

**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 Aeronautical Charting Providers

1. PURPOSE

- 1.1. This notice is to provide information on the requirements placed on persons or entities intending to submit charting material for publication in the Irish Aeronautical Information Publication.
- 1.2. The charts published in the AIP are produced in accordance with the provisions contained in ICAO Annex 4 - Aeronautical Charts. The goal is to satisfy the need for uniformity and consistency in the provision of charts that are required for operational use by civil aviation.
- 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 Annex 4 – Aeronautical Charts;
 - 2.1.2. ICAO Annex 15 – Aeronautical Information Services;
 - 2.1.3. ICAO Doc 8126 – Aeronautical Information Services Manual;
 - 2.1.4. ICAO Doc 8697 – Aeronautical Chart Manual
 - 2.1.5. ICAO Doc 9734 – Safety Oversight Manual
 - 2.1.6. ICAO Doc 9859 – Safety Management Manual; and
 - 2.1.7. ICAO Doc 9674 – World Geodetic System – 1984 (WGS - 84) Manual
 - 2.1.8. 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
 - 2.1.9. ASAM No.012 Guidance Material on Validation of Charts.
 - 2.1.10. ASAM No.004-Guidance on the NSA Audit Finding Corrective Action Process

3. GENERAL

- 3.1. A charting provider shall ensure that charts necessary for the safety, regularity or efficiency of air navigation are made available in a form in conformity with ICAO Annex 4.
- 3.2. Aerodrome Operating Minima;
 - 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 charting 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.

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- 3.4. All charts coming within the scope of this regulation and bearing the aeronautical information date of 1 May 2010 or later shall conform to the Standards relevant to the particular chart.
 - 3.5. All charts produced under the standard of this regulation shall be sent for validation to the PANS-OPS & Airspace Inspector of ANSD and, after SRD approval, will be published in the AIP.
 - 3.6. When a charting 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 Aeronautical Charting Provider

- 4.1. An aeronautical charting 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, maintain and amend charts;
 - 4.2.2. submit for validation charts for publication in the Irish AIP; and
 - 4.2.3. An approval will specify the types of charts that the provider is authorised to design and maintain.
- 4.3. An aeronautical charting provider approval remains in force until it expires, is withdrawn, suspended or revoked;
- 4.4. The holder of an aeronautical charting provider approval that expires or is revoked shall forthwith surrender the approval to SRD; and
- 4.5. The holder of an aeronautical charting provider approval that is suspended shall forthwith produce the approval to the SRD for appropriate endorsement.
- 4.6. Renewal of Aeronautical Charting Provider Approval
 - 4.6.1. An application for the renewal of a certificate shall be submitted to the IAA not less than 30 days before the expiry of an existing approval.
 - 4.6.2. Before renewing an approval ASD will conduct an appropriate oversight audit.
- 4.7. Register of Aeronautical Charting Provider Approval
 - 4.7.1. The IAA will maintain a register of all aeronautical charting provider approvals issued under this notice.

5. Ongoing Oversight and audit of the charting provider

- 5.1. Ongoing oversight and audit of the charting provider shall be undertaken against;
 - 5.1.1. The requirements of this notice;
 - 5.1.2. ICAO Annex 4 & Doc 9734;
- 5.2. The purpose of the audit is to ensure;
 - 5.2.1. That the service provider is providing charts in line with the applicable requirements; and
 - 5.2.2. That the service 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 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 charting approval; or

5.3.2.2. The identification of alternative means of 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 charts.

6. Quality Management System

6.1. A documented quality management system, conforming to the standards of, Annex 15 (3.2) & Annex 4 (2.17) shall be developed and implemented by the charting provider.

6.2. A charting 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 charting 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. Correction in published information

6.4.1. A charting provider shall establish procedures to record, investigate, correct, and report any errors that are detected in the aeronautical chart(s) published.

6.4.2. The source of the error is identified and, where possible, eliminated.

6.5. The charting 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.

6.6. The charting 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 charting 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 effective safety management system.

8. Operations Manual

8.1. General

8.1.1. The charting 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 charting provider will comply with all appropriate requirements. It also serves as a reference document agreed between the charting provider and the ANSD with respect to the standards, conditions and level of service to be maintained for the provision of charting 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 charting 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;

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- 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 by this notice.
- 8.1.2.4. an operation plan for the charting services;
- 8.1.2.5. a list of the types of charts for which each person is authorised to design or maintained;
- 8.1.2.6. a list of the charts that the designer provides, or proposes to provide;
- 8.1.2.7. A statement that identifies the location from where the charting service is provided, or proposes to be provided;
- 8.1.2.8. establish a procedure to maintain the competence of each authorized personnel;
- 8.1.2.9. information on the compliance of the charting services with the applicable requirements of ICAO Annex 4 and 15;
- 8.1.2.10. the charting provider shall ensure that all aeronautical charts which are produced for Ireland are in conformity with ICAO Annex 4;
- 8.1.2.11. The charting provider shall take all reasonable measures to ensure that the information it provides and the aeronautical charts made available are adequate and accurate and that they are maintained up-to-date by an adequate revision service;
- 8.1.2.12. The charting provider shall ensure that the presentation of information in the aeronautical charts is accurate, free from distortion and clutter, unambiguous, and readable under all normal operating conditions.
- 8.1.2.13. The charting provider shall 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.
- 8.1.2.14. The charting provider shall 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.
- 8.1.2.15. Aerodrome Terrain and Obstacle Charts – ICAO (Electronic) as defined in ICAO Annex 4, Chapter 5.
- 8.1.3. The operations manual is an important document and shall be issued under the authority of the charting provider. The charting provider shall control the distribution of the operations manual and ensure that it is amended whenever necessary to maintain the accuracy of the information in the operations manual 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 charting provider shall ensure that a person designing or amending a chart demonstrates required competency level for chart design.
- 8.2.2. The charting provider shall employ sufficient number of competent personnel to perform the operation of the service. The charting provider shall provide in the operations manual an

analysis of the number of personnel required to perform the charting service taking into account the duties, training, annual leave and workload required.

8.2.3. The competency of the charting designer personnel shall be subject to periodic verification by the Authority.

8.2.4. Training

8.2.4.1. The charting provider shall establish procedures to ensure that all its personnel, including technical staff, possess the skills and competencies required in the provision of charting design. The charting 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 charting provider shall ensure that their personnel undergo a suitable period of supervised on-the-job training before being deployed for duties.

7.1.1.1. The charting provider shall document training plans for each staff member.

8.2.4.3. The charting provider shall maintain individual training records for each staff member.

8.2.4.4. The charting provider shall conduct a yearly review of the training plan for each 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 charts.

8.3.1.2. Records of all incoming and outgoing charting information to be identified by serial number and date.

8.3.1.3. Records of each person who is authorised to check, edit and publish charting information.

8.3.1.4. Records of internal quality and safety audit reports.

8.3.2. Document Control

8.3.2.1. The charting provider shall establish a process for the authorization and amendment of the documents to ensure that they are constantly updated. The charting 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 charting 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 Charts

8.4.1. An approved charting provider shall establish procedures for recording, investigating, correcting and reporting any identified error and any identified non-conformance or suspected non-conformance with the standards and requirements in a chart that is published.

8.4.2. The procedure shall require that:

8.4.2.1. A chart 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 certified by the charting provider.

8.4.2.3. The correction required is clearly identified. This shall result in a revised chart being submitted to SRD for validation prior to the promulgation by the most appropriate means by SRD 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 charts.

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 Annex 4 can be viewed in the Irish AIP GEN 1.7 section.

Chief Executive
Irish Aviation Authority