

**NOTICE
TO
AIR
NAVIGATION
SERVICE
PROVIDERS**

IRELAND
SAFETY REGULATION DIVISION
IRISH AVIATION AUTHORITY
AVIATION HOUSE
HAWKINS STREET
DUBLIN 2

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**AERONAUTICAL
NOTICE**

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Safety Regulatory Requirements For Flight Procedure Design Providers

1. PURPOSE

- 1.1. This notice is to provide information on the requirements placed on persons or entities intending to submit instrument flight procedure design material for publication in the Irish Aeronautical Information Publication.
- 1.2. This is to ensure that all published instrument flight procedures intended for use by aircraft operating under instrument flight rules in the Shannon Flight Information Region meet applicable requirements
- 1.3. Requests for further information should be addressed to: ansdinfo@iaa.ie.

2. REFERENCES

- 2.1. This requirements in this notice are based on compliance with the following documents:
 - 2.1.1. ICAO Doc 9906, The Quality Assurance Manual for Flight Procedure Design. Volume 2-Flight Procedure Designer Training;
 - 2.1.2. ICAO Doc 8168-OPS/611, Procedures for Air Navigation-Air Operations, Volume I Flight Procedures, and Volume II Construction of Visual and Instrument Flight Procedures
 - 2.1.3. ICAO Doc 9613, Performance Based Navigation Manual- Volume I Concept and Implementation Guidance, and Volume II Implementing RNAV and RNP
 - 2.1.4. ICAO Doc 9905, Required Navigation Performance Authorisation Required Procedure Design Manual
 - 2.1.5. ICAO Doc 9734 – Safety Oversight Manual
 - 2.1.6. ICAO Doc 9859 – Safety Management Manual;
 - 2.1.7. COMMISSION REGULATION (EU) No 73/2010 of 26 January 2010 laying down requirements on the quality of aeronautical data and aeronautical information for the single European sky
 - 2.1.8. ASAM No.017 Guidance Material on Validation of Instrument Flight Procedure Designs; and
 - 2.1.9. ASAM No.004-Guidance on the NSA Audit Finding Corrective Action Process

3. GENERAL

- 3.1. In the interest of safety, the flight procedure provider shall implement the provisions in flight procedure design in a consistent manner, using processes that will minimise the possibility of errors, identify errors that do occur before they impact safety, and provide for continuous improvement of the procedure design process in order to eliminate or reduce future errors.
- 3.2. Aerodrome Operating Minima;

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- 3.2.1. The obstacle clearance altitude/heights (OCA/H) for the aircraft categories for which the procedure is designed shall be shown on the relevant instrument approach chart.
 - 3.2.2. The state does not publish visibility, MDA, DH, DA, MDA/H or DA/H for instrument approaches at aerodromes.
 - 3.3. A flight procedure provider shall ensure that published geographical coordinates indicating latitude and longitude are expressed in terms of the World Geodetic System – 1984 (WGS-84) geodetic reference datum as in ICAO Doc 9674 - World Geodetic System – 1984 (WGS-84) Manual.
 - 3.4. All flight procedures coming within the scope of this notice and bearing the aeronautical information date of 1 May 2010 or later shall conform to the Standards relevant to the flight procedure.
 - 3.5. All instrument flight procedure designs shall be submitted to the Aeronautical Services Department for validation. No flight procedures will be published prior to validation.
 - 3.6. When a flight procedure provider is not able to comply with any standard/recommended practice specified or referenced in this regulatory requirement, the flight procedure provider shall immediately notify ANSD, who shall specify an appropriate course of action.

4. Approval of Instrument Flight Procedure Providers

- 4.1. A flight procedure provider approval will be issued or renewed for a maximum period up to 3-years;
- 4.2. The approval authorises the provider to:
 - 4.2.1. Design, flight validate and maintain/amend instrument flight procedures.
 - 4.2.2. Submit for validation aeronautical data intended for publication in the Irish AIP relating to instrument flight procedures, airspace, routes and positional significant points.
 - 4.2.3. An approval will specify the types of instrument flight procedures that the provider is authorised to design, flight validate and maintain.
- 4.3. A flight procedure provider approval remains in force until it expires or is withdrawn, suspended or revoked;
- 4.4. The holder of a flight procedure provider approval that expires or is revoked shall forthwith surrender their approval to SRD; and
- 4.5. The holder of an flight procedure provider approval that is suspended shall forthwith produce the approval to SRD for appropriate endorsement.
- 4.6. Renewal of Flight Procedure Provider Approval
 - 4.6.1. An application for renewal of an approval shall be submitted to the IAA not less than 30 days before the approval expires.
 - 4.6.2. Before renewing an approval ASD will conduct an appropriate oversight audit.
- 4.7. Register of Flight Procedure Provider Approval
 - 4.7.1. The IAA will maintain a register of all flight procedure providers approvals issued under this notice.

5. Ongoing Oversight and audit of the flight procedure provider

- 5.1. Ongoing oversight and audit of the provider shall be undertaken against;
 - 5.1.1. The requirements of this notice;
 - 5.1.2. Doc 9734, Doc 8168 Doc 9906 & Doc 9613;

5.2. The purpose of the audit is to ensure;

5.2.1. That the provider is providing instrument flight procedure designs in line with applicable requirements; and

5.2.2. That the provider's quality management system is functioning appropriately.

5.3. Non-conformities

5.3.1. In the event that the audit reveals non-conformities in service provision, non-conformities will be drawn to the attention of the provider in accordance with normal audit practice and the standard corrective action process followed. See also ASAM No.004-Guidance on the NSA Audit Finding Corrective Action Process.

5.3.2. If the non-conformities are such that safety is or may be affected, Authority measures may include:

5.3.2.1. variation or cancellation of the flight procedure approval; or

5.3.2.2. The identification of alternative means of service provision to ensure that the service provided reaches the required standards.

5.3.3. If a safety-critical non-conformity is identified, unless it can be rectified immediately, notification of the deficiency shall be distributed to users by the most appropriate means available. It may be necessary to call for withdrawal and replacement of the affected instrument flight procedure.

6. Quality Management System

6.1. A quality management system, conforming to the standards of Doc 9906 & Doc 8168 shall be developed and implemented by the flight procedure provider.

6.2. A flight procedure provider shall implement a properly organised quality system, containing the necessary procedures, processes and resources at each functional stage of the aeronautical information/data process.

6.3. A flight procedure provider shall establish processes that ensure that aeronautical information/data at any moment is traceable to its origin so as to allow any data anomalies or errors to be corrected.

6.4. These processes must ensure that:

6.4.1. Documents are authorised by the Chief Designer or a designated person;

6.4.2. the currency of documentation can be readily determined;

6.4.3. documents are available at locations where needed by staff;

6.4.4. only current versions of documents are available; and

6.4.5. All documents are document controlled.

6.5. A flight procedure provider shall establish documented procedures to record, investigate, correct, and report any errors that are detected in the flight procedure design published

6.6. The flight procedure provider shall comply with the order of accuracy for aeronautical information/data as specified in ICAO Annex 11, Chapter 2, paragraph 2.19 and Annex 14, Volumes I and II, Chapter 2. The order of publication resolution and data integrity of aeronautical information/data shall comply with Annex 15, paragraph 3.2.9 and Appendices 1 and 7.

6.7. The flight procedure provider shall ensure that electronic data sets, while stored shall be protected by a 32-bit cyclic redundancy check (CRC) implemented by the application dealing with the data sets.

7. Safety Management

7.1. The flight procedure provider shall document how it manages the safety of its services. ICAO Doc 9859 – Safety Management Manual outlines the principles of safety management and provides guidance for the conduct of an effective safety management system.

8. Operations Manual

8.1. General

8.1.1. The flight procedure provider shall submit an operations manual to the Air Navigation Services Division (ANSD). The information presented in the operations manual shall serve to demonstrate how the flight procedure provider will comply with all appropriate requirements. It also serves as a reference document agreed between the flight procedure provider and the ANSD with respect to the standards, conditions and level of service to be maintained for the provision of flight procedure services

8.1.2. The contents of the operations manual shall contain:

8.1.2.1. A table of contents based on the items in the manual, indicating the page number on which each item begins;

8.1.2.2. an organization chart of the flight procedure provider that shows the position of each person and the name, qualification, experience, duties and responsibilities of personnel who are responsible for ensuring the compliance of the organization with the requirements in this policy;

8.1.2.3. A senior person acceptable to the SRD, who has the authority within the applicant's organization to ensure that each activity listed in their Operations manual:

8.1.2.3.1. Can be financed and is provided to meet operational requirements;
and

8.1.2.3.2. Is provided in accordance with the requirements prescribed in this notice.

8.1.2.4. an operations plan for the flight procedure services;

8.1.2.5. a list of the types of instrument flight procedures for which each person is authorised to design or maintain;

8.1.2.6. a list of the design services that the designer provides, or proposes to provide;

8.1.2.7. a statement, for each design service, that identifies the location from where the service is provided, or proposes to be provided;

8.1.2.8. evidence that the flight procedure provider has sufficient personnel to collect, collate, check, coordinate, edit, and amend a flight procedure design;

8.1.2.9. a procedure to maintain the competence of those authorized personnel;

8.1.2.10. information on the compliance of the flight procedure services with the applicable requirements of Doc 8168 and The Performance Based Navigation Manual;

8.1.2.11. a statement that all flight procedure designs which are produced for Ireland are in conformity with ICAO Doc 8168 and The Performance Based Navigation Manual requirements;

8.1.2.12. A process to ensure that aeronautical data quality requirements related to the data integrity and charting resolution are in accordance with ICAO Annex 4

paragraph 2.17 and Tables 1 to 5 in Appendix 6. The integrity of the data shall be maintained throughout the data process from survey/origin to the next intended user. Aeronautical data integrity requirement shall be based upon the potential risk resulting from the corruption of data and the use to which the data item is put.

8.1.2.13. A process to ensure that electronic aeronautical data sets while stored shall be protected by a 32-bit cyclic redundancy check (CRC) implemented by the application dealing with the data sets.

8.1.3. The operations manual is an important document and shall be issued under the authority of the flight procedure provider. The flight procedure provider shall control the distribution of the operations manual and ensure that it is amended whenever necessary to maintain the accuracy of the information and to keep its contents up to date.

8.1.4. The operations manual may consist of a main manual covering the main areas that need to be addressed, as well as separate supporting documents and manuals.

8.2. Qualifications, Training and Personnel

8.2.1. The flight procedure provider shall ensure that a person designing or amending a flight instrument procedure demonstrates competency for flight procedure design.

8.2.2. The flight procedure provider shall employ sufficient number of competent personnel to perform the operation of the service. The flight procedure provider shall provide in the operations manual an analysis of the number of personnel required to operate the flight procedure service taking into account the duties, training, annual leave and workload required.

8.2.3. The competency of the flight procedure personnel shall be subject to periodic verification by the Authority.

8.2.4. Training

8.2.4.1. The flight procedure provider shall establish procedures to ensure that all its personnel, including technical staff, possess the skills and competencies required in the provision of instrument flight procedure design. The flight procedure provider shall develop an overall training policy, training programme and detailed job descriptions for its staff. The training policy and programme should lay down the training necessary to perform their duties, including initial, recurrent, on the job and specialised training.

8.2.4.2. The flight procedure provider shall ensure that their staff undergo a suitable period of supervised on-the-job training before being deployed for duties.

8.2.4.3. The flight procedure provider shall document training plans for each staff member.

8.2.4.4. The flight procedure provider shall maintain individual training records for each staff member.

8.2.4.5. The flight procedure provider shall conduct an annual review of the training plan for each member of staff at the beginning of the year to identify any changes in training requirement and prioritise the type of training required for the coming year.

8.3. Documentation and Record

8.3.1. Documents and Records to be Maintained

- 8.3.1.1. Hold or have ready access to copies of relevant documentation comprising:
 - 8.3.1.1.1. Technical standards;
 - 8.3.1.1.2. Practices;
 - 8.3.1.1.3. Instructions; and
 - 8.3.1.1.4. Any other documentation that may be necessary for the design, validation and maintenance of the types of instrument flight procedures.
- 8.3.1.2. The flight procedure provider shall maintain all documents and records which are necessary for the operation of the service. Copies of these documents shall be made available to personnel where needed.

8.3.2. Document Control

- 8.3.2.1. The flight procedure provider shall establish a process for the authorization and amendment of the documents to ensure that they are constantly updated. The flight procedure provider shall establish a system to ensure that:
 - 8.3.2.1.1. the currency of the documents can be readily determined;
 - 8.3.2.1.2. amendments to the documents are controlled in accordance with established quality management principles; and
 - 8.3.2.1.3. Only current versions of documents are available.
- 8.3.2.2. The flight procedure provider shall ensure that where documents are held as computer based records and where paper copies of computer based records are made, they are subjected to the same control as paper documents.

8.4. Errors in published instrument flight procedures

8.4.1. An approved instrument flight procedure design provider shall establish procedures for recording, investigating, correcting and reporting any identified errors and any identified non-conformance with the standards and requirements in an instrument flight procedure that is published.

8.4.2. The procedures shall require that:

- 8.4.2.1. An instrument flight procedure is immediately withdrawn from operational use if the error or non-conformance affects or may affect the safety of any aircraft operation;
- 8.4.2.2. The error or non-conformance is corrected and reviewed by the Chief Designer;
- 8.4.2.3. when an error is corrected this shall result in a revised design file being submitted to SRD for validation prior to promulgation by the most appropriate means relative to the operational significance of the error or non-conformance.
- 8.4.2.4. The source of the error or non-conformance is identified and:
 - 8.4.2.4.1. If possible, eliminated to prevent a recurrence; and
 - 8.4.2.4.2. Preventative action is taken to ensure that the source of the error or non-conformance has not affected the integrity of any other instrument flight procedures.

8.5. Differences from ICAO standards, recommended practices and procedures

8.5.1. A Difference is defined as the difference between a State Requirement and the related ICAO SARP and occurs because the State Requirement sets a lower, higher or

different standard to that required or the ICAO SARP has not, or only partially, been implemented.

8.5.2. Any differences that exist for Doc 8168, Doc 9613, Doc 9906 and Doc 9905 can be viewed in the Irish AIP GEN 1.7 section.

Chief Executive
Irish Aviation Authority