



**AERONAUTICAL SERVICES  
ADVISORY MEMORANDUM  
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**Title: Guidance Material on Instrument Flight Procedures**

**1. Introduction**

- 1.1. With the amendment 50 of ICAO Annex 11 in November 2016 and the addition of Appendix 8, ICAO specified that the State shall approve and remain responsible for all Instrument Flight Procedures (IFPs) for aerodromes and airspace under the authority of the State. This implies that the State authorities have the final responsibility for the procedures published within their territory.
- 1.2. The State has developed this regulatory framework to set out its expectations for any Instrument Flight Procedure Design Service Provider (IFPDSP) intending to provide Instrument Flight Procedure Design Services (IFPDS) in Ireland.
- 1.3. The regulatory framework is based on the 8 fundamental critical elements enumerated in ICAO Doc 9734 Part A : Primary Aviation Legislation (CE-1), Specific Operating Regulations (CE-2), State Civil Aviation System and Safety Oversight Functions (CE-3), Technical Personnel Qualification and Training (CE-4), Technical Guidance, tools and the provision of safety-critical information (CE-5), Licensing, certification, authorization and approval obligations (CE-6), surveillance obligations (CE-7), resolution of safety concerns (CE-8).
- 1.4. IFPs in Ireland must be developed in accordance with the specifications contained in ICAO Doc 8168.
- 1.5. The IFP Design process encompasses, the acquisition of data, the design and promulgation of procedures. It starts with compilation and verification of the many inputs and ends with validation and/or flight validation of the finished product, and the final drafting of documentation for publication.
- 1.6. Aerodrome Operating Minima:
  - 1.6.1. 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.
  - 1.6.2. The state **DOES NOT** publish visibility, MDA/H or DA/H for instrument approaches at aerodromes.
- 1.7. Readers should forward advice of errors, inconsistencies, or suggestions for improvement to this regulatory requirement to [ausd@iaa.ie](mailto:ausd@iaa.ie).
- 1.8. This replaces ASAM No.017 "Guidance Material on Instrument Flight Procedure Design", Issue 7, Date: 23.03.23
- 1.9. ASAM No.017 "Guidance Material on Instrument Flight Procedure Design", Issue 7, Date: 23.03.23 is hereby cancelled.



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## 2. References

- ICAO Annex 2 Rules of the Air.
- ICAO Annex 4 Aeronautical Charts.
- ICAO Annex 5 Units of Measurement.
- ICAO Annex 6 Aircraft Operations.
- ICAO Annex 11 Air Traffic Services.
- ICAO Annex 14 Vol I Aerodromes.
- ICAO Annex 14 Vol II Heliports.
- ICAO Annex 15 Aeronautical Information Services.
- ICAO Annex 19 Safety Management.
- ICAO Doc 8168 Procedures for Air Navigation Services – Aircraft Operations — Volume I Flight Procedures, and Volume II, Construction of Visual and Instrument Flight Procedures.
- ICAO Doc 8697 Aeronautical Chart Manual.
- ICAO Doc 9274 AN/904 Manual on the Use of the Collision Risk Model (CRM) for ILS Operations.
- ICAO Doc 9365 All Weather Operations Manual.
- ICAO Doc 9368 AN/911 Instrument Flight Procedure Construction Manual.
- ICAO Doc 9371 Template Manual.
- ICAO Doc 9573 RNAV Operations.
- ICAO Doc 9613 Manual of Required Navigation Performance (RNP).
- ICAO Doc 9643 Manual on simultaneous operations on parallel or near parallel instrument runways (SOIR).
- ICAO Doc 9674 World Geodetic System 1984 (WGS 84) Manual.
- ICAO Doc 9724 CRM Manual.
- ICAO Doc 9734 Safety Oversight Manual – Part A, The Establishment and Management of a State's Safety Oversight System
- ICAO Doc 9881 Guidelines for Electronic Terrain, Obstacle and Aerodrome Mapping Information.
- ICAO Doc 9906 Volume 1 – Flight Procedure Design Quality Assurance System.
- ICAO Doc 9906 Volume 2 – Flight Procedure Designer Training (Development of a Flight Procedure Designer Training Program).
- ICAO Doc 9906 Volume 3 – Flight Procedure Design Software Validation.
- ICAO Doc 9906 Volume 5 – Validation of Instrument Flight Procedures.
- ICAO Doc 9906 Volume 6 – Flight Validation Pilot Training and Evaluation (Development of a Flight Validation Pilot Training Program).
- ICAO Doc 10068 Manual on the Development of a Regulatory Framework for Instrument Flight Procedure Design Service.
- ICAO Doc 10199 Procedures for Air Navigation Services — Information Management
- ED-77/RTCA DO-201 Standards for Aeronautical Information.
- RTCA/DO-200 Standards for Processing Aeronautical Data.



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- Commission Regulation (EU) 2018/1048 Laying down airspace usage requirements and operating procedures concerning performance-based navigation.
- Commission Regulation (EU) 2017/373 Common Requirements.
- Commission Regulation (EU) No 139/2014 Aerodromes.
- IAA ASAM 006 - Guidance Material on AIP Change Request.
- IAA ASAM 007 – Policy on naming of significant points.
- IAA ASAM 009 – Guidance material on Aeronautical Information Regulation and Control (AIRAC).
- IAA ASAM 013 – Guidance material on Electronic Terrain and Obstacle Data (eTOD).
- IAA ASAM 016 - Policy on the identification of standard departure and arrival routes.



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### 3. Definitions

- 3.1. **Aerodrome.** A defined area (including any buildings, installations, and equipment) on land or water or on a fixed, fixed offshore or floating structure intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft. (ICAO Doc 10066 Aeronautical Information Management).
- 3.2. **Aerodrome Certificate Holder.** The accountable source for aeronautical and obstacle data related to an aerodrome.
- 3.3. **Aeronautical data.** Data relating to aeronautical facts, such as, inter alia, airspace structure, airspace classifications (controlled, uncontrolled, Class A, B, C... F, G), name of controlling agency, communication frequencies, airways/air routes, altimeter transition altitudes/flight levels, collocated instrument procedure (and its airspace as assessed by design criteria), area of magnetic unreliability, magnetic variation. (ICAO Doc 10066 Aeronautical Information Management).
- 3.4. **Approved IFPDSP.** An IFPD Service Provider certified in accordance with EU 2017/373 Part FPD.
- 3.5. **ATC Surveillance Minimum Altitude Chart (SMAC).** A supplementary chart providing information that enables flight crews to monitor and cross-check altitudes assigned by a controller using an ATS surveillance system.
- 3.6. **Consensus.** The generally accepted opinion or decision among a group of people.
- 3.7. **Continuous descent operation (CDO).** An operation, enabled by airspace design, procedure design and ATC facilitation, in which an arriving aircraft descends continuously, to the greatest possible extent, by employing minimum engine thrust, ideally in a low drag configuration, prior to the final approach fix /final approach point. (ICAO Doc 9931 Continuous Descent Operations (CDO) Manual).
- 3.8. **Continuous Climb Operation (CCO).** An operation, enabled by airspace design, procedure design and ATC, in which a departing aircraft climbs without interruption, to the greatest possible extent, by employing optimum climb engine thrust, at climb speeds until reaching the cruise flight level. (ICAO Doc 9993 Continuous Climb Operations Manual).
- 3.9. **Electronic Terrain and Obstacle Data (eTOD).** The digital representation of terrain and obstacles provided as datasets satisfying user requirements for a series of airborne and ground application such as EGPWS, TAWS, A-SMGCS, MSAW, Procedure Design etc.
- 3.10. **Instrument flight procedure.** A description of a series of predetermined flight manoeuvres by reference to flight instruments, published by electronic and/or printed means. (ICAO Doc 9906 Quality Assurance Manual for Flight Procedure Design).
- 3.11. **Integrated Aeronautical Information Package (IAIP).** A package which consists of the following elements:
  - AIP, including amendment service.
  - Supplements to the AIP.



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- NOTAM and PIB.
- AIC; and
- checklists and lists of valid NOTAMS.

3.12. **Airspace and U-Space Inspector.** An Inspector for the State, within the Irish Aviation Authority (IAA), Airspace and U-Space Division, Aviation Infrastructure Department whose responsibilities include:

3.12.1. Approval of:

- Flight procedure designs.
- Airspace structures and designs.
- Charting.
- AIP.
- Aeronautical data.
- eTOD Area 1 Obstacles.
- IFP Safeguarding Assessment

3.12.2. Certification of:

- Aeronautical Information Service Providers.
- Instrument Flight Procedure Design Training Providers.
- Instrument Flight Validation Service Providers.
- Aeronautical Geodesic Surveyor Providers.
- Aeronautical Charting Providers.
- Flexible use of Airspace.

3.13. **Primary area.** A defined area symmetrically disposed about the nominal flight track in which full obstacle clearance is provided.

3.14. **Sponsor**

3.14.1. The Aerodrome Certificate holder unless a letter of agreement exists between the ANSP and the Aerodrome certificate holder or representative acting on the license holder's behalf.

3.14.2. There may be locations, other than an aerodrome, where development of an IFP is desirable for a specific commercial purpose. In these cases, the Sponsor is the entity who determines the requirement for an IFP and engages the services of an IFPDSP to develop the IFP on their behalf.



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4. **Scope.** This guidance material is to ensure that IFPs & ATC SMACs:

- are designed to the required standard.
- are safe and flyable.
- meet Air Traffic Management requirements.
- are environmentally acceptable.

**Note:** *Chart changes which have no influence on the design of the IFP fall outside of scope.*



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**5. Flight Procedure Construction Principles.**

**5.1. General.**

- 5.1.1. In addition to the primary consideration of obstacle clearance, IFPDSPs should consider principles such as simplicity and economics in terms of time and airspace.
- 5.1.2. Consistency between different procedures to the same runway should be applied to the extent feasible e.g., harmonisation of platform altitudes and FAF/FAPs as coincident positions.
- 5.1.3. The primary area of an Instrument Flight Procedure must be wholly contained within Class C airspace.
- 5.1.4. A 500ft vertical buffer is provided between the nominal aircraft position and the top of Class G airspace.
- 5.1.5. A lower limit of a control area shall be established at a height above the ground or water of not less than 200 m (700 ft), unless otherwise prescribed by the competent authority.
- 5.1.6. The lower limit base of a controlled area shall be in accordance with the table of cruising level for VFR Flights

**5.2. Environmental.**

**5.2.1. Continuous Climb and Descent Operations.**

- 5.2.1.1. Continuous Climb and Descent Operations (CCOs and CDOs) are aircraft operating techniques enabled by airspace design, instrument procedure design and facilitated by air traffic control (ATC).
- 5.2.1.2. To help reduce aircraft noise and CO<sub>2</sub> emissions, IFPDSP should employ the principles of CCO/CDO in their designs (see ICAO Doc 9993 and ICAO Doc 9931).
- 5.2.2. **Noise Abatement.** IFPDSPs should comply with the provisions of ICAO Doc 8168 (PANS-OPS), Volume II, Part I, Section 3, Chapter 3, Appendix.
  - 5.2.2.1. A climb gradient of at least 6.6% (440ft/NM).
    - 5.2.2.1.1. Climbing on runway heading to 2000ft before commencing turn for Donegal, Sligo, Waterford, Shannon and Kerry Runways.
    - 5.2.2.1.2. Climbing on runway heading to 2500ft before commencing turn for Cork and Ireland West Runways.



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**6. Roles and Responsibilities**

**6.1. Aerodrome Certificate Holder:**

- 6.1.1. Shall be responsible unless a letter of agreement exist between the ANSP and the Aerodrome certificate holder for the design, continuous maintenance, periodic review and safeguarding of IFPs by a EU Regulation 2017/373 FPD certified entity.
- 6.1.2. Shall ensure consultation with all relevant stakeholders regarding any proposed amendments to the IFPs.
- 6.1.3. And ensure the aeronautical data related to the aerodrome is complete and current.

**6.2. Sponsor:**

- 6.2.1. Ensure the IFP is developed according to the State's regulatory framework.
- 6.2.2. Shall have a maintenance and safeguarding plan in place for the published IFPs.
- 6.2.3. Shall ensure that an approved EU Regulation 2017/373 FPD certified entity be contracted to carry out any new design, periodic review, maintenance or safeguarding.
- 6.2.4. Advise the State immediately when IFPs are no longer maintained, safeguarded, or sponsored.
- 6.2.5. Consult with a PANS-Ops & Airspace Inspector in advance and during the design process.
- 6.2.6. Assumes the responsibilities of the Aerodrome Certificate Holder at locations other than an aerodrome, with respect to design continuous maintenance, periodic review and safeguarding of IFPs by an approved EU Regulation 2017/373 FPD certified entity. A Service Level Agreement shall be signed to that effect, with the State, before any IFP is approved for publication.

**6.3. IFPDSP.**

- 6.3.1. Consult with a PANS-Ops & Airspace Inspector in advance and during the design process.
- 6.3.2. Refer to ASAM No.019 Guidance Material on Airspace Change Proposal Process on interactions between airspace change process and flight procedure designs.

**6.4. The State.**

- 6.4.1. According to ICAO Annex 11 the State:
  - 6.4.1.1. approves and remains responsible for all IFPs for aerodromes and airspace under the authority of the State.
  - 6.4.1.2. shall ensure that maintenance and periodic review of IFPs for aerodromes and airspace under the authority of the State are conducted by an approved EU Regulation 2017/373 FPD certified entity.



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6.4.1.3. shall ensure that an approved EU Regulation 2017/373 FPD certified entity intending to design an instrument flight procedure for aerodromes or airspace under the authority of that State meets the requirements established by that State's regulatory framework.

6.4.2. shall only accept designs that originate from an approved EU Regulation 2017/373 FPD certified entity.

6.4.3. Shall have oversight of AIS.

6.4.4. Shall have IFP policies, procedures and processes.

6.4.5. Approval of any new designs, maintenance, periodic reviews, or any requests to amend an operational element of an existing IFP.

6.4.6. Retain IFP design documentation in compliance with regulatory requirements.

**6.5. Aeronautical Information Management (AIM).**

6.5.1. IAA, Service Provider, has the responsibility, on behalf of the State, to ensure that the provision of AIM is conducted in accordance with ICAO Annex 15 & Regulation (EU) 2017/373

6.5.2. AIS exercise this responsibility through the publication of the State Integrated Aeronautical Information Package (IAIP).

6.5.3. IAIP aeronautical data is the state source. Required updates shall be in line with ASAM 06 - Guidance Material on AIP Change Request.



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**7. IFP Submission for Approval & Publication.**

**7.1. Required Documents.** All documentation shall be submitted together electronically to AUSD@iaa.ie.

**7.1.1. IFP Design File (One design File per IFP).**

7.1.1.1. The design file should be in line with the approved EU Regulation 2017/373 FPD certified entities internal policies, procedures, and processes.

7.1.1.2. At a minimum it shall include:

- Documentation required to maintain transparency concerning the details, calculations and assumptions used by the approved EU Regulation 2017/373 FPD certified entities.
- Summary of the logic and decisions used in the step-by-step design of the procedure.
- Verification and validation.
- For modifications or amendments to existing procedures, the reasons for any changes.
- For any deviation from existing standards, the reasons for such a deviation and details of the mitigations applied to assure continued safe operations.

**7.1.2. ICAO Annex 4 (See ASAM 012 - Guidance Material on Instrument Flight Procedures Chart Validation.**

7.1.2.1. Charts.

7.1.2.2. Aeronautical Database Tables.

7.1.2.2.1. See Annex 4 for the relevant database requirements:

7.1.2.2.1.1. 9.9.4.3 STANDARD DEPARTURE CHART — INSTRUMENT (SID) — ICAO Aeronautical database requirements.

7.1.2.2.1.2. 10.9.4.3 STANDARD ARRIVAL CHART — INSTRUMENT (STAR) — ICAO Aeronautical database requirements.

7.1.2.2.1.3. INSTRUMENT APPROACH CHART — ICAO 11.10.9 Aeronautical database requirements.

**7.1.3. Safety Assessments.**

7.1.3.1. IFP Safety Risk Assessment (See Annex I).

7.1.3.2. ATM Safety Assessment where required (para 11).



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7.1.4. **Consultation.** The sponsor shall consult with stakeholders, before submission. Evidence of consensus shall be included with the submission.

7.1.5. **Where required:**

7.1.5.1. AIP Submissions.

7.1.5.2. Flight Validation.

7.1.6. **Letter of Agreements**

7.1.6.1. EU Regulation 2017/373 ATS.OR.150 Transfer of responsibility for control and transfer of communications

7.1.6.1.1. *“Air traffic services provider shall establish applicable coordination procedures for transfer of responsibility for control of flights, including transfer of communications and transfer of control points, in letters of agreement and operation manuals, as appropriate”.*

**7.2. AIRAC System and Approval Process**

7.2.1. Refer to ASAM 009 Guidance Material on Aeronautical Information Regulation and Control (AIRAC) specifically para 3.6 Schedule of AIRAC Significant Dates and AIS Sign-Off Date.

7.2.2. AIS shall reject the submission if any of the following conditions exist:

7.2.2.1. Insufficient submission.

7.2.2.2. Discrepancies noted.

7.2.2.3. Requirements are not met.

7.2.2.4. Submission not received in required timeline (prior to the AIS Sign-Off Date).

7.2.2.5. Submission not approved by the Competent Authority

7.2.3. Re-submissions following a rejection by AIS will be regarded as a separate submission and the process and required timeline will recommence.

**7.3. Approval Process.**

7.3.1. Submissions shall be at least 2 AIRAC cycles prior to the AIRAC sign-off date (see ASAM 009 - Guidance Material on Aeronautical Information Regulation and Control (AIRACs)).

7.3.1.1. All approved publication documentation must be submitted to AIS prior to the AIS Sign-Off Date.

7.3.2. AUSD will acknowledge in writing with timescales for the evaluation.

7.3.3. Submissions are reviewed on a first in, first out policy, unless otherwise agreed with the sponsor.



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7.3.4. The review process shall be rejected if any of the following conditions exist:

- Insufficient submission.
- Discrepancies noted.
- Requirements not met.
- Not submitted in the required time.

7.3.5. Re-submissions following a rejection will be regarded as a separate submission and the process will recommence.

7.3.6. The result of the evaluation will be by means of a Comment Response Document (CRD).  
See Annex II.



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**8. Continuous Maintenance, Periodic Review & Safeguarding of IFPs.**

**8.1. Responsibility.**

8.1.1. The Aerodrome Certificate Holder unless a letter of agreement exists between the ANSP and the Aerodrome certificate holder shall be responsible for continuous maintenance, periodic review and safeguarding of IFPs by the approved EU Regulation 2017/373 FPD certified entities.

8.1.2. At locations other than an aerodrome, the sponsor assumes the responsibilities of the aerodrome licence holder with respect to design continuous maintenance, periodic review and safeguarding of IFPs by the approved EU Regulation 2017/373 FPD certified entity. A Letter of Agreement shall be signed to that effect, with the State, before any IFP is approved for publication.

**8.2. Periodic Review.**

8.2.1. Each IFP published in AIP Ireland will remain valid for a maximum period of five years from AIRAC effective date associated with approval of last submission (see para 7 IFP Submission for Approval & Publication).

8.2.2. A periodic review shall be conducted, by an approved EU Regulation 2017/373 FPD certified entity if any of the following conditions are met:

- Five-year validity period.
- Significant change to the aeronautical data, topographical data or obstacle environment requiring an amendment to OCA/H.
- Published bearing, track, or radial falls into error by 1 degree, consequent on a change to magnetic variation or station declination.
- A stakeholder identifies a requirement to improve safety or operational efficiency.
- Change to aircraft category or characteristics.
- Change to route connectivity or airspace organisation.
- Change to the supporting navigation facility environment.
- Amendments to applicable ICAO specifications or other international and national standards and recommended practices.
- Where a change in procedural attitude is required.
- Errors or anomalies.
- When a significant change occurs to aerodrome physical characteristics such as runways.

**8.3. Continuous Maintenance.** The following tasks shall be conducted as each change occurs by an approved EU Regulation 2017/373 FPD certified entity:

8.3.1. Assess the impact of all changes to obstacle data.

8.3.2. Assess the impact of all changes to aerodrome, aeronautical and navaid data.



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8.3.3. Assess the impact of all changes to the State Regulatory Framework.

8.3.4. Assess the impact of all changes to user requirements. Such changes include, but are not limited to:

- Fleet type (performance).
- Scheduled service route.
- ATM procedures.
- Airspace.

(Note: If the user requirements are not a safety-related issue, IFP amendments and/or new IFPs may be needed to satisfy current user requirements.)

**8.4. Safeguarding.**

8.4.1. Procedures shall be established by the sponsor for assessing & mitigating the risks associated with obstacles, developments and other activities which could impact IFPs.

8.4.2. Where an assessment of the impact of a structure on IFPs (See 8.4.4) is required it shall be completed by an approved EU Regulation 2017/373 FPD certified entity & supplied to the State by the entity responsible for safeguarding. The assessment shall be verified by a person(s), within an approved EU Regulation 2017/373 FPD certified entity, other than the designer, trained in procedure design and with the appropriate knowledge.

8.4.3. According to S.I. 215 of 2005, Irish Aviation Authority (Obstacles to Aircraft in Flight), Order, the IAA AUSD requires any person who seeks to erect a manmade object to notify the aerodrome operator of the intended operation **at least thirty days** in advance if the structure is to be erected in the vicinity of the aerodrome or the areas around the aerodrome and other protected surfaces associated with the aerodrome. This notification period is required to allow the aerodrome operator to evaluate the impact of the intended operation on the protected airspace established for the aerodrome.

**8.4.4. Regulation (EU) No 139/2014**

**8.4.4.1. Safeguarding of aerodrome surroundings**

8.4.4.1.1. GM1 to Article 8 & GM1 ADR.OPS. B.075(a)(1) — Other Surfaces:

8.4.4.1.1.1. *“Other surfaces associated with the aerodrome are surfaces that need to be established when operating in accordance with ICAO PANS-OPS Doc 8168 (Procedures for Air Navigation Services - Aircraft Operations), Volume II, as adopted into the national law”.*

8.4.4.1.2. Annex IV, Subpart B, ADR.OPS. B.075 - Safeguarding of aerodromes:

8.4.4.1.2.1. *“The aerodrome operator shall have procedures in place for mitigating the risks associated with obstacles, developments and other activities within the monitored areas that could impact safe operations of aircraft operating at, to or from the aerodrome”.*

**8.4.5. NOTAM**



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- 8.4.5.1. If a hazard is assessed as having a significant impact on the safe operation of an aircraft or a change to the information published in the AIP has taken place, then a NOTAM may be considered to announce the circumstances.
- 8.4.5.2. If the subject matter activity is known to extend beyond 90 days, an AIP change request or supplement shall also be requested. If at the time of NOTAM origination, the temporary activity is expected to be complete in less than 90 days, then an AIP change request or supplement will not be required. When a NOTAM with estimated end of validity unexpectedly exceeds the 90 days period, a replacement NOTAM shall be issued, unless the condition is expected to last for a further period of more than 90 days; in this case, an AIP Supplement shall be issued.
- 8.4.5.3. An aerodrome/ANSP provider has the sole responsibility for notifying relevant obstacles infringing their safeguarding area to the IAA.
- 8.4.5.4. A NOTAM proposal received from an aerodrome/ANSP should include:
  - 8.4.5.4.1. Type of obstacle
  - 8.4.5.4.2. Position of the obstacle in WGS84 Deg/Min/Sec.
  - 8.4.5.4.3. Obstacle height above Mean Sea Level (AMSL)
  - 8.4.5.4.4. Obstacle height above Ground Level (AGL).
  - 8.4.5.4.5. Commencement date
  - 8.4.5.4.6. Completion date.
  - 8.4.5.4.7. Lighting or marking.
- 8.4.5.5. Obstacles brought to the attention of the Aerodrome/ANSP provider that are believed to be within an aerodrome safeguarded area shall carry out a safeguarding assessment and notify the IAA and U-Space Manager of the outcome of that safeguarding assessment. **30 days prior to erection.**
  - 8.4.5.5.1. Any changes to the OCA(H) values for affected IFPs (by NOTAM) must be submitted for Regulatory Approval allowing **30 working days** for IAA AUSD review.
    - 8.4.5.5.1.1. The ANSP may issue a NOTAM stating the unavailability of the IFP without IAA AUSD approval.



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**9. Automation Tools**

- 9.1. IFPD automation tools have the potential to reduce errors in the procedure design process, as well as to standardise the application of the PANS-OPS criteria.
- 9.2. The approved EU Regulation 2017/373 FPD certified entity shall ensure that automation tools used in the design of IFPs are validated as per ICAO Doc 9906 Volume 3.
- 9.3. Failure to supply evidence of validation may result in the submission being rejected.



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## 10. Validation

10.1. Validation is the necessary final quality assurance step in the procedure design process, prior to publication. Validation consists of validation and as required, flight validation.

### 10.2. Validation.

10.2.1. Validation is a review of the entire IFP package by a person(s), within an approved EU Regulation 2017/373 FPD certified entity, other than the designer, trained in procedure design and with appropriate knowledge of validation issues. It is meant to arrest errors in criteria and documentation, and evaluate to the extent possible, those elements that will be evaluated in a flight validation. Issues identified in the validation should be addressed prior to any flight validation.

10.2.2. Validation shall be completed for each submission.

### 10.3. Flight Validation.

10.3.1. Flight validation (aircraft or simulator) shall be carried where required in consultation with the State by an approved organisation.

10.3.2. The approved EU Regulation 2017/373 FPD certified entity shall be the originator of all data applicable to conduct a flight validation provided to the flight validation operations activity. The approved EU Regulation 2017/373 FPD certified entity should be prepared to provide briefings to the flight validation crews.

10.3.3. The approved EU Regulation 2017/373 FPD certified entity may participate in the validation flight to assist in its evaluation and obtain direct knowledge of issues related to the IFP's design from the flight validation pilot and/or inspector.



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**11. Safety Risk Assessment.**

11.1. IFP Safety Risk Assessment (One IFP Risk assessment per IFP):

11.1.1. Identifies safety risks associated with a change to an existing or the development of a new IFP and mitigations prior to submission to the state authority. Factors determined to be safety-significant include but are not limited to:

- types of aircraft and their performance characteristics, including navigation capabilities and navigation performance.
- traffic density and distribution.
- airspace complexity; ATS route structure and classification of the airspace.
- aerodrome layout.
- type and capabilities of ground navigation systems.
- any significant local or regional data (e.g., obstacles, infrastructures, operational factors, etc.).
- post implementation monitoring to verify that the defined level of safety continues to be met.

11.1.2. Identifies compliances or differences with ICAO Doc 8168.

11.1.3. The sponsor shall ensure that the IFP Safety Risk Assessment is completed.

11.1.4. See Annex I for IFP Safety Risk Assessment Template.

11.2. ATM Safety Assessment. Where any element of an IFP affects a service provider's ATM functional system as defined under Regulation (EU) 2017/373, that service provider shall carry out a safety assessment in accordance with its safety management system.



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**12. Aeronautical Data.**

- 12.1. **eTOD.** See IAA ASAM 013 - Guidance Material on Electronic Terrain and Obstacle Data.
- 12.2. **Magnetic Variation.** The magnetic variation value shall be obtained from IAIP Ireland GEN 3.5 Meteorological Services.
- 12.3. **Station Declination.** The station declination value shall be obtained from IAIP Ireland GEN 2.5 List of Radio Navigation Aids.
- 12.4. **Hot & Cold temperature.** Hot & Cold temperature values shall be obtained from IAIP Ireland GEN 3.5 Meteorological Services.
- 12.5. **5LNCs.** See IAA ASAM 07 – Policy on Naming of Significant Points.
- 12.6. **Route Designators.** See IAA ASAM 016 - Policy on the identification of standard departure and arrival routes.
- 12.7. **Rounding.** Rounding of results shall follow the standard guidelines in ICAO Doc 8168 and related ICAO publications.



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**13. Errors, Inconsistencies & Anomalies.**

- 13.1. It is the responsibility of the Aerodrome Certificate Holder through unless a letter of agreement exists between the ANSP and the Aerodrome certificate holder, through continuous maintenance and periodic review to identify errors, inconsistencies & anomalies.
- 13.2. The State will ensure that identified errors, inconsistencies or anomalies are resolved in a timely manner.
- 13.3. The State will notify the Aerodrome Certificate Holder to publish, through NOTAM, the IFP as unavailable.
- 13.4. The IFP will remain unavailable until such time as the errors, inconsistencies or anomalies are resolved by the Aerodrome Certificate Holder.



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**14. External Queries.**

14.1. Queries received by the State from external entities, with respect to a specific published IFP, will be forwarded to the relevant sponsor. The sponsor will draft a response for the State for approval. The State shall reply to the original query.

14.1.1. In the instance where a reply is not drafted by the sponsor the State will draft same and respond to the original query.

14.2. A specific query may require the publication of a NOTAM. The sponsor will draft a NOTAM for the State for approval.

14.2.1. In the instance where a NOTAM is not drafted by the sponsor, the State will draft NOTAM for publication. The sponsor can choose to accept the state NOTAM or publish a State approved NOTAM by COB of that same day.



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**15. PANS-Ops Differences.**

15.1. The sponsor shall:

15.1.1. Identify any differences from ICAO Standards, Recommended practices & Procedures.

15.1.2. Ensure all differences are safety risk assessed.

15.2. Only where an identifiable operational advantage can be gained, without compromising safety will differences be considered.

15.3. The notification of differences will result in a considerably increased lead-in time due to the associated ICAO requirements (ICAO Doc 10055 Manual on Notification and Publication of Differences).

**1. Introduction.**

a. **Purpose.** The following is an IFP safety risk assessment for:

- i. [Description];
- ii. [Aerodrome/Location];
- iii. [ANSP];
- iv. [Effective Date];
- v. [etc].

b. **AIP sections affected:**

- i. [Relevant AIP Section];
- ii. [Effective Date].

**2. Compliance Check.**

a. **Compliant.** [The change is compliant with the State Regulatory framework. – Complete Annex I, paras 1 & 2].

b. **Non-compliant.** [Deviation from the State Regulatory framework. – Complete Annex I, paras 1 - 5].

3. **Documentation.** Please see attached:

- a. [e.g. Design file];
- b. [e.g. Updated chart];
- c. [e.g. Database Table];
- d. [e.g. Stakeholder consultation];
- e. [etc].

4. **IFPDSP.** The work was completed by [insert company], an approved IFPD service provider.

5. **Action Plan.** [Outline action plan to include post implementation monitoring to verify the defined levels of safety continues to be met].

**ANNEX 1 – IFP SAFETY RISK EVALUATION & COMPLIANCE CHECK**

1. **IFP Safety Risk Value Explanation.** Below are a simplified IFP safety risk assessment values from the guidelines as laid out in ICAO Safety Management Manual (SMM), document 9859 Part 6. Included in the following ICAO table is how the simplified values correspond to the ICAO values.

**Table 6-1. ICAO Risk Assessment Matrix Principles & Simplified Values**

SEVERITY OF CONSEQUENCES			LIKELIHOOD OF OCCURRENCE			Simplified IFP Safety Risk Assessment	
Aviation definition	Meaning	Value	Qualitative definition	Meaning	Value	Meaning	Value
Catastrophic	Equipment destroyed. Multiple deaths.	5	Frequent	Likely to occur many times	5	High risk	5
Hazardous	A large reduction in safety margins, physical distress or a workload such that the operators cannot be relied upon to perform their tasks accurately or completely. Serious injury or death to a number of people. Major equipment damage.	4	Occasional	Likely to occur sometimes	4	Medium risk	4
Major	A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of an increase in workload, or as a result of conditions impairing their efficiency. Serious incident. Injury to persons.	3	Remote	Unlikely, but possible to occur	3		3
Minor	Nuisance. Operating limitations. Use of emergency procedures. Minor incident.	2	Improbable	Very unlikely to occur	2	Low risk	2
Negligible	Little consequence.	1	Extremely improbable	Almost inconceivable that the event will occur	1		1

ICAO Safety Management Manual (SMM), document 9859 Part 6 states:

“6.4.2 When the acceptability of the risk has been found to be Undesirable or Unacceptable, control measures need to be introduced – the higher the risk, the greater the urgency. The level of risk can be lowered by reducing the severity of the potential consequences, by reducing the likelihood of occurrence or by reducing the exposure to that risk.”

2. **Initial IFP Safety Risk Evaluation & Compliance Check.**

Item	State Regulatory Framework Compliant	Low risk	Medium risk	High risk	Notes
		1 to 2	3 to 4	5	
[Insert Item 1]	Y/N				[Insert Explanation]
[Insert Item 2]	Y/N				
[Insert Item 3]	Y/N				
<b>Total assessed IFP safety risk value</b>					
<b>IFP Safety Risk Assessment</b>		<b>[Risk Level]</b>			

*Note: A separate ATM risk assessment may be required.*

3. **Conclusion.**

- a. The proposal [is / is not] compliant with the State regulatory framework.
- b. The IFP Safety risk is [un]acceptable.

***[N.B. When there is a deviation from the State regulatory framework and/or the risk is deemed greater than ‘low risk’, the proposal shall be withdrawn or a mitigation submitted (para 4) for consideration. An updated IFP Safety Risk Evaluation & Compliance Check shall be completed (para 5 & 6).]***

4. **Mitigation.** [Proposed mitigation if required].

5. **Updated IFP Safety Risk Evaluation & Compliance Check** (following mitigation in 4 above).

Item	State Regulatory Framework Compliant	Low risk	Medium risk	High risk	Notes
		1 to 2	3 to 4	5	
[Insert Item 1]	Y/N				[Insert Explanation]
[Insert Item 2]	Y/N				
[Insert Item 3]	Y/N				
<b>Total assessed IFP safety risk value</b>					
<b>IFP Safety Risk Assessment</b>		<b>[Risk Level]</b>			

*Note: A separate ATM risk assessment may be required.*

6. **Updated Conclusion.**

- a. The proposal [is / is not] compliant with the State regulatory framework (following mitigation in 4 above).
- b. The IFP safety risk is [un]acceptable (following mitigation in 4 above).

	ASD.F.324 AMDT No: 01 Issue Date: 14/10/20	AIRSPACE AND U-SPACE DIVISION POLICY AND PROCEDURES
<b>Title: Common Response Document - Airspace</b> (Airspace and U-Space Division, Instrument Flight Procedure & Chart Validation, Common Response Document)		
<b>Responsibility: Manager of Airspace and U-Space Division, Aviation Infrastructure Department</b>		

Name of Change :

Contributors :

Consolidator :

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**COMMENT RESPONSE DOCUMENT HISTORY**

Issue	Date	Description

**REVIEWED DOCUMENTS**

Acronym	Filename	Document Title	Version	Issue Date	Date Received

	ASD.F.324 AMDT No: 01 Issue Date: 14/10/20	AIRSPACE AND U-SPACE DIVISION POLICY AND PROCEDURES
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<b>Responsibility: Manager of Airspace and U-Space Division, Aviation Infrastructure Department</b>		

**STANDARDS UESD FOR VALIDATION**

Standard	Amendment	Corrigenda

	ASD.F.324 AMDT No: 01 Issue Date: 14/10/20	AIRSPACE AND U-SPACE DIVISION POLICY AND PROCEDURES
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<b>Responsibility: Manager of Airspace and U-Space Division, Aviation Infrastructure Department</b>		

This document is intended, through the different issues, to report the remarks corresponding to the regulatory oversight review activities performed on the identified document(s) corresponding to an Instrument Flight Procedure (IFP) and/or Chart Change(s).

Remarks are classified according to the following 4 categories:

- **Major:** A comment on a critical issue AUSD considers significant enough to prevent regulatory approval of the proposed change(s) unless resolved by the service provider (e.g. a non-conformity to applicable regulatory requirements, or non-adherence to an organisation's own requirement, or an important problem that shall be resolved by the organisation).
- **Minor:** A comment on other issues indirectly affecting the compliance demonstration, which AUSD considers are necessary to address before proceeding. Whilst not solely preventing regulatory approval of the proposed change(s) the accumulation of these issues can lead to the prevention of regulatory approval of the proposed change(s).
- **Question:** The question may be associated to an issue that requires clarification. However, upon receipt of further information the CRD question classification will change to a Closed, Minor or Major classification.
- **Editorial:** Observations on missing information or editorials of a nature which are needed to provide clarity or ensure no ambiguity exists by the absence of that information.

Additionally, it is necessary to note that the review process shall be rejected if any of the following conditions exist:

- Insufficient submission;
- Discrepancies noted;
- Requirements not met;
- Not submitted in the required time period.

Re-submissions following a rejection will be regarded as a separate submission and the process will recommence.

Comments and questions may be reclassified following updated information from the service provider.

Comments may have the following status:

- **Open:** For a new comment, or when a response is not yet considered satisfactory by the review team.
- **Dispositioned:** When an action is agreed.
- **Closed:** When the service provider provides a satisfactory written response, or when evidences are provided that an agreed action has been performed.

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No.	Doc.	Section	AUSD Comment/Observation/Question	Regulatory Reference	Classification	ANSP Answer	Status
R1.							

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Airspace and U-Space Inspector  
 AUSD/IAA