessing trends in facility or equipment performance. | |  |  |  |  | |
| **(2)** **Flight Inspection System Calibration**  The flight inspection organization shall ensure policies and procedures are in place to track the calibration status of equipment and recall equipment for calibration at the established intervals. | |  |  |  |  | |
| 1. **Ground Facility Data**   The ground facility data shall be loaded into flight inspection system | |  |  |  |  | |
| 1. **Retention of Flight Inspection Report and Data** 2. As a minimum, all commissioning inspection reports and data recordings shall be retained in the facility file along with reports and data recording from the last five periodic inspections. 3. All special flight inspections carried out during this time period shall be retained on file. | |  |  |  |  | |
| **15** | **CAR 171 APPENDIX A**  **PART II -15** | | **FLIGHT INSPECTION REPORT** | | | | | | |
|  |  | | The minimum information to be provided on the final flight inspection report shall be: | | | | | | |
| 1. Station name and facility designation; | |  |  |  |  | |
| 1. Category of operation; | |  |  |  |  | |
| 1. Date of inspection; | |  |  |  |  | |
| 1. Unique serial number of reports; | |  |  |  |  | |
| 1. Type of inspection e.g. commissioning, routine or annual, special; | |  |  |  |  | |
| 1. Aircraft registration; | |  |  |  |  | |
| 1. Manufacturer, type and frequency of system being inspected; | |  |  |  |  | |
| 1. Names and functions of all personnel involved in the inspection; | |  |  |  |  | |
| 1. Results of all measurements made; | |  |  |  |  | |
| 1. Method of making each measurement | |  |  |  |  | |
| 1. Details of associated attachments (recordings, etc.) | |  |  |  |  | |
| 1. Details of extra flights made necessary by system adjustments; | |  |  |  |  | |
| 1. an assessment by the flight crew of the navigational aid performance; | |  |  |  |  | |
| 1. Comments by the flight Inspector/equipment operator; | |  |  |  |  | |
| 1. Details of any immediately notifiable deficiencies; | |  |  |  |  | |
| 1. Results and tolerances; | |  |  |  |  | |
| 1. Statement of conformance / nonconformance; and | |  |  |  |  | |
| 1. Signature of the individual who is legally responsible. | |  |  |  |  | |
| **16** | **CAR 171 APPENDIX A**  **PART II -16** | | **FLIGHT INSPECTION MAINTENNACE PROCEDURE** | | | | | | |
|  |  | | 1. Procedures for managing spares in relation to the flight inspection system; | |  |  |  |  | |
| 1. Procedures for recording system malfunction and taking subsequent action; and | |  |  |  |  | |
| 1. Procedures for preventive maintenance of the flight inspection system conforming with manufacture's maintenance instructions . | |  |  |  |
| **17** | **CAR 171 APPENDIX A**  **PART II -17** | | **QULAITY ASSURANCE** | | | | | | |
|  |  | | 1. Each applicant for flight inspection service provider certificate shall establish an internal quality management system to ensure compliance with, and the adequacy of, the procedures required by this CAR as approved by the Authority; | |  |  |  |  | |
| (2) The internal quality management system shall include: | | | | | | |
| (a) An inspection policy; | |  |  |  |  | |
| (b) Inspection procedures that are understood, implemented, and maintained at all levels of the organization; | |  |  |  |  | |
| (c) A procedure to ensure quality control indicators, including maintenance records, defect, interference and incident reports, and personnel and customer feedback, are monitored to implement required performance standards and to identify existing problems or potential causes of problems within the system; | |  |  |  |  | |
| (d) A procedure for corrective action specifying how to:  (i) Correct an existing problem;  (ii) Follow up a corrective action to ensure the action is effective; and  (iii) Measure the effectiveness of any corrective action taken. | |  |  |  |  | |
| (e) A procedure for preventive action specifying how to manage a potential problem; | |  |  |  |  | |