Recommended Qualification Requirements for Flight Inspection Service Providers

Rev. 0 24th April 2014

Prepared by:
ICASC Technical Working Group

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Revision	Amendment	Date	Comments

1 Table of Contents

2 Introduction

2.1.1.1 ICAO Annex 10 Volume 1 requires that Navigational Aids are routinely flight inspected. Doc 8071 provides guidance on how to conduct the flight inspection. Doc 8071 also provides some guidance on the make-up of flight inspection organisation. This includes People, Equipment and Procedures.

2.1.1.2 To date there are no internationally agreed standards for the oversight of flight inspection service providers, some states do provide oversight of the service providers through locally produced regulatory material. During the tendering stage for a flight inspection contract the Air Navigation Service Provider may require that the flight inspection service provider is approved by their CAA. This may cause problem for states which do not provide oversight of the flight inspection service providers.

2.1.1.3 As flight inspection is considered to be a maintenance activity there is a general requirement that the flight inspection arrangement should be fit for their intended purpose. As a result of feedback from several International Flight Inspection Symposia the ICASC has decided to provide guidance to the industry on the subject of Requirements for Flight Inspection Service Providers.

3 Purpose of this Document

3.1.1.1 The purpose of this document is to provide Recommended Qualification Requirements for Flight Inspection Service Providers for either a state CAA to implement into its own regulatory regime or for an individual flight inspection service provider to use for some form of self-declaration in the absence of any state requirement.

4 Scope

4.1.1.1 The scope of this paper covers measurement of the Signal in Space of a Navigational Aid. The paper does not include Procedure Validation as detailed in Doc 9906 Volume 5.

5 Capabilities

5.1.1.1 A Flight Inspection Service Provider shall be capable of:

a) Using flight inspection techniques to measure accurately the signals in space radiated by those navigational aids which they are intending to inspect.
b) Evaluating the measured signals with respect to applicable standards and tolerances which should be established by the local regulator. Examples of typical standards are ICAO (Doc 8071 and Annex 10), or FAA 8200.1, or UK CAP 670.
c) Communicating with ground engineers and technicians to advise if any adjustments are required to the equipment being inspected.
d) Providing a flight inspection report to the customer.

Note: The extent to which the Flight Inspection Service Provider provides information and guidance regarding the Navaid setting up to the ground engineer varies from state to state. This may mean that Flight Inspector competence could be different from one organisation to another.

6 Approval Procedure

6.1.1.1 Applicants shall detail the overall Flight Inspection operation in an Exposition. The Exposition shall include evidence based demonstration that each of the requirements detailed below or set by the local regulator are adequately met.

6.1.1.2 A practical demonstration of the Flight Inspection Operation may be necessary to demonstrate the performance of the Inspection Service. A practical demonstration does not replace the evidence based demonstration of the requirements. Details of a practical demonstration can be found in Appendix 1.

6.1.1.3 The Exposition should include references to associated documentation as appropriate.

6.1.1.4 The exposition should address how the provider uses design, process monitoring, training and procedures to ensure the quality of the Flight Inspection results.

6.1.1.5 The Exposition should be Approval by the accountable manager. Details of the Accountable Manager can be found in Appendix 2: Accountable Manager.

7 Applicable Standards

7.1 Doc 8071

7.1.1.1 The flight inspection should comply with the guidance and recommendations given in ICAO Doc 8071 to support the measurement of the parameters in ICAO Annex 10 Volume 1. Alternative methods may be proposed in the exposition as long as it is demonstrated that it meets the specific objective of Doc 8071 or Annex 10.

7.1.1.2 ICAO DOC 8071 provides tables with flight inspection requirements and tolerances for each type of navigation aid and a summary of the table headings is provided in Table 1.

#	Facility	Flight inspection requirements in Doc 8071
1	VOR	Table I-2-3. Summary of flight inspection requirements — VOR
2	DME	Table I-3-3. Summary of flight test requirements — DME
3	LOC	Table I-4-7. Flight inspection requirements and tolerances for localizer Category (Cat) I, II and III
4	GP	Table I-4-8. Flight inspection requirements and tolerances for glide path Categories (Cat) I, II and III
5	MKR	Table I-4-9. Flight inspection requirements and tolerances for ILS marker beacons
6	NDB	Table I-5-3. Summary of flight test requirements for non-directional beacons

Table 1: Doc 8071 Flight Inspection Tolerances

8 Exposition

8.1 Content

8.1.1.1 The content of the Exposition should detail the overall Flight Inspection operation. The following sections provide some headings that would normally be included in an Exposition. The detail is not exhaustive and may vary from one flight inspection operator to another.

8.1.1.2 The headings assume that the flight inspection organisation does have a Quality Management System. The most appropriate headings that would normally be contained in a Quality Management System have been included.

9 Scope of Tasks.

9.1.1.1 It is important that the exposition clearly identifies the scope of tasks that the exposition covers. This would include the types of navigational aids to be inspected, category of operation (for ILS) and the types of inspection e.g. routine or commissioning.

10 Organisation

10.1 Organisation name

10.1.1.1 This should be the name that the flight inspection organisation trades under. This would normally be the legal entity.

10.2 Contact details

10.2.1.1 Address, Email and Telephone Contacts.

10.3 Flight Inspection Organisational Chart

10.3.1.1 An organisational Chart should be provided detailing the roles that make up the flight inspection organisation. This should show the reporting lines up the accountable manager or board as appropriate. It is sometimes also necessary to show functions within the organisation; this is typically the case where several people perform the same task. For example surveying.

10.4 Interfaces with other internal departments and divisions

10.4.1.1 Where the flight inspection operation is part of a larger organisation it is important to ensure that all contributing departments, divisions or other organization involved directly or indirectly with the flight inspection operation comply with the flight inspection organisations exposition or quality management system as appropriate.

11 Personnel Responsibilities

11.1 Objective

11.1.1.1 The Organisation shall ensure that all personnel concerned with the flight inspection are competent to conduct their job functions.

11.2 Acceptable Mean of Compliance

11.2.1.1 The organization should establish a written procedure for determining required job competencies and continued competence checking of all personnel through regular assessment.

11.2.1.2 The procedure should consider all personnel directly engaged in the flight inspection operation, this includes but is not limited to the pilot (in terms of

flying the correct flight inspection procedure), flight inspector, surveyor, documentation controller and auditor.

11.2.1.3 Flight inspection methods and strategies vary according to the type of equipment and procedure to be inspected. Consequently different types of qualification must be considered such as ILS, VOR, NDB, MLS, commissioning or routine inspection.

11.2.1.4 The organisation shall maintain records of competency including any on-going competency checking.

12 Change Process

12.1 Objective

12.1.1.1 The organisation shall ensure that all changes to the flight inspections operations are assessed and recorded.

12.2 Acceptable Means of Compliance

12.2.1.1 The organisation shall establish procedures for, assessing and documenting changes to all areas of the operation, this would normally include but is not limited to the:

a) Organisational changes
b) System changes
c) Procedure changes

12.2.1.2 Changes shall be identified and records maintained. The changes shall be reviewed, verified and validated, as appropriate, and approved before implementation. The review shall include evaluation of the effect of the changes on the flight inspection operation.

12.2.1.3 Records should be established to provide evidence of conformity to requirements and of the effective operation of the QM system shall be controlled, identifiable, stored, retrievable and protected according to procedure description (9001-4.2.4).

12.2.1.4 Documents required by the QM system shall be controlled according to established procedures to ensure proper handling of revision and changes (9001-4.2.3).

12.2.1.5 Design and development changes shall be identified and records maintained. The changes shall be reviewed, verified and approved before implementation (9001-7.3.7).

12.2.1.6 Significant equipment modifications and renewal might still need approval by the principal or the CAA before implementation.

13 Documentation Control

13.1 Objective

13.1.1.1 The organisation shall ensure that all documents that support the flight inspection operation should be controlled so that the correct version of any document can be easily identified and used.

13.2 Acceptable Means of Compliance

13.2.1.1 A documented procedure shall be established to define the controls needed

a) to approve documents for adequacy prior to issue,
b) to review and update as necessary and re-approve documents,
c) to ensure that changes and the current revision status of documents are identified,
d) to ensure that relevant versions of applicable documents are available at points of use,
e) to ensure that documents remain legible and readily identifiable,
f) to ensure that documents of external origin determined by the organization to be necessary for the planning and operation of the quality management system are identified and their distribution controlled, and
g) to prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose.

14 Auditing

14.1 Objective

14.1.1.1 The organisation shall plan and implement the monitoring, measurements, analysis and improvement processed needed to ensure conformity of the QM system.

14.2 Acceptable Means of Compliance

14.2.1.1 To ensure consistent meeting of customer requirements and continual improvement of the QM system, the audit schedule must at least identify the following action items:

a) Internal audits.
b) Customer satisfaction monitoring.
c) Management reviews.
d) Audits with independent certification body.
e) External audits with sub-contractors, CAA and/or customer as appropriate.

15 Control of Sub-Contractors

15.1 Objective

15.1.1.1 The organisation shall ensure that sub-contractors are controlled.

15.2 Acceptable Means of Compliance

15.2.1.1 The organisation shall evaluate and select sub-contractors based on their ability to supply products and services in accordance with the organisation's exposition.

15.2.1.2 Criteria for selection, evaluation and re-evaluation shall be established.

15.2.1.3 Records of the results of evaluations and any necessary actions arising from the evaluation shall be maintained.

15.2.1.4 The types of organisations that would be considered under this heading include:

a) Test equipment calibration company.
b) Other flight inspection organisations.
c) Contracted Personal (e.g. Pilots, Flight Inspectors).

15.2.1.5 The same requirements for documents and records must be established and maintained by sub-contractors as appropriate, and verified by auditing. This task will normally be simplified if the sub-contractors have equal QM system.

15.2.1.6 Monitoring of Subcontractor performance metrics covering areas such as reporting, testing and acceptance, issue resolution and mitigation and documentation version control.

15.2.1.7 A clearly written and well managed procedure defining all of the responsibilities associated with the role of a subcontractor or supplier will not only result in the success of the primary organization and their customer, but it will create a positive relationship with the other company or individual themselves. This procedure must contain the following key components:

a) A Source/Selection plan which establishes all guidelines beginning with first contact and issuance of initial documentation (eg. proposed SOW, RFI, etc), continuing through the proposal evaluation and selection criteria, and terminating with the communication of the final choice.
b) Development of a work plan detailing key organizational reports, negotiation and management schedule, exit strategy details, expected milestones and deliverables.

15.3 Examples

15.3.1.1 OTHER FLIGHT INSPECTION ORGANISATIONS

If a service provider has limited recourses, like only one aircraft, or lack of capability to perform all sorts of required procedure tasks, it will make sense to establish a relationship with another such organization to make sure the

inspections can be performed at all times without disruption. In such a case, the other organization should be described in the organizational details with adequate responsibility and performance. It is strongly recommended that such an addendum is applied for and approved by the principal, with all roles and responsibilities described, in due time before it may become required to use the additional service.

15.3.1.2 CALIBRATION EQUIPMENT SUPPLIERS

Instruments like Signal Generator need to be calibrated regularly as described by the instrument supplier. The service provider must make sure that all calibration tasks are fully described, like regular calibration intervals of the equipment as well as calibration of the signal sources.

16 Technical Requirements

16.1 Flight Inspection System

16.1.1 Built State

16.1.1.1 The applicant shall maintain a built state document for the Flight Inspection System (see Note).

16.1.1.2 The build state document shall include the following major components:

a) Manufacturer
b) Make
c) Model
d) Modification status

16.1.1.3 The built state document shall also include version numbers of all Software and Firmware.

16.1.1.4 Details of all uses of Software and Firmware in the measurement system. Also details of Software and Firmware support.

16.1.1.5 The design authority for all equipment shall be stated.

Note: Doc 8071 Vol I, section 1.12.6 states "The build state of all equipment, including test equipment, should be recorded and the records should be updated whenever modifications or changes are made. All modifications should be accurately documented and cross-referenced to modification strikes or numbers on the equipment. After making any modification, tests and analyses should ensure that the modification fulfils its intended purpose and that it has no undesired side effects".

16.1.2 Functional description:

16.1.2.1 Function block diagram and discussion of that diagram.

16.1.3 Technical specification

16.1.3.1 E.g. Data processing, storage capability and HMI.

16.1.4 System Design

16.1.4.1 Physical block diagrams and discussion.

16.1.4.2 Manufacturer's type number for all major items of the flight inspection system.

16.1.5 Firmware and Software Design Description

16.1.5.1 Where the software or firmware is used within the system.

16.1.5.2 Process ensuring that the software performs as specified.

16.1.5.3 Version control.

16.1.5.4 Algorithms for the measurements being made.

16.1.5.5 To a level to support the measurement uncertainty. Listing of source code is not required.

16.1.6 Recordings and Graphs.

16.1.6.1 All recordings shall be time synchronised so that they can be correlated with the aircraft's position at the time of the measurement.

16.1.6.2 If recordings or graphs are used to derive figures for the inspection report, the scales shall be commensurate with the permitted measurement uncertainty limits.

16.1.6.3 All recordings or graphs shall have sufficient resolution.

16.1.7 Environmental Conditions

16.1.7.1 The applicant shall define the environmental conditions (temperature range, humidity range, etc.). Evidence may be in the form of test results made by the operator, or manufacturer's specifications.

16.1.7.2 If the measuring equipment requires any warm-up or cooling time, this shall be clearly indicated in the operating instructions.

16.1.7.3 Temperature dependent equipment may need to be fitted in a temperature controlled enclosure to maintain compliance with the performance standard.

16.1.7.4 An indicator/alarm may need be fitted to inform the operator of any change in temperature that may affect the accuracy of the system.

16.1.7.5 Consider monitoring of all parameter that influence the measurement uncertainty – provide examples.

16.2 Aircraft

16.2.1.1 Details of the aircraft used for flight inspection (make and type).

16.2.1.2 The aircraft with the installed flight inspection system should be airworthy and approved by the airworthiness authorities for the intended operation in the area it operates.

Note: Aircraft type preference should be given to multiengine turbine aircraft, for their reliability and performance. Pressurization and air conditioning should be available as a mean to reduce crew workload, increase safety and keep the FIS equipment within the technical specification. Standard avionics must match the airspace requirements.

16.2.2 Interference

16.2.2.1 The navigation aid measuring equipment shall not interfere with the operation or accuracy of the aircraft's normal navigation and general avionics equipment.

16.2.2.2 The Organisation still needs to ensure that all safety or regulatory requirements associated with the safe operation of the aircraft are met.

16.2.2.3 The flight inspection measurements shall be adequately protected against the prevailing EMC environment internal or external to the aircraft. Abnormal interference effects shall be clearly identified on the inspection results.

16.2.3 Propeller Modulation

16.2.3.1 It shall be shown how propeller modulation can be avoided.

The formula below shows the propeller modulation frequency.

$$propeller\_\mathrm{mod}\_frequency(Hz) = \frac{shaft\_rotation\_speed(rpm) * number\_of\_propeller\_blades}{60s}$$

Examples:

3-blade propeller at 1800 RPM: $= \frac{1800 * 3}{60s} = 90Hz$ → Bad for ILS

4-blade propeller at 1800 RPM: $= \frac{1800 * 4}{60s} = 120Hz$ → OK for ILS

5-blade propeller at 1800 RPM: $= \frac{1800 * 5}{60s} = 150Hz$ → Bad for ILS

16.2.4 Independence from aircraft's operational avionics fit

16.2.4.1 As far as is reasonably possible the flight inspection equipment, including associated aerials should be totally independent from the aircraft's operational avionics fit.

16.2.4.2 This is to protect both the integrity of the FI results and the operation capability of the aircraft avionics.

16.2.4.3 If not, show effect on measurement accuracy.

16.2.4.4 If duplicated FIS navigation aid measuring receivers are used they may use a common aerial.

16.2.4.5 Location, characteristic and type of all measurement aerials on the aircraft.

16.2.4.6 Consideration should be made to the aerials being positioned in such a manner that they are not obscured from the signal during any normal inspection flight profile.

Note: To achieve this may require the use of more than one measuring aerial for one particular function.

16.2.4.7 Aircraft antennas are far from ideal isotropic receptors and the antenna gain will vary with both frequency and received angles (azimuth, elevation and bank).

16.2.4.8 Antenna characteristics for relevant sectors and frequencies must be compensated manually or automatically by the flight inspection system to obtain necessary accuracy for coverage measurements.

16.2.4.9 If duplicated navigation aid measuring receivers are used it may be possible to use a common aerial.

16.2.4.10 ICAO Doc 8071 Vol I, Attachment 1 to Chapter 1 describes recommended requirements for Flight Inspection Aircrafts.

16.2.5 Policy on Crew, Training and FTL (Flight Time Limitations)

16.2.5.1 Flight Inspection aircraft shall be employed as multicrew aircraft, with two pilots and a system operator. When a mission requires seating provision for other technical persons on board these should be available for e.g. training or observation.

16.2.5.2 Training shall be as such that initial and recurrent training and checking syllabi are approved by the CAA and clearly specified in the Operations Manual.

16.2.6 Policy on aircraft maintenance

16.2.6.1 Strict adherence to manufacturer and CAA technical requirements are mandatory.

17 Measurement Uncertainty

17.1.1.1 The measurement uncertainty for any parameter must be small compared with the operational limits for that parameter.

17.1.1.2 Doc 8071 section 4.3.86 includes a description of a 5th of the value being measured.

17.1.1.3 The measurement uncertainty to 95% probability must be calculated for each of the parameters to be measured. The method of calculation and any assumptions made must be clearly shown. This includes all uncertainty contributions.

17.1.1.4 Where several measurements are combined to produce a single result, these errors should be added using a statistical model such as the RSS method (the square-root of the sum of the squares.

Example:

An example could be calculation of localizer alignment error which is a product of the accuracy of the receiver, signal generator and position reference system:

Area of interest (worst case):
ILS point D.

NAV receiver error contribution:
Stated Accuracy: 0.0005DDM = 0.48 µA
Nonlinearity of receiver is eliminated in calibration procedure.

Signal Generator error contribution:
Stated Accuracy: 0.0003DDM + 2% of reading
0.0003DDM + 0.01DDM*2% = 0.0005DDM = 0.48 µA

Reference System error contribution
Assume a time stamped high accuracy position reference system is used with 5 cm horizontal accuracy. This will equivalent to an accuracy of about 0.10 µA at ILS point D.

Total RSS Error:

$$LLZ\_Alignment\_RSS\_Error = \sqrt{\mathrm{Re}ceiver\_error^2 + Generator\_error^2 + REF\_System\_error^2}$$

$$= \sqrt{0.48\mu A^2 + 0.48\mu A^2 + 0.10\mu A^2} = 0.68\mu A$$

17.1.1.5 For measurements which can only be derived from recordings, the accuracy and resolution of the recording equipment shall be included in calculating the expected results.

17.1.1.6 Details of statistical methods or interpolative techniques which may be applied shall be described.

17.1.1.7 The flight inspection system shall include equipment which can determine and record the aircraft's position in space relative to the aircraft reference point.

17.1.1.8 The provider must clearly indicate the measures taken in order to reduce the budget errors in the positioning (e.g. use of DGPS, geodetic database, care in setting up the positioning system on the ground).

17.1.1.9 The aerials to be used for tracked structure measurements shall be positioned with due regard to the tracking reference on the aircraft. If the aerials and the reference are not in close proximity, this error must be addressed in the measurement uncertainty calculations and in setting the operational crosswind limit. Alternatively, the errors may be corrected using information from attitude and heading sensors to calculate the true position of the aerial's phase centre.

18 Maintenance

18.1 Objective

18.1.1.1 Maintenance on all involved systems and equipment shall be performed.

18.2 Acceptable Means of Compliance

18.2.1.1 All equipment used in the maintenance and calibration process shall have traceability to national or international standards e.g. ISO standards.

18.2.1.2 ICAO Doc 8071 Vol 1 describe requirements for calibration in Chapter 1.12.8 - 1.12.10. This requirements should be fulfilled.

18.2.1.3 Procedure for the control of Equipment used for calibrating the Flight Inspection system.

18.2.1.4 Procedures for maintenance and calibration of the Flight inspection System:

a) Interval.
b) Description of the procedures.
c) Consider Who, Where, What, When.

18.2.1.5 The flight inspection receivers of the system shall be calibrated at suitable intervals to maintain the system uncertainty within allowable tolerances between calibrations. The calibration interval recommended by the manufacturer should be monitored and adjusted if required in

order to maintain system accuracy under the actual operational conditions.

18.2.1.6 The purpose of the calibration is the determination and compensation of non-ideal receiver characteristics for achieving the highest possible accuracy.

18.2.1.7 Reference signals from suitable, calibrated signal generator(s) shall be used as reference for the receiver calibration.

18.2.1.8 The receiver error shall be determined throughout the required measurement range of the receiver, in numerous steps.

18.2.1.9 The connection of the signal generator to the receiver under calibration should preferably be automatically (if technically feasible).

18.2.1.10 The calibration process shall compensate cable loss during calibration.

18.2.1.11 Due to the numerous signal generator settings during the calibration, the signal generator(s) shall preferably be steered automatically by the system.

Note: Incorrect settings of signal generators during calibration can be avoided to the highest extend by automatic control.

18.2.1.12 The determined receiver error shall be applied for compensation of receiver output in order to improve the measurement accuracy of the system during flight inspection.

18.2.1.13 The receiver output errors shall be checked against equipment specifications throughout the required measurement range. Automatic warning shall be given, if a receiver error is out of specified tolerance.

18.2.1.14 It is recommended to check the resulting performance of the calibrated receivers in the system against independent signal generator(s). This allows detection of errors during the calibration process or detection of a defective signal generator used for calibration.

18.2.1.15 The check of the calibrated receiver shall preferably also be automatically throughout the receiver's measurement range.

18.2.1.16 The result of the calibrated receiver check shall be recorded as evidence for the overall system performance.

18.2.1.17 Details of inspections, calibration and checks shall be recorded as evidence.

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19 Operating Instructions

19.1.1.1 The Exposition should at least include concise details of:

a) Planning and scheduling process.
b) The flight profile to be used for each individual measurement.
c) Pre-flight inspection of measuring equipment.
d) Siting of any necessary ground tracking or position fixing equipment.
e) Operation of the measuring equipment.
f) Production of the flight inspection report.
g) The method of calculating all results in the Flight Inspection Report.
h) Pilot operating procedures.
i) Cross wind limits - to allow measurement accuracies to be within the limits required.
j) ATC coordination.

20 Flight Inspection Report

20.1.1.1 The minimum information to be provided on the report shall be:

a) Station name and facility designation.
b) Category of operation.
c) Date(s) of inspection.
d) Serial number of report/Unique Identifier.
e) Type of inspection, e.g. Routine or Annual.
f) Aircraft registration.
g) Manufacturer and type of system being inspected.
h) Wind conditions. (To allow cross wind to be established).
i) Names and functions of all personnel involved in the inspection.
j) Method of making each measurement (where alternatives are available). These may be referenced to the operating instructions.
k) Details of associated attachments (e.g. recordings).
l) Details of extra flights made necessary by system adjustments.
m) An assessment by the flight crew of the navigational aid's performance. Comment by the Navaid inspector/equipment operator.
n) Details of any immediately notifiable deficiencies.
o) Statement of conformance/non-conformance.
p) Signatures of appropriate personnel.
q) Results and tolerance.

20.1.1.2 A confirmation of the status of the inspection should be provided immediately after the inspection.

21 Retention of Flight Inspection Data

21.1.1.1 Flight inspection reports and data required to generate flight Inspection Reports shall be retained.

21.1.1.2 The flight inspection organisation shall have means to reproduce Flight Inspection Reports.

Note: ICAO Doc 8071 Vol I, Attachment 2 to Chapter 1 section 5 states:
Each flight inspection organization is responsible for ensuring that sufficient historical data are retained to legally establish the trends in facility performance over a reasonable interval of time. As a minimum, all commissioning inspection reports and data recordings should be retained in the facility file along with reports and data recordings from the last five periodic inspections. All special flight inspections carried out during this time period should be retained on file.

22 Acknowledgments

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Larry Brady - Airfield Technology
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[2] ICAO, 2000, Doc 8071, Manual on Testing Radio Navigation Aids, Volume 1 - Testing of Ground Based Radio Navigation Systems, Fourth Edition.
[3] ISO 9001, 2008, Quality management systems - Requirements, Fourth edition.

Appendix 1: Practical Demonstration

In some cases the Regulator or ANSP may wish to observe the flight inspection operation first hand either on board the aircraft or on the ground.

During practical demonstration or flight inspection observation, repeatability of measurement results shall be demonstrated. The variation of results, measured by subsequent flights shall be within the measurement uncertainty as stated by the performance analysis. It shall be demonstrated that results are independent from external circumstances e.g.:

- Results independent from normal speed variation
- Independent from direction to fly (CW/CCW or inbound/outbound)

The repeatability should be checked for the most sensitive parameters of the navigation aids under inspection.

Example: Typical parameters for demonstration of repeatability for ILS calibration could be:

- Course alignment accuracy
- Glide path angle
- Displacement sensitivity
- Height of reference datum

Appendix 2: Accountable Manager

The Accountable Manager has the overall responsibility to respond to the requirements. He is responsible to establish a Quality System for ensuring that all flight inspection activities are carried out according to the required standards.

In particular, he is responsible for ensuring that adequate contractual arrangements exist. This includes, amongst others, provision of facilities and sufficient competent and qualified personnel in relation to the work to be undertaken.

All of this with a view to ensure that all flight inspection activities are performed on time and in accordance with the applicable requirements, regulations and approved standards, and that all aircrafts have a valid Certificate of Airworthiness for all flights undertaken activities.