

APPENDIX H

AERONAUTICAL INFORMATION MANAGEMENT  
GUIDANCE

**EAPPRI Recommendations 1.8.1 -> 1.8.6**

# APPENDIX H

## AERONAUTICAL INFORMATION MANAGEMENT GUIDANCE

Accurate aerodrome charts showing relevant information for the pilot, manoeuvring area driver and aerodrome controller is fully acknowledged as an important contributor to the prevention of runway incursions. Errors contained in aerodrome charts have led to a loss of situational awareness and ground navigation errors by pilots and have been documented in runway accident reports. The following guidance material is intended to explain further the recommendations it refers to, contained in the European Action Plan for the Prevention of Runway Incursions, and complement the relevant ICAO provisions.

Time critical aerodrome information which may affect operations on or near the runway shall be provided to pilots in 'real-time' using radiotelephony communication, through the Flight Information Services in accordance to ICAO Annex 11(Ch 2 and 4), see the recommendations in the Communication section of this action plan. All other relevant services who obtain knowledge of conditions which may affect operations on or near the runway shall inform the Flight Information Services without delay to enable operational staff working on the manoeuvring area to react appropriately to their actual working environment. A number of recommendations are made in support of this objective.

**EAPPRI Recommendation 1.8.1** concerns the provision of adequate, timely, and quality aeronautical information

Quality assurance (QA) procedures shall be implemented by the ANSP/AISP. Adequate QA should also be implemented by any other organisation that originates numerical data supporting aeronautical data elements.

EUROCONTROL has developed guidelines supporting the implementation of Quality Management Systems in accordance with ISO 9001..

More info:

[http://www.eurocontrol.int/aim/public/standard\\_page/qm\\_qa.html](http://www.eurocontrol.int/aim/public/standard_page/qm_qa.html)

The aerodrome services responsible for the provision of raw data shall take into account data quality requirements, in particular on accuracy and integrity as stated in the relevant ICAO SARPS (Annex 15 – Ch 3, Annex 4, Annex 11- Ch 2 and Annex 14, VOL I – Ch 2).

### Reference documents

ICAO Annex 4, 11, 14, 15 and Doc 8126.

### Managing change

For promulgation of changes, AIS needs the adequate time for preparation, production and issue of relevant material for information. Close coordination is therefore required between those services concerned to ensure timely provision of information.

Of particular importance are changes that affect charts (e.g. AD Chart, AD Ground Movement Chart) and qualify to be notified by AIRAC.

The predetermined AIRAC effective dates shall be observed by the responsible AD services when submitting aeronautical information/data to AIS.

For notification of temporary changes by appropriate means of IAIP, considering the period of validity, AIS should follow the operating procedures as described by ICAO Doc 8126, Ch 5 and EUROCONTROL OPADD, Ch 2 (Operating Procedures for AIS Dynamic Data).

### **NOTAMs and AIP Supplements**

NOTAMs should not remain in force for more than three months. When a temporary change issued by NOTAM unexpectedly exceeds the three month period, a new or replacement NOTAM may be issued, but only in those cases where a condition is expected to last for a further period of a maximum of one to two months. If it is expected that the condition will last for a longer period of time, an AIP Supplement must be issued.

### **Reference documents**

ICAO Annex 4, 14 and 15,  
ICAO Doc 8126  
EUROCONTROL OPADD

### **Monitoring**

Data quality content of the AIP (Aeronautical Information Publication) published by ECAC States is monitored on a constant basis through the EUROCONTROL monitoring tools (e.g. AMMON for critical and essential data). AIS should monitor the departure/arrival time of the AIS products and the time required for postal delivery, in order to adhere to the AIRAC system (e.g. using EUROCONTROL tool Tracker).

More info:

[http://www.eurocontrol.int/aim/public/standard\\_page/qm\\_ammon.html](http://www.eurocontrol.int/aim/public/standard_page/qm_ammon.html)

[http://www.eurocontrol.int/aim/public/standard\\_page/ptracker.html](http://www.eurocontrol.int/aim/public/standard_page/ptracker.html)

### **Data consistency & completeness**

European AIS Database (EAD) enables aeronautical information providers to enter and maintain their data in the repository and enables data users to retrieve and download AIS data and AIP charts in a digital format. The quality of data is enhanced by using international standards and data checking procedures, including validation and verification. EAD performs regular data quality/completeness reviews and reports results to data providers.

More info:

[www.eurocontrol.int/ead](http://www.eurocontrol.int/ead)

The Implementing Rule on Aeronautical Data and Information Quality (ADQ IR) developed by EUROCONTROL and adopted by the European Commission (January 2010) is now referred to as the Commission Regulation (EU) No 73/2010. The Regulation is laying down the requirements on the quality of aeronautical data and information for the single European sky, in terms of accuracy, resolution, integrity and timeliness. The actual scope goes beyond the ANSPs/AISPs to include non-ANSP entities. In terms of scope, the aeronautical data/information process chain extends from original data sources (e.g. surveyors, procedure designers, AD, etc.), through AIS (publication) to the end use, either by human users or aeronautical applications. Concerning AD Operators, it applies for those aerodromes for which IFR or Special-VFR procedures have been published in national AIPs, as such procedures demand higher data quality.

More info:

[www.eurocontrol.int/adq](http://www.eurocontrol.int/adq)

[www.eurocontrol.int/ses](http://www.eurocontrol.int/ses)

[ec.europa.eu/transport/air/single\\_european\\_sky/](http://ec.europa.eu/transport/air/single_european_sky/)

This is linked to the ESSIP objective INF05-Improve end-to-end integrity of aeronautical data, with a planned completion date by end 2009. It will be superseded by the new SES-related regulatory implementation objective (ITY-ADQ Ensure quality of aeronautical data and aeronautical information - under development) which is derived from the Commission Regulation (EU) 73/2010.

More info:

[www.eurocontrol.int/essip](http://www.eurocontrol.int/essip)

### **EAPPRI Recommendation 1.8.2 concerns data integrators / post-AIS data providers**

Processes between providers of aeronautical data bases and charts (data integrators) and AISP should be in place, with the objective to ensure that aeronautical data is processed according to the relevant standards.

#### **Reference documents**

EUROCAE ED76/RTCA Do 200A, Standards for processing Aeronautical data

EUROCAE ED 77/RTCA Do 201A, Standards for Aeronautical Information

### **EAPPRI Recommendation 1.8.3 concerns the user feedback process**

AISPs should establish procedures, as part of the Quality Management System (QMS) allowing for the users to provide feedback. A mechanism should also be in place to ensure that the users' queries are addressed accordingly.

#### **Post-Flight Information**

Additional current information/data relating to the aerodrome of departure and any inadequacies observed shall be reported by Aircraft Operators (Annex 6, Part 1 - Ch 4 and Part II, Section II - Ch 2) and collected to enable AIS processing of Post-Flight information without delay (Annex 15 and Doc 8126 - Ch 8 and Annex 14 - Ch 9).

**Arrangements shall be made at the aerodromes to receive this information. Pilots should adhere to the established procedures and reporting mechanism.**

#### **Reference documents**

ICAO Annex 6, 14 and 15

ICAO Doc 8126

#### **Communication tools**

EUROCONTROL has means in place to facilitate communication:

-“AIS AGORA” is an aeronautical information online forum recognised globally.

[www.eurocontrol.int/aisagora](http://www.eurocontrol.int/aisagora)

-“European @is online” is a collection of links about the AIS and aeronautical information resources available on the Internet.

[http://www.eurocontrol.int/aim/public/standard\\_page/web\\_eur.html](http://www.eurocontrol.int/aim/public/standard_page/web_eur.html)

### **Recommendation 1.8.4 concerns user friendliness of the AIP Charts**

Aerodrome charts are provided in a wide variety of formats. Some formats are user friendly and some may compromise pilots as they fly from one State to another, requiring extra effort to ensure correct understanding of the important information they contain. In particular, Hot Spots at aerodromes need to be clearly communicated.

#### **Designation and publication of Hot Spot(s) in States AIP**

The respective aerodrome operator shall designate, whenever necessary, a location or several locations on the movement area of the aerodrome as Hot Spot(s). A hot spot(s) shall be published in the AIP on the relevant charts for those aerodromes with a history where there is a potential increased risk of collision or runway incursion and where heightened attention by pilots/drivers is necessary. The criteria used to establish a hot spot on a chart and the symbols to be used are contained in Annex 4, with more guidance provided in Annex 14 and Doc 9870.

#### *Note:*

*ICAO Definition of a Hot Spot: A location on an aerodrome movement area with a history or potential risk of collision or RWY incursion, where heightened attention by pilots/drivers is necessary (ICAO Annex 4).*

#### **Publication of Runway holding positions in States AIP**

ICAO defines the required publication resolution for runway holding positions (Annex 15, App. 7 and Annex 4, App. 6), for insertion on relevant aeronautical charts. This data element is stated as critical in the ICAO Aeronautical Data Quality Requirements tables.

ICAO Annex 15 (App. 1) does not contain a requirement to publish the latitude /longitude of runway holding positions in the State AIP, Part3 AD, AD 2.

Nevertheless, timely and accurate information of established runway holding positions is vital for runway incursion prevention, and their publication in the AIP and on (electronic) charts. Therefore geographical coordinates of Runway holding positions should be published in States AIP.

Similar ambiguity in ICAO SARPS, where quality requirements have been defined but no publication required, is observed in relation to some essential aerodrome data elements such as geographical coordinates of taxiway centre line points, taxiway intersection marking line, and taxiway/runway shoulder width.

#### **Reference documents**

ICAO Annex 4, 14 and 15

ICAO Doc 9870

The ICAO AIS-AIM Study Group has acknowledged a need to update the ICAO Doc 8697 Aeronautical Chart Manual to enhance ergonomics of maps and charts, to reflect user needs and technical developments. EUROCONTROL actively supports this activity.

More info:

<http://www.icao.int/anb/AIM/>

### **EAPPRI Recommendation 1.8.5 concerns Digital Aeronautical Information Management**

The availability of digital aeronautical information depends upon the move towards a networked data centric environment based on common data exchange models as developed in the context of the transition from AIS to AIM. The Aeronautical Information Exchange Model (AIXM), developed by EUROCONTROL and FAA, supports the ICAO and user requirements for aeronautical data including obstacles, terminal procedures and airport mapping databases. It contains an exhaustive temporality model that enables the provision of digital NOTAM. In turn, this enables the update of digital charts on the ground and in the air with the latest information about the aerodrome surfaces.

More info:

[http://www.eurocontrol.int/aim/public/standard\\_page/aixm.html](http://www.eurocontrol.int/aim/public/standard_page/aixm.html)

[www.aixm.aero](http://www.aixm.aero)

Airport Mapping Databases (AMDB) is one of the fundamental developments to runway incursion prevention. Requirements on States to provide core airport mapping data are envisaged to be included in ICAO SARPS. This should enable AISPs, Airlines and Aerodromes to move towards a business driven collaborative information sharing environment.

In order to enable future collaborative runway incursion prevention applications, it is recommended to create common on-line aerodrome mapping services based on the EUROCAE ED99A Aerodrome mapping standard. The implementation should follow a services oriented approach as envisaged by Digital AIM (D-AIM). This will enable on-line access of shared Hot Spot information and electronic display in on-board Electronic Flight Bags.

More info:

[www.d-aim.aero](http://www.d-aim.aero)

[www.eurocontrol.int/aim](http://www.eurocontrol.int/aim)

### **Reference documents**

EUROCAE ED-99/RTCA DO-272 document "User requirements for airport mapping"

It specifies the user requirements for aerodrome mapping database content and quality. The document forms the basis for an RTCA/EUROCAE specification effort related to the creation of a common database interchange standard for aerodrome mapping.

More info:

<http://www.eurocae.org/>

ICAO AIS-AIM Study Group is identifying SARPS and guidance material related to an appropriate presentation of digital Aeronautical Information to the end user, including eAIP Specification, electronic charts and use of AMDB. EUROCONTROL actively supports this activity.

More info:

<http://www.icao.int/anb/AIM/>

**EAPPRI Recommendation 1.8.6 concerns working arrangements between data originators and AISP to improve quality of the originated aeronautical data and its management.**

Formal arrangements allow a solid baseline against a data provider and a data receiver may reasonably expect the exchange of aeronautical data/information to take place.

Formal arrangements should be established between AISP and aerodrome authorities responsible for aerodrome services to report to the responsible AIS Unit with a minimum of delay. This would include information on AD conditions the serviceability and operational status of associated facilities, visual and non-visual navigation aids and the state of the manoeuvring area (Annex 14, Ch 2).

To ensure promptness and accuracy in the provision of aeronautical information, liaison should be arranged between AISP and data providers being responsible for the origination of current information/data.

**Reference documents**

ICAO Doc 8126, Annex 14 and Annex 15

Formal arrangements between data providers and ANSP/ AISP (e.g. in a form of a contract or Service Level Agreements - SLA) should be introduced to support and enable the relevant data exchange.

The Commission Regulation (EU) No. 73/2010 (ADQ) addresses interoperability between the data supply chain actors from original data sources through AIS to the next intended user. Post-publication functions will be addressed by ADQ-II in the near future.

**Reference documents**

ICAO Annex 14

Commission Regulation (EU) No 73/2010

More info:

[www.eurocontrol/adq](http://www.eurocontrol/adq)

EUROCONTROL has developed guidance about how to facilitate the establishment of SLAs between aeronautical data originators/providers and AISP, with the purpose to set agreed required quality levels of the data, the timeframe of delivery and their format. Guidance is provided by the following CHAIN (ref. CHAIN - Controlled and Harmonised Aeronautical Information Network). Deliverables:

- Enhanced guidance material;
- Implementation support and training.

More info:

[http://www.eurocontrol.int/aim/public/standard\\_page/chain\\_sla.html](http://www.eurocontrol.int/aim/public/standard_page/chain_sla.html)  
[www.eurocontrol.int/chain](http://www.eurocontrol.int/chain)

**Reference Documents**

ICAO Annex 4 Aeronautical Charts

ICAO Annex 6 Operation of Aircraft

ICAO Annex 11 Air Traffic Services

ICAO Annex 14 Aerodromes

ICAO Annex 15 Aeronautical Information Services

ICAO Doc 8126 Aeronautical Information Services Manual

ICAO Doc 8697 Aeronautical Chart Manual

ICAO Doc 9870 Manual for Preventing Runway Incursions

EUROCONTROL OPADD