

EUROCONTROL Guidelines for harmonised AIP publication and data set provision

Edition number: 2.1 Edition date: 31/05/2022

Document reference: EUROCONTROL-GUID-172







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DOCUMENT IDENTIFIER: EUROCONTROL GUID-172

Edition Number : 2.1

Edition Date : 31/05/2022

Status : Released Issue

Intended for : General Public

Category : EUROCONTROL Guidelines

DOCUMENT CHARACTERISTICS

TITLE					
EUROCONTROL Guidelines for harmonised AIP publication and					
	data	a set provision			
		Publications Reference:	GUID-172		
		ISBN Number:	978-2-87497-098-6		
Document	Identifier	Edition Number:	2.1		
EUROCONTRO	OL-GUID-172	Edition Date:	31/05/2022		
		Abstract			
aeronautical inform serving as a refer	These EUROCONTROL Guidelines provide harmonising guidelines for the publication of aeronautical information in Aeronautical Information Publication (AIP) and data set provision, serving as a reference document for the ECAC States on agreed harmonising solutions, complementing current ICAO AIS provisions.				
the AIP, the manne provisions are cons	These Guidelines cover problems associated with the selection of information to be contained in the AIP, the manner of presentation and use of harmonised terminology for which ICAO AIS provisions are considered insufficient. The objective is for these Guidelines to be used to achieve harmonised AIP publication and aeronautical data set provision within the ECAC area.				
		Keywords			
ICAO AIS Manual (Doc 8126)	Harmonication AIP Guidelines				
Data Provision	Annex 15	PANS-AIM			
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STATUS, AUDIENCE AND ACCESSIBILITY					
Status		Intended fo	r	Accessible via	
Working Draft		General Public	\boxtimes	Intranet	
Draft		EUROCONTROL		Extranet	
Proposed Issue		Restricted		Internet (www.eurocontrol.int)	\boxtimes
Released Issue	\boxtimes				

DOCUMENT APPROVAL

AUTHORITY	NAME AND SIGNATURE	DATE	
Director General	Eamonn BRENNAN	31/5/22	
001			

DOCUMENT CHANGE RECORD

The following table records the complete history of the successive editions of the present document.

EDITION NUMBER	EDITION DATE	REASON FOR CHANGE	PAGES AFFECTED
1.0	26 April 2018	Released issue addressing comments from public consultation and endorsement by the AIM/SWIM Team 14 th meeting.	All
2.0	April 2019	Released issue of second edition, providing new guidelines endorsed by the AIM/SWIM Team concerning time expressions in AIS publications, control areas and areas involved in the transfer of ATS responsibilities and associated information to FRA significant points. New and updated references to the European Route Network Improvement Plan (ERNIP) Part 1 and Part 3 related to publication guidelines for No Planning Zone, Conditional Routes and reserved/restricted areas. Updated Annex B References, new Annex C.	10-16, 22-28, 32-35
2.1	May 2022	Released edition 2.1 includes updated references with regard to publication of airspace elements in European Route Network Improvement Plan (ERNIP) Part 1, general provisions for the publications in support of non-standard landing sites and General Aviation airspace users and updates and clarifications on AIP and Obstacle data set provision, incl. addition of the Data set provision checklist (see Annex C – Amendments to the Guidelines).	All

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EXECUTIVE SUMMARY

In 2015, the AIM/SWIM Team discussed the urgent need for European guidance in addition to, or in the absence of, sufficient publication guidance in ICAO Aeronautical Information Services (AIS) Manual (Doc 8126), in support of European AIS needs. It was clear that there was a need to develop EUROCONTROL Guidelines for harmonised AIP publication and data set provision.

The document has been developed and updated for its subsequent editions with the involvement of the AIM Group's AI Operations Sub-group, set up under EUROCONTROL working arrangements, and comprises harmonised aeronautical information publication and data set provision practices developed per subject, as endorsed by the AIM Group.

In addition, AIS stakeholders recognise that European aeronautical information publication guidance is also developed in domains other than AIM and published in EUROCONTROL documents not always known to, or easily accessible by, the AIS. This document therefore references other documents providing AIP publication guidance, collating all available EUROCONTROL aeronautical information publication guidance in one document. The detailed guidelines set out in other documents are not duplicated in this document; instead, a reference and/or link is provided to the respective documents.

These EUROCONTROL Guidelines have been developed under the EUROCONTROL Regulatory and Advisory Framework (ERAF) and are maintained by EUROCONTROL, bringing systematic review in accordance with the above framework.

1 Introduction

1.1 Purpose of the document

The purpose of these EUROCONTROL Guidelines is to provide harmonising guidance for the publication of aeronautical information in AIPs and on data set provision, serving as a reference document¹ for ECAC States on agreed solutions complementing current ICAO AIS provisions. The guidance covers problems associated with the selection of information to be included in the AIP, the manner of presentation and the use of harmonised terminology for which ICAO AIS provisions are considered insufficient.

1.2 Scope

These Guidelines cover information elements published in accordance with ICAO Annex 15 and PANS-AIM (Doc 10066) for which no sufficient guidance material is available in ICAO AIS Manual (Doc 8126), and for aspects developed and applied in Europe for which no publication guidance is provided by ICAO.

The document includes guidelines developed and approved by the EUROCONTROL AIS stakeholders, and serves as placeholder for future needs regarding aeronautical information publication and data set provision guidelines. In addition, the document provides references and/or links to other EUROCONTROL documents containing AIP publication guidance, with a view to collating aeronautical information publication guidance within a single document.

Although the first edition of these Guidelines focused on AIP publication, the document in its current form is a placeholder for commonly agreed solutions for data set provision which may emerge to complement ICAO guidance material as States progressively provide AIP data sets.

The relevant EAD Static Data Operations (SDO) Data Harmonisation Objectives (DHO) are referenced to publication subjects as applicable. Where references are provided to other documents, any applicability of such guidance is in accordance with the respective documents.

1.3 Document structure

The document contains chapters and appendices as follows:

Chapter 1 – **Introduction**, presents the context, purpose, scope, convention and maintenance process of the Guidelines.

Chapter 2 – AIP publication guidelines, include harmonised aeronautical information publication guidance per subject complementing the ICAO AIS Manual (Doc 8126), provided either as publication guidelines developed and agreed by the AIM community, or as references to other EUROCONTROL documents containing publication guidelines.

Chapter 3 – Data set provision guidelines, include harmonised guidance for data set provision complementing the ICAO AIS Manual (Doc 8126), provided either as guidelines developed and agreed by the AIM community, or as references to other EUROCONTROL documents containing guidelines.

Chapter 4 – AIP charts guidelines, provide harmonised guidance for the publication of AIP charts.

Annex A - Data set provision checklist

¹ These EUROCONTROL Guidelines serve as a support to the amended Commission Implementing Regulation (EU) 2017/373 as described in Easy Access Rules [RD 10] and AIR Guide [RD 12].

Annex B - Document update procedures

Annex C – Amendment to the Guidelines, list of amendment applied in comparison with previous edition.

1.4 EUROCONTROL Guidelines

EUROCONTROL guidelines, as defined in EUROCONTROL Regulatory and Advisory Framework (ERAF), are advisory materials and contain:

"Any information or provisions for physical characteristic, configuration, material, performance, personnel or procedure, the use of which is recognised as contributing to the establishment and operation of safe and efficient systems and services related to ATM in the EUROCONTROL Member States."

Therefore, the application of EUROCONTROL guidelines document is not mandatory.

In addition, EUROCONTROL Regulatory and Advisory Framework specifies that:

"EUROCONTROL Guidelines may be used, inter alia, to support implementation and operation of ATM systems and services, and to:

- complement EUROCONTROL Rules and Specifications;
- complement ICAO Recommended Practices and Procedures;
- complement EU legislation;
- indicate harmonisation targets for ATM Procedures;
- encourage the application of best practice;
- provide detailed procedural information."

1.5 Convention

These EUROCONTROL Guidelines are of informative character with the objective to enable harmonisation of ECAC States' aeronautical information publication and data set provision.

Guidelines using the term *should* are recommended, whereas Guidelines using the term *may* are optional. The term *shall* is used where appropriate in the context of ICAO SARPs or European regulatory references and is then indicating the status of that particular text as *mandatory*.

1.6 Abbreviations

5ANNC	5-Alfa-Numeric Name Code	
5LNC	5-Letter Name Code	
ACC	Area Control Centre <i>or</i> Area control	
AD	Aerodromes (AIP Part)	
ADQ	Aeronautical Data Quality	
AIC	Aeronautical Information Circular	
AIM	Aeronautical Information Management	

AIP	Aeronautical Information Publication	
AIXM	Aeronautical Information Exchange Model	
AIS	Aeronautical Information Services	
AMC	Airspace Management Cell	
AoR	Area of Responsibility	
ATC	Air Traffic Control	
ATS	Air Traffic Services	
ATZ	Aerodrome Traffic Zone	
ASM	Airspace Management	
СВА	Cross-border Area	
CDR	Conditional Route	
СТА	Control Area	
DHO	Data Harmonisation Objectives (EAD SDO)	
DQR	Data Quality Requirements	
EAD	European AIS Database	
EAPPRI	European Action Plan for the Prevention of Runway Incursions	
EAW	Early Access to Weekend	
EC	European Commission	
ECAC	European Civil Aviation Conference	
ENR	En route (AIP Part)	
ERAF	EUROCONTROL Regulatory and Advisory Framework	
ERNIP	European Route Network Improvement Plan	
EU	European Union	
EUROCONTROL	European Organisation for the Safety of Air Navigation	
FAB	Functional Airspace Block	
FBZ	FPL Buffer Zone	
FRA	Free Route Airspace	
FIR	Flight Information Region	
FIZ	Flight Information Zone	

GEN	General (AIP Part)	
ICAO	International Civil Aviation Organisation	
NPZ	No Planning Zone	
PANS-AIM	Procedures for Air Navigation – Aeronautical Information Management	
PANS-OPS	Procedures for Air Navigation Services - Aircraft Operations	
PBN	Performance Based Navigation	
PBN ISG	PBN Implementation Support Group	
RMZ	Radio Mandatory Zone	
RNAV	Area Navigation	
RNP	Required Navigation Performance	
SARPS	Standards And Recommended Practices (ICAO)	
SID	Standard Instrument Departure	
SDO	Static Data Operations (EAD)	
ss	Sunset	
SR	Sunrise	
STAR	Standard Instrument Arrival	
SWIM	System Wide Information Management	
ТМА	Terminal control Area	
тмz	Transponder Mandatory Zone	
TOD	Terrain and Obstacle Data	
UID	Unique Identifier	
UIR	Upper Flight Information Region	
UTA	Upper Control Area	
итс	Co-ordinated Universal Time	
vcs	Voice Channel Spacing	

1.7 Reference documents

- [RD 1] ICAO Annex 15 Aeronautical Information Services, sixteenth edition (July 2018).
- [RD 2] ICAO PANS AIM (Doc 10066), first edition (2018), incl. Amendment 1 (November 2021).
- [RD 3] ICAO Aeronautical Information Services Manual (Doc 8126), seventh edition, unedited version (2021).

- [RD 4] ICAO Annex 4 Aeronautical Charts, eleventh edition (July 2016).
- [RD 5] ICAO EUR Doc 7754 EUR Navigation Plan eANP Volume III https://www.icao.int/EURNAT/Pages/EUR-and-NAT-Document.aspx
- [RD 6] Commission Implementing Regulation (EU) 2017/373 (March 2017)
- [RD 7] Easy Access Rules for Air Traffic Management/Air Navigation Services (Regulation (EU) 2017/373)
 - https://www.easa.europa.eu/document-library/easy-access-rules/easy-access-rules-air-traffic-managementair-navigation-services
- [RD 8] EUROCONTROL Terrain and Obstacle Data Manual, Ed. 3.0 (June 2021). https://www.eurocontrol.int/publication/eurocontrol-terrain-and-obstacle-data-manual
- [RD 9] EUROCONTROL European Route Network Implementation Plan Part 1, Airspace Design Methodology Guidelines General Principles and Technical Specifications for Airspace Design, (June 2021).
 - https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-1
- [RD 10] The European Action Plan for the Prevention of Runway Incursion (EAPPRI), version 3 (2017).
 - https://www.eurocontrol.int/publication/european-action-plan-prevention-runway-incursions-eappri
- **[RD 11]** EUROCONTROL Guidance for Military Aeronautical Information Publications Consistency with ICAO Annex 15, Ed. 1.0 (08/03/2017).
 - https://www.eurocontrol.int/publication/eurocontrol-guidance-military-aeronautical-information-publications-consistency-icao
- [RD 12] EUROCONTROL 8.33 kHz Voice Channel Spacing (VCS) Implementation Handbook (Ed. 1.1 July 2017).
 - https://www.eurocontrol.int/publication/833khz-voice-channel-spacing-vcs-implementation-handbook
- [RD 13] AIP and Obstacle Data Sets Interoperability Rules (AIXM Coding Guidelines Work area Obstacle Data Set Interoperability Rules)
 - https://ext.eurocontrol.int/aixm_confluence/display/ACGAIP/Data+set+files
- [RD 14] EUROCONTROL Guidelines Supporting the Implementation of Aeronautical Information Requirements (AIR Guide)
 - https://www.eurocontrol.int/publication/eurocontrol-guidelines-supporting-implementation-aeronautical-information-requirements

1.8 Maintenance of this document

The Guidelines for harmonised AIP publication and data set provision have been developed in line with the EUROCONTROL Standards Development Process and are maintained by EUROCONTROL. Aeronautical Information Management Group (AIMG) and its subordinate working arrangements will remain the prime interface for the evolution of this document in accordance with ANNEX B – Document update procedures.

2 AIP publication guidelines

2.1 Airspace information

2.1.1 Prohibited, Restricted and Danger areas

2.1.1.1 Publication guidelines for P, R and D areas are provided in ERNIP Part 1 - European Airspace Design Methodology Guidelines - General Principles and Technical Specifications for Airspace Design [RD 9], paragraph 9.4.1

The publication guidelines include rules for:

- appropriate AIP section:
 - o ENR 5.1 Prohibited, restricted and danger area.
- identification,
- name (if applicable), and
- area definition.

It provides a fictitious example of the AIP ENR 5.1 table with reference to ICAO AIS Manual (Doc 8126) [RD 3], illustrating relevant information (incl. naming/ identification structure) to be published for P, R and D areas in AIP and how to be provided in Aeronautical Data Catalogue in reference to ICAO Doc 10066 PANS-AIM [RD 2] and Appendix 1 to Annex III (Part-ATM/ANS.OR) of Commission Implementing Regulation (EU) 2017/373 [RD 6].

2.1.2 Airspace Management Cell (AMC) manageable areas

2.1.2.1 Publication guidelines of AMC-manageable areas are provided in ERNIP Part 1[RD 9], paragraph **9.2**, **9.4.2** and **9.13.2**.

The publication guidelines include rules for:

- appropriate AIP section:
 - ENR 5.2 Military exercise and training areas and air defence identification zone (except those currently published in ENR 5.1).
- identification,
- name (when and if required), and
- area definition.

It provides a fictitious example of the AIP ENR 5.1 table with reference to ICAO AIS Manual (Doc 8126) [RD 3], illustrating relevant information (incl. naming/ identification structure) to be published for AMC manageable areas in AIP and how to be provided in Aeronautical Data Catalogue in reference to ICAO Doc 10066 PANS-AIM [RD 2] and Appendix 1 to Annex III (Part-ATM/ANS.OR) of Commission Implementing Regulation (EU) 2017/373 [RD 6].

2.1.3 FPL Buffer Zone (FBZ)

2.1.3.1 Publication guidelines of FPL Buffer Zone (FBZ) are provided in ERNIP Part 1 [RD 9], paragraph **9.4.3.**

The guidelines provide relevant AIP placeholders for information related to the FBZ and its application, as well as procedures and means of notification of activation of the FBZ.

It provides a fictitious example of the AIP ENR 5.1/5.2 table with reference to ICAO AIS Manual (Doc 8126) [RD 3], illustrating relevant information (incl. naming/ identification structure) to be published for FBZ (and also "multiple" FBZ; FBZ associations with P/R/D areas, TSA, TRA and CBA) in AIP and how to be provided in Aeronautical Data Catalogue in reference to ICAO Doc 10066 PANS-AIM [RD 2] and Appendix 1 to Annex III (Part-ATM/ANS.OR) of Commission Implementing Regulation (EU) 2017/373 [RD 6].

2.1.3.2 Related EAD Static Data Operations Data Harmonisation Objective:

SDO DHO-15 Flight plan buffer zone (FBZ).

2.1.4 Cross-border area (CBA) identification

- **2.1.4.1** Relevant Cross-border area (CBA) publication guidelines with relation to other zones are stipulated in ERNIP Part 1 [RD 9], paragraph **9.4.2** and **9.4.3** (for the FBZ associated to CBA).
- **2.1.4.2** Related EAD Static Data Operations Data Harmonisation Objective: SD0 DH0-8 Cross-border Area (CBA).

2.1.5 Free Route Airspace (FRA)

- **2.1.5.1** Publication and data provision guidelines for Free Route Airspace information are provided in ERNIP Part 1 [RD 9], section **9.6** and **10.4**
- **2.1.5.2** The FRA AIP publication guidelines in ERNIP Part 1 covers:
 - Terminology in GEN 2.2 Abbreviations used in AIS publications;
 - FRA general and cross-border procedures in ENR 1.3 Instrument flight rules;
 - Flight planning in ENR 1.10;
 - Free route airspace structures in ENR 2.2;
 - Cross-border application of FRA in ENR 2.2;
 - FRA connecting routes to/from terminal airspace and aerodromes in ENR 3.5;
 - FRA significant points in ENR 4.1 and 4.4, including publication of vertical limits, aerodromes and time periods associated with FRA relevance on significant points;
 - Airspace reservations:
 - FRA charts in ENR 6 and considerations for terminal charts;
 - FRA AIP publication template;
 - FRA provided in Aeronautical Data Catalogue.
- **2.1.5.3** Related EAD Static Data Operations Data Harmonisation Objective:

SDO DHO-7 Free Route Airspace (FRA).

2.1.5.4 In order to permit ATS to obtain information regarding the progress of aircraft in flight, selected significant points may need to be designated as *reporting points*². The principle AIP placeholder for information on compulsory or on-request reporting on FRA significant points is the ENR 6 en-route chart for FRA.

The charting symbols for the FRA significant points on the ENR 6.x.FRA Index Chart are sufficient with regard to AIP publication. ICAO Annex 4 [RD 4] Aeronautical Charts symbols for significant points' functionality "compulsory" and "on-request" are applied, as well as ERNIP Part 1 [RD 9] section 9.6 Charts.

The EAD SDO DHO-7 FRA provides a solution for coding compulsory and/or on-request reporting information on FRA significant points, in cases where the ATS route network is completely removed from the AIP.

² Reporting points are established either as "*compulsory*" or as "*on-request*" (*ICAO 11, Appendix 2, paragraph 5*). Hence, to be noted, that it is not mandatory to designate a reporting status on a significant point and a significant point can have different reporting status depending on its use.

2.1.6 Functional Airspace Block (FAB)

2.1.6.1 The recommended AIP placeholder for publication of Functional Airspace Block (FAB) area structures and operational usage is ENR 2.2 Other regulated airspace.

2.1.6.2 ENR 2.2 Other regulated airspace

The following information for the area structure and operational usage for the FAB is published:

- Name and geographical coordinates of the FAB published as a single area, representing the common boundary of the included FIRs/UIRs.
- Vertical limits applied in the FAB (one value applicable for the entire FAB).
- In the remarks column, the FIRs/UIRs involved in the FAB and a reference to the respective States' AIP for detailed description of the FIR/UIR.
- In the remarks column, a reference to relevant aeronautical chart is available.

Name/ID	Unit(s)providing service	RMK
Lateral and vertical limits		
1	2	3
Insert coordinates (latitude/ longitude for the entire functional airspace block, as a single area. UNL GND	AMSWELL ACC xxxxxxx ACC xxxxxxx ACC	DONFAB covers in addition to xxxxxx FIR the (insert names of included FIR as appropriate) FIR. REF AIP for (State), (State) for exact description of their area of responsibility. REF ENR 6.2 – 13.

AIP template for Functional Airspace Block information.

2.1.6.3 Related EAD Static Data Operations Data Harmonisation Objective: SDO DHO-14 Functional Airspace Block (FAB).

2.1.7 Aerodrome Traffic Zone (ATZ) and Flight Information Zone (FIZ)

- **2.1.7.1** Publication guidelines for Aerodrome Traffic Zone (ATZ) and Flight Information Zone (FIZ) are provided in ERNIP Part 1 [RD 9], section **9.5.4**.
- **2.1.7.2** The publication guidelines provide relevant AIP/Aeronautical Data Catalogue placeholders for information related to the ATZ and FIZ area description and identification. General guidelines are also provided for depiction of the ATZ/FIZ on aeronautical charts

2.1.8 No Planning Zone (NPZ)

- **2.1.8.1** Publication guidelines for No Planning Zone (NPZ) are provided in ERNIP Part 1 [RD 9], section **9.5.5**.
- **2.1.8.2** The publication guidelines provide relevant AIP/Aeronautical Data Catalogue placeholders for information related to the NPZ area description and for information relevant for flight planning, and guidelines for identification of the NPZ area. Guidelines are also provided for depiction of the NPZ on aeronautical charts.

2.1.9 Radio Mandatory Zone (RMZ) and Transponder Mandatory Zone (TMZ)

- **2.1.9.1** Publication guidelines for Radio Mandatory Zone (RMZ) and Transponder Mandatory Zone (TMZ) are provided in ERNIP Part 1 [RD 9], section **9.5.6**.
- **2.1.9.2** The publication guidelines provide relevant AIP/Aeronautical Data Catalogue placeholders for information related to the RMZ and TMZ area description and identification. General guidelines are also provided for depiction of the RMZ/TMZ on aeronautical charts
- **2.1.9.3** Related EAD Static Data Operations Data Harmonisation Objective: SDO DHO-21 RMZ and TMZ

2.1.10 CTA/UTA/TMA/CTR and areas for cross-border provision of ATS

- 2.1.10.1 Publication guidelines for Control Area(s) (CTA), Upper Control Area(s) (UTA), Terminal control area(s) (TMA) and Control zone (CTR) are provided in ERNIP Part 1 [RD 9], sections 9.3.2-9.3.4.
- **2.1.10.2** The publication guidelines provide relevant AIP/Aeronautical Data Catalogue placeholders for information related to the CTA/UTA/TMA/CTR description and identification.
- **2.1.10.3** Publication guidelines regarding Areas of Responsibility and (AoR) and Areas for cross-border provision of ATS are provided in ERNIP Part 1 [RD 9], sections **9.5.1-9.5.2**.
- **2.1.10.4** Publication resolution should be maintained in accordance with PANS-AIM (Doc 10066) [RD 2].

Example 1: Sweden has delegated the responsibility for ATS provision in several areas to adjacent ACC Oslo, and publish in AIP SWEDEN ENR 2.2:

3 Delegering av ansvaret att tillhandahålla ATS / Delegation of the Responsibility for Provision of ATS

3.1 Lists of airspace with delegation of the responsibility for provision of ATS in SWEDEN FIR

Name	Lateral limits	Vertical limits Class	ATC unit
Area BOHUS a	595326N 0120556E - 594649N 0120631E - 592920N 0115430E - 592200N 0114740E Swedish/Norwegian border northward to - 595326N 0120556E	FL 285 FL 215 Class: C	ATS delegated to ACC Oslo. See AIP Norway
Area BOHUS b	592920N 0115430E - 590419N 0115144E - 585300N 0114130E - 585029N 0110921E - 585230N 0110139E - 585345N 0111525E - 585318N 0112727E Swedish/Norwegian border northward to - 592200N 0114740E - 592920N 0115430E	FL 285 FL 95 Class: C	ATS delegated to ACC Oslo. See AIP Norway
Area BOHUS c	585535N 0104945E Swedish/Norwegian border northward to - 585318N 0112722E - 585345N 0111525E - 585230N 0110139E - 585535N 0104945E	FL 285 FL 115 Class: C	ATS delegated to ACC Oslo. See AIP Norway

Corresponding publication in AIP NORWAY ENR 2.2:

Bohus A Innenfor/Within SWEDEN FIR		NORGE / NORWAY	REF AIP SWEDEN
Bohus B Innenfor/Within SWEDEN FIR		NORGE / NORWAY	REF AIP SWEDEN
Bohus C Innenfor/Within SWEDEN FIR	,	NORGE / NORWAY	REF AIP SWEDEN

Example 2: Bulgaria has delegated the responsibility for provision of ATC in areas "DF 1" and "DF 2" to the adjacent State Romania, while Romania has delegated the responsibility for provision of ATC to Bulgaria. Both areas where the ATS is delegated are published in both AIP Bulgaria and AIP Romania in ENR 2.2.

Bulgaria AIP ENR 2.2:

Име Хоризонтални граници Вертикални граници Клас на въздушното пространство Name Lateral limits Vertical limits Class of airspace	Орган, осигуряващ обслужването Unit providing service
Sector DF1	SOFIA ACC
435213N 0255833E - 435647N 0254432E - 435846N 0252818E - 435824N 0250009E - 434153N 0244148E - National border with Romania - 435213N 0255833E FL660 FL245 Class C	*Процедурите и комуникацията ще бъдат същите, каквито биха били ако въздушното пространство е неразделна част от FIR София. Procedures and communications will be as if the airspace was an integral part of SOFIA FIR.
Sector DF2	BUCUREȘTI ACC
434408N 0283004E - 433855N 0282535E - 440826N 0270101E - National border with Romania - 434408N 0283004E	
<u>FL660</u> FL245	*Процедурите и комуникацията ще бъдат същите, каквито биха били ако въздушното пространство е неразделна част от FIR Букурещ (виж сборник AIP Romania).
Class C	Procedures and communications will be as if the airspace was an integral part of BUCUREŞTI FIR (see AIP Romania).

Romania ENR 2.2.2:

2.2.2 Cross Border Sectors within DANUBE FAB

Name	Lateral limits	Vertical Limits Class of airspace	Unit providing service	Remarks
Sector DF 1	435213N0255833E - 435647N0254432E - 435846N0252818E - 435824N0250009E - 434153N0244148E - then along Bucureşti FIR/Sofia FIR boundary up to the point of co- ordinates 435213N0255833E	FL 660 FL245 Class of airspace: C	SOFIA ACC See AIP Republic of Bulgaria	Procedures and communications will be as if the airspace were an integral part of the SOFIA FIR (See AIP Republic of Bulgaria).
Sector DF 2	434408N0283004E - 433855N0282535E - 440826N0270101E - then along Bucureşti FIR/Sofia FIR boundary up to the point of co- ordinates 434408N0283004E	FL 660 FL245 Class of airspace: C	BUCUREȘTI ACC	Procedures and communications will be as if the airspace were an integral part of the BUCUREȘTI FIR.

2.2 Route information

2.2.1 ATS routes

2.2.1.1 Publication of vertical limits

ICAO PANS-AIM (Doc 10066) [RD 2] states that a detailed description of an ATS route shall be published (in ENR 3 sections) and to include the publication of the upper and lower limits. Guidance for publishing the vertical limits of ATS routes is provided in ERNIP Part 1 [RD 9] section **9.7.1**.

2.2.2 Early Access to Weekend (EAW) routes

- **2.2.2.1** Publication guidelines for information related to Early Access to Weekend (EAW) routes are included in ERNIP Part 1 [RD 9] section **9.9.5** providing the following:
 - Illustrative example of an AIP cover page for Early Access to Weekend Routes process, applicable for AIP ENR 3.x sections.
 - Example of AIP publication of routes affected by early access arrangements, applicable for AIP ENR 3.x sections.
 - Illustrative example of a common AIP Supplement annual notification of national differences, including:
 - Example of an AIP Supplement, listing routes affected by annual notification of national differences.

2.2.3 Conditional routes (CDR)

2.2.3.1 Publication of availability and conditions

Publication guidelines for information related to when a Conditional Route (CDR) is available for flight planning and conditions, are provided in ERNIP Part 1 [RD 9], sections **9.8.1 and 9.9.4**.

2.3 Aerodrome information

2.3.1 RNAV SIDs/STARs & instrument approach procedures significant points

2.3.1.1 Publication guidelines for information related to significant points used in RNAV SIDs/STARs and instrument approach procedures are provided in ERNIP Part 1 [RD 9], section **9.11**

2.3.2 Publications in support of non-standard landing sites and General Aviation airspace users.

With the increased use of PBN procedures, various new landing sites may become subject to instrument flight rules and require additional supporting publications such as: instrument approach charts.

- **2.3.2.1** Therefore, relevant products should be published for all sites inter alia hospital helicopter landing sites, uncontrolled aerodromes, aerodromes with non-instrument runways in the suitable AIP placeholders.
- 2.3.2.2 For the support of Class G airspace users, it is recommended that all relevant information regarding IFR traffic should be translated to VFR products (e.g. VFR AIP, "VFR Guides", "VFR Manuals", VFR charts) using available means. This may include charting symbols, notes (e.g. "H" symbol for helipad supported with a note on the applicability of an IFR procedure(s)).

Instrument Approach Procedure (IAP)
Aerodrome having one or more IAPs outside
Controlled Airspace. The symbols are aligned to
the MAIN Instrument Runway (civil)

Chart symbol representing IAP outside controlled airspace [source: Chart Symbols for NATS HELICOPTER ROUTES IN THE LONDON CONTROL ZONE 1:50000]



IFR approach sector representation on the VFR chart [source: AustroControl Chart for VFR flights ST. JOHANN/TIROL]

2.4 Obstacles

The EUROCONTROL Terrain and Obstacle Data (TOD) Manual [RD 8] provides guidelines for parties involved in the origination, processing and provision of electronic terrain and obstacle data, from the point at which the need for origination is identified, through to the point when the State makes it available in accordance with the requirements of ICAO Annex 15 [RD 1] and PANS-AIM (Doc 10066) [RD 2]. The document also includes some guidelines on AIP publication and data provision, which is referenced hereunder.

This section is expected to include more detail on the harmonised approach to certain matters relating to the publication and/or provision of terrain and obstacle data in the national AIP and/or relevant aeronautical products (e.g. data set, electronic files). Such guidelines would not replace, but rather enhance the ICAO requirements in order to satisfy the operational needs of the next intended users.

2.4.1 Announcement of TOD availability in AIP GEN 3.1.6

2.4.1.1 Guidelines for an harmonised approach to announcing the availability of electronic Terrain and Obstacle Data (eTOD) in AIP GEN 3.1.6 is provided in the EUROCONTROL TOD Manual [RD 8], section **3.7.8**.

2.4.2 Publication of aerodrome obstacles in AIP - AD2.10 (3.10)

Provisions for AD 2.10 Aerodrome Obstacles require the publication of detailed descriptions of obstacles in Area 2 and Area 3, including the obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds.

The provision of the references to the Aerodrome Obstacle Chart (AOC) Type A or Type B instead of provision of obstacles for the respective aerodrome does not cover the requirement for the provision of obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds.

- **2.4.2.1** When the aerodrome obstacles are available to the AISP and are not provided as obstacle data set, the AISP should publish them in the AIP AD 2.10 (3.10) section;
- **2.4.2.2** If the Aerodrome Operator (Authority) is solely responsible for publication of the aerodrome charts, the State competent authorities should ensure that all aerodrome obstacles (including the updates) are provided to the AISP for publication in AD 2.10 (3.10) and/or provision of obstacle data set;
- **2.4.2.3** It should be ensured that the Obstacle identifier assigned in accordance with national rules to each individual obstacle should be maintained uniformly in all products (AIP, charts, and data set).

2.4.3 Publication of obstacles as points, polygons and lines

- **2.4.3.1** The current requirements of ICAO Annex 15 [RD 1], PANS-AIM (Doc 10066) [RD 2] and the guidance material in ICAO Doc 8126 [RD 3] for the publication of obstacles in AIP sections ENR 5.4 and AD 2.10 include only instructions for and examples of the publication of single point obstacles. Until all obstacles are provided in the data set, there is a need for the AIP publication of obstacles, representing a group of obstacles (e.g. windfarm) and obstacles represented by lines and polygons.
- **2.4.3.2** In accordance with ICAO requirements, an obstacle type should be defined for each obstacle. For individual obstacles (points), commonly known types such as "wind turbine", "chimney", and "mast" should be used in the AIP as obstacle types.
- **2.4.3.3** For obstacles with geometry other than points (e.g. grouping of obstacles), the common types representing lines and polygons (area) such as wind farm", "wind plant", "cableway", "power line" should be used in the AIP, accompanied with (area), (line) or (polygon) to support the described location (coordinates) of the obstacle.

2.4.4 Publication of groups of obstacles with similar height located in close proximity to one another

- **2.4.4.1** With the increase in the construction of wind power plants (wind farms), States publish obstacles of similar height that are located in close proximity to one another as groups.
- 2.4.4.2 As general publication guidelines, each obstacle collected is published individually and include the required information as stated in ICAO PANS-AIM (Doc 10066) (Appendix 2 ENR 5.4) [RD 2]:
 - (1) obstacle designator (location or name);
 - (2) obstacle identifier (a unique alphanumerical sequence) for each separately published obstacle;
 - (3) type of obstacle;
 - (4) obstacle position, represented by geographical coordinates in degrees, minutes and seconds;
 - (5) obstacle elevation and height to the nearest metre or foot;
 - (6) type and colour of obstacle lighting (if any).

Note: Provided list of items distinguishes designator from identifier, using the modified definition of "obstacle identifier" from ICAO PANS-AIM (Doc 10066) (Appendix 1 Table A1-6 Obstacle Data) [RD 2] to ensure that each obstacle will be identified separately when published as a group.

2.4.4.3 To indicate that the individual listed obstacles are part of a group, the *(3) obstacle type* may be published commonly for the obstacle group. Required information *(2, 4, 5 and 6)* is published for each individual obstacle.

Location/	Identifier	Туре	Position	ELEV (M/FT)	Height (M/FT)	Obstacle lighting
Designation/Name						Type/Colour
Windpark Donlon	416037 656028 937611 531514 413663	Wind turbine	474442N 0163133E 474432N 0163126E 474431N 0163144E 474420N 0163139E 474420N 0163201E	264 / 866 253 / 831 255 / 837 239 / 784 269 / 883	150 / 490 150 / 490 150 / 490 150 / 490 150 / 490	no no no no

AIP template for individual obstacles part of a group.

- **2.4.4.4** In cases where a large number of obstacles with similar elevation are grouped, an area (*polygon*) encompassing the grouped obstacles may be published instead of publishing each individual object.
- **2.4.4.5** Guidelines for a published area for a group of obstacles within similar elevation:
 - The obstacle designator (location or name);
 - The obstacle identifier (a unique (alpha)numerical sequence) concerning a group of obstacle allowing easy reference;
 - The *obstacle type* is followed by the word "area" within brackets (area), to indicate that it is an area;
 - The elevation of the area is encompassing the highest obstacle in the group.
 - The number of objects included in the area may be published together with the *obstacle type*;
 - The area is described with coordinates (latitude/longitude), separated by a hyphen, and where the first and the last coordinate is the same;
 - A circle with a centre coordinate and radius can also be used to define the area.

Location/Designati on/Name	Identifier	Туре	Position	ELEV (M/FT)	Height (M/FT)	Obstacle lighting Type/Colou r
Donlon II	EADD122895	Windfarm (area)	54 35 00N 011 29 08E - 54 33 44N 011 37 01E - 54 31 35N 011 37 01E - 54 34 16N 011 27 28E - 54 35 00N 011 29 08E	115/378	115/378	LIM FLG R Turbines marked with green

AIP template for an area for a group of obstacles with similar elevation.

2.4.5 Publication of obstacles as a line

- **2.4.5.1** Obstacle types such as cableways, high voltage power lines and transmission lines may be published as *lines*, comprising the masts/poles (*vertices*) and the cable/line itself in between the masts/poles.
- **2.4.5.2** Group of obstacles with similar elevations may be defined as a geometric line where there is a linear arrangement, for example a wind farm. In this case the obstacle type will determine the absence of a cable/line between the vertices.
- **2.4.5.3** Guidelines for publication of obstacles as a line:
 - The obstacle designator (location or name);
 - The obstacle identifier (a unique (alpha)numerical sequence) concerning a group of obstacles represented linearly;
 - The obstacle type is followed with the word "line" within brackets (line), to indicate that it is a line;
 - The line is published by at least 2 coordinate ordered pairs (latitude/longitude), defining as a minimum the end-positions (points) of the obstacle-line;
 - The elevation and height is published for each published mast/pole position;
 - The maximum height for each portion of the cable/line in between the consecutive poles/masts is published.

Location/ Designation/Name	ldentifier	Туре	Position	ELEV (M / FT)	MAX Height above GND (M / FT)	Obstacle lighting Type/Colour
Donlon Peak – Donlon Valley	126033-21 126034-21	Cableway (line)	464938N 0105930E 464820N E0105911E	2438 / 7999 2883 / 9459	280 / 919	no
Donlon Summit Donlon Hut	565c391d2-19 878d451w1-19 990w213q1-19	Cableway (line)	470038N 0110906E 465948N 0110835E 465913N 0110659E	1750 / 5741 2310 / 7579 3200 / 10499	95 / 312 95 / 312	no no

AIP templates for obstacles published as a line.

Location/ Designation/Name	Identifier	Туре	Position	ELEV (M/FT)	Height M/FT)	Obstacle lighting Type/Colour
Donlon Windfarm	9ccd0a37	Windfarm (line)	54 20 00N 011 29 08E - 54 20 16N 011 27 28E	75/246	75/246	FLG R Turbines marked with green

AIP templates for obstacles published as a line, with similar elevations.

2.4.6 Publication of obstacles as a polygon

- **2.4.6.1** In cases where an obstacle such as a large building or a moving obstacle is published as a polygon and not as a point, the following publication guidelines apply:
 - The polygon is described with coordinates (latitude/longitude) separated with a hyphen, where the first and the last coordinate is the same.
 - The published elevation/height of the polygon is encompassing the highest position of the obstacle.

2.5 AIP annotation of data not compliant with DQRs

Commission Implementing Regulation (EU) 2020/469 of 14 February 2020 repealing Commission Regulation (EU) No 73/2010 of 26 January 2010 maintains the requirement that data not meeting the DQRs shall be made with an annotation or by explicitly providing the quality value. The guidance on annotation alternatives and AIP placeholder is provided in GM1 AIS.TR.240 Data limitations [RD 7].

2.6 AIM recommendations for the prevention of runway incursions

The European Action Plan for the Prevention of Runway Incursions (EAPPRI) [RD 10] serves as guidance to enhance the safety of runway operations, by advocating implementation of the recommendations contained in the document. The recommendations target various actors and aspects, including Aeronautical Information Management and the publication of aeronautical information.

2.7 Military AIP consistency with ICAO Annex 15

EUROCONTROL Guidance for Military Aeronautical Information Publication Consistency with ICAO Annex 15 [RD 11] provides guidelines to enable military organisations to implement a harmonised way to elaborate and to publish Military AIP in Europe.

2.8 Publication of 8.33kHz channel spacing for VHF communication information

From 1 January 2018 an airspace user operator shall not operate an aircraft in airspace where carriage of radio is required (in the airspace in which EU Member States provide air traffic services) unless the aircraft radio requirement has 8.33kHz channel spacing capability (Commission Implementing Regulation (EU) No 1079/2012 of 16 November 2012 laying down requirements for voice channels spacing for the single European sky (VCS regulation) Art 5(4)).

The EUROCONTROL 8.33kHz Voice Channel Spacing (VCS) Implementation Handbook [RD 12] provides recommendations on a number of aspects involved in implementation, including publication of relevant aeronautical information in AIS publications.

2.9 Standardised format for time expressions in AIS publications

Guidance on standardised format for time expressions in AIS publications are to a certain extent found in the ICAO AIS Manual (Doc 8126) [RD 3], in the AIP Specimen. For instance, the publication format of *times* is expressed as four digits [hh][mm] for hours and minutes (e.g. '0450') with no symbol separating the hours and minutes³. This format is also used for time expressions in NOTAM.

The need for enhanced standardisation of Temporal Reference System information and time period expressions in AIS publications was nevertheless identified to complement existing ICAO provisions, recognising differences in formats published by States for this information. The objective with the Guidelines is to achieve harmonisation in States AIP for expressions of time periods, facilitating readers of AIP to understand sometimes complex time period descriptions through a standardised format of the information and by providing in addition an explanation of how the time periods are applied.

3

³ This corresponds to ISO 8601 *basic format* for time [hh][mm][ss], with no separator.

2.9.1 Temporal Reference System

2.9.1.1 Mandatory use of UTC

Time periods published in AIS products are in Co-ordinated Universal Time (UTC).

2.9.1.2 Daylight saving time

- The expression "summer period" indicates that part of the year in which daylight saving time is in force.
- "Winter period" indicates when daylight saving time is not applied.
- Times applicable during the "summer period" are published in brackets after the times published for the "winter period".
- If "winter period" and "summer period" are the same during the whole year, no time is published in brackets.

Period	Publication format
Distinction between winter and summer periods	2300-0500 (2200-0400)
One common period throughout the year	1200-0500

2.9.2 Publication format for time periods

This section provides examples of time periods expressions for a number of situations, including winter and summer periods.

2.9.2.1 Every day, without change during summer period

Format: 0500-2100

<u>Explanation:</u> The same time in UTC during each day of the whole year, regardless of winter or summer periods.

2.9.2.2 On the days notified, without change during summer period

Format: MON WED FRI 0500-2100

<u>Explanation</u>: The period covers every Monday, Wednesday and Friday same time in UTC during the whole year regardless of winter or summer periods.

2.9.2.3 Every day in winter, every day in summer

Format: 0500-2100 (0400-2000)

<u>Explanation</u>: Period covers every day from 05:00UTC until 21:00UTC during winter period and every day from 04:00UTC until 20:00UTC during summer period.

2.9.2.4 Every day in winter, every day in summer, different hours of operations during winter and summer

Format (1): 0500-2100 (0415-2130)

<u>Explanation:</u> Period covers every day from 05:00UTC until 21:00UTC during winter period and every day from 04:15UTC until 21:30UTC during summer period.

Format (2): 0500-2359 (H24)

<u>Explanation:</u> Period covers every day from 05:00UTC until 23:59UTC (or 24:00UTC) during winter period, and every day H24 during summer period.

2.9.2.5 Every day in winter, every day in summer, with additional reference to SS

Format: 0900-2000; or SS+15, whichever is earlier (0800-1900; or SS+15, whichever is earlier)

<u>Explanation</u>: Period covers every day from 09:00UTC until 20:00UTC or from sunset +15 minutes, whichever is earlier, during winter period; and every day from 08:00UTC until 19:00UTC or sunset +15 minutes, whichever is earlier, during summer period.

2.9.2.6 During the same day throughout the year

Format: MON 0700-2300 (MON 0600-2200)

<u>Explanation:</u> Period covers EVERY Monday from 07:00UTC until 23:00UTC during winter period and EVERY Monday from 06:00UTC until 22:00UTC during summer period.

2.9.2.7 During consecutive days

By consecutive days means each day within the published day-span illustrated by the 'hyphen'.

Format (1): MON-FRI 0700-2300 (MON-FRI 0600-2200)

<u>Explanation:</u> Period covers EVERY Monday, Tuesday, Wednesday, Thursday and Friday from 07:00UTC until 23:00UTC during winter period and EVERY Monday, Tuesday, Wednesday, Thursday and Friday from 06:00UTC until 22:00UTC during summer period.

Format (2): SAT-SUN 0700-2300 (SAT-SUN 0600-2200)

<u>Explanation:</u> Period covers EVERY Saturday and Sunday from 07:00UTC until 23:00UTC during winter period and EVERY Saturday and Sunday from 06:00UTC until 22:00UTC during summer period.

2.9.2.8 During the whole time period

Format (1): MON 0700 (0600)-FRI 2300 (2200)

<u>Explanation:</u> Period covers whole period from Monday 07:00UTC until Friday 23:00UTC during winter period and from Monday 06:00UTC until Friday 22:00UTC during summer period.

Format (2): FRI 1600 (1500)-MON 0745 (0645)

<u>Explanation</u>: Period covers whole period from Friday 16:00UTC until Monday 07:45 during winter period and from Friday 15:00UTC until Monday 06:45UTC during summer period.

2.9.2.9 Every day same time in winter, specific days and times in summer, excluding public holidays

This paragraph provides examples for the situation when the time expression is crossing midnight. Two formats are provided for this situation: Format 1 is a simplified format, which requires the complementing explanation in the AIP. Format 2 splits the times to not cross over midnight, providing a self-explanatory format of applied time period:

Format (1):

0500-2330 (MON-FRI 0430-0100, SAT 0500-0100 excluding HOL).

<u>Explanation:</u> Period covers EVERY day from 05:00UTC until 23:30UTC during winter period and EVERY Monday, Tuesday, Wednesday, Thursday and Friday from 04:30UTC until 01:00UTC on the following day during summer period, and EVERY Saturday from 05:00UTC until 01:00UTC on the following day during summer period; excluding public holidays.

Format (2):

0500-2330 (MON-FRI 0430-2359, TUE-SAT 0000-0100, SAT 0500-2359, SUN 0000-0100 excluding HOL).

2.9.2.10 During the same day winter, every day in summer

Format: MON 0700-2200 (MON-SUN or Daily 0600-2200)

<u>Explanation:</u> Period covers every Monday 07:00UTC until 22:00UTC during winter period and every day from 06:00UTC until 22:00UTC during summer period.

2.9.3 Detailed publication guidelines for time expressions

2.9.3.1 Days of the week and months

- When publishing periods of activity, availability or operation, the day or days is specified and the term 'weekday' is not used.
- If the term 'weekend' is used, it is qualified by the specified dates/days (e.g. SAT, SUN) and times.
- The following abbreviations for days of the week and months are used in conjunction with time expressions.

Abbreviation - Decode				
Day				Month
MON	Monday		JAN	January
TUE	Tuesday		FEB	February
WED	Wednesday		MAR	March
THU	Thursday		APR	April
FRI	Friday		MAY	May

SAT	Saturday	JUN	June
SUN	Sunday	JUL	July
		AUG	August
		SEP	September
		OCT	October
		NOV	November
		DEC	December

2.9.3.2 Dates, months and year

2.9.3.2.1 To specify an effective date/end date or active period, e.g. in an AIP Supplement, these formats apply: DD MMM YYYY or DD MMM.

Examples:

10 OCT 2017, or 10 OCT

15 OCT 2017-15 MAR 2018

15 OCT- 25 DEC 2017, or 15 OCT-25 DEC

2.9.3.2.2 When times are also specified during a date/end date period, the following formats apply:

Examples:

15 OCT-25 DEC 2017 0800-1600

15 OCT 2017-15 MAR 2018 H24

25 MAR- 25 APR 2018 MON-FRI 1000-1200

21 SEP 2017-20 JUN 2018 MON-FRI 0700-1700

7 JAN-21 JUN and 20 SEP-21 DECSAT 0000-1200 (0000-1100), excl. HOL

SUN 2200-2300 (2100-2200)

2.9.3.3 Inclusion of days

When the time period applies every day of the week, the days Monday to Sunday (MON-SUN) are not inserted.

Format (1): **0800-1600 (0600-1200)**

<u>Explanation:</u> Period covers every day of the week from 08:00UTC until 16:00UTC during winter period, and every day of the week from 06:00 until 12:00UTC during summer period.

However, the applied days are published when there is a risk of misinterpretation on application. This could be the case when the event is applied on different days during winter and summer period, or to avoid the impression that the event applies the full week during the summer period.

Format (2): MON 0800-1600 (MON-SUN or Daily 0600-1200)

instead of: MON 0800-1600 (0600-1200)

<u>Explanation</u>: Period covers Mondays from 08:00UTC until 16:00UTC during winter period, and every day of the week from 06:00 until 12:00UTC during summer period.

Format (3): MON 0700-2300 (MON 0600-2200)

instead of: MON 0700-2300 (0600-2200)

<u>Explanation:</u> Period covers every Monday from 07:00UTC until 23:00UTC during winter period, and every Monday from 06:00 until 22:00UTC during summer period.

2.9.3.4 Time-related terms other than days of the week, months and year

Compared to a NOTAM, phrasing in an AIP does not necessarily have to be kept short, with the result that many variations of used terms apply in States' AIP for the same information. The table below provides guidance on usage of terms commonly used in time expressions.

Terms	Usage
SR	Sunrise
SS	Sunset
BCMT ⁴	Begin of civil morning twilight
ECET ⁵	End of civil evening twilight
H24	Continuous day and night service (24 hours out of 24).
HOL	Holiday
'daily'	A time period expressed without specified applicable day/dates means that the event applies every day within that time period (e.g. 0500-0800). However, the term 'daily' is an extra information to an event that occurs every day within a given time period, to emphasize the every-day application. 'Daily' should not be used when applicable days of the week are specified. It can be applied to a time period that occurs every day of the week (e.g. Daily SR+30 – SS'). Please note that 'SR+30 – SS" and 'MON-SUN SR+30 – SS" also express daily application.'
'excluding'	The term 'excluding' is used when specific dates, days or e.g. holidays are excluded from the applicable time period. Example: 0500-2330 (MON-FRI 0430-0100 SAT 0500-0100), excluding (or excl.) HOL.

2.9.3.5 Format involving start and end times with earliest/latest definitions and alternatives

2.9.3.5.1 "Either/or" cases

When providing alternative start or end times, the alternative is added after the main time period. Specify which one of the times that takes precedence:

- "or" is used to specify alternatives and is preceded by semi-colon.
- "whichever is earlier/later" is used to indicate which one takes precedence.
 - "whichever is earlier/later" is added after the second option, separated by a comma.

⁴ Non-ICAO abbreviation

⁵ Non-ICAO abbreviation

• The information "whichever is earlier/later" is inserted in conjunction with each winter resp. summer period, even if it applies equally to both.

Examples:

0600-2000; or SR-30, whichever is later (0500-1900; or SR-30, whichever is later).

0900-2000; or SS+15, whichever is earlier (0800-1900; or SS+15, whichever is earlier).

0700-1100 1230-1700; or SS+30, whichever is earlier

0700-1100 1230-1700; or SS+30, whichever is earlier (0600-1000 1130-1600)

When 'either/or' apply both to the begin-time as well as to the end-time indication:

- Indicate first the begin time "or" case (latest/earliest time), and then,
- separated by a semi-colon, the end time "or" case (or latest/earliest time indication)

Example:

0600-2000 (0500-1900); or SR-15, whichever is later; or SS+15, whichever is earlier.

2.9.3.5.2 "Earliest/latest" cases

If SR, SS, SR +/- MM, SS +/- MM are limited by a specified earliest or latest time indication, this is indicated by adding a comma and the latest (or earliest) HHMM inserted after the time period.

Examples:

0600-SS+30 (0500-SS+30), earliest 1700(1600).

SR-SS (0500-1900); earliest 0700 (0600); earliest 2000.

2.9.3.5.3 Use of punctuation

Punctuation	Usage
','(comma)	A comma is used for separation of grouping of information when there are complex descriptions:
	 Groups of dates or days to which the same time periods apply.
	 Groups of periods that all apply to the preceding and qualifying dates or days
	Examples:
	Days of the week shall be separated by a 'blank' and not by a "comma" (see 'hyphen' for consecutive days).
	Example :
	MON WED FRI 0500-2100
- (hyphen)	Means 'from' specified time expression 'until' the specified time expression. When hyphen is used for time periods, there is no need to
	also publish the wording "from" and "to", or "from" and "until", "between", "with start from/ending at" or similar.
	Examples: 1. "SR+30-SS"; event applies from sunrise plus 30 minutes until sunset.
	"MON-FRI"; event applies (from) on Monday, Tuesday, Wednesday, Thursday until and including
	Friday. 3. 0700-2100; event applies from 7 am until 21 pm, and not applicable before or after these times.
	Hyphen is used in between days marking consecutive days.
	Examples:
	MON-FRI 0700-2300
	SAT-SUN 0900-2300

3 Data set provision guidelines

- 3.1 Guidelines for data set provision with regard to AIP content
- 3.1.1 General considerations for the data format applicable to digital data sets (AIP data set, Obstacle data set and Instrument Flight Procedure Data Sets)
- **3.1.1.1** For the interoperability of the data and to ensure the high effectiveness of the AIS upstream and downstream data chain AIP data sets and Obstacle data sets, as defined by ICAO Annex 15 [RD 1], should be provided at least in AIXM 5.1 format.
- **3.1.1.2** AIXM 5.2 should be considered for the provision of Instrument Flight Procedure Data Sets as it includes critical elements in support of PBN procedures.
- 3.1.2 Advance notification of a State's intention to stop providing information in the AIP and only to provide them in the form of digital data sets.
- **3.1.2.1** Advance announcements to the user community of a State's intention to stop providing information in the AIP and to only provide the data in electronic format should be published by AIC. The AIC should be published early enough to enable industry implementation.

Note: Information on how to obtain data sets should be provided in GEN 3.1.6 of the AIP.

- 3.1.3 Declaration of the primary source of information is provided both in AIP standardised format and electronic format.
- **3.1.3.1** If a State provides information both in AIP standardised format as well as files in electronic format (e.g. digital data sets), neither source should take precedence over the other in terms of correctness. It is the State's responsibility to ensure the consistency of information published in multiple formats.
 - However, should a State need to declare that the sources available are of equal status or that one means of publication is the primary source, the recommended placeholder is AIP GEN 3.1.6.

3.1.4 Data set provision checklist

- **3.1.4.1** ICAO PANS-AIM (Doc 10066) [RD 2] allow for the omission (removal) of certain AIP sections, when applicable data sets are provided (as indicated in 5.2.1.1.3/4 explicitly). The replacement of information published in the AIP (e.g. AIP tables) with information provided in digital data sets should be performed in orderly manner, ensuring data quality at all times during transition to digital data set provision.
- 3.1.4.2 Supporting guidelines for the transition from AIP tables to digital data sets are provided in the ANNEX A Data set provision checklist. The scope of this checklist covers the full process of providing a new digital AIS data set. The checkpoints included refer to the elements that are required based on the ICAO provisions, but also to the ones that are recommended to support the AISP's Safety Support Assessment process and ultimately to give confidence to the next intended users that the digital data sets are a reliable replacement of the AIP tables and can be smoothly processed.
- **3.1.4.3** The durations recommended in ANNEX A Data set provision checklist checkpoints 1.4, 2.3, 2.4, 2.5 and 2.7 are intended to offer sufficient time for reaction of the next intended users. The durations may be subject to AISP's Safety Support Assessment process and therefore be adjusted.
- **3.1.4.4** The checkpoints provided in ANNEX A Data set provision checklist should be passed and considered in the Safety Support Assessment, before the provision of a new category of digital AIS data sets (e.g. AIP or Obstacle data set) starts and before removing the corresponding tables from the AIP.
- **3.1.4.5** The checkpoints should guide the data set provision rather than hinder it and should not be seen as "roadblocks" i.e. if an AISP is already providing data sets and considers omitting AIP tables, further developments should start from Step 2. A retroactive check whether Step 1 points are fulfilled (e.g. compliance with specifications, subscription availability, lack of "blocking" disclaimers etc.) is recommended.
- **3.1.4.6** The AISPs may refer to their Safety Support Assessment to consider adjusting the transition periods recommended in the ANNEX A Data set provision checklist checkpoints 1.4, 1.9, 2.3, 2.4, 2.5, 2.7.
- **3.1.4.7** ICAO EUR Doc 7754 EUR Navigation Plan eANP Volume III [RD 5] lists the National Plans for the provision of digital data sets (and removal of AIP tables) and is subject to regular update by the States.

3.2 Obstacle data set provision

3.2.1 Change management of the obstacle data set.

- 3.2.1.1 The EUROCONTROL TOD Manual [RD 8] specifies use of the Aeronautical Information Exchange Model (AIXM) version 5.1 for modelling and encoding obstacle data. AIXM 5.1 supports the attributes required by ICAO PANS-AIM (Doc 10066) [RD 2] to be contained in the obstacle data set. It also provides support identifying the modifications made to the attributes of the obstacle data set (new, edited or deleted).
 - Publication in AIP of which data model is used for obstacle data set is currently not foreseen in ICAO provisions and neither how to notify changes to the data structure of the data format in the obstacle data set. However, such information could be provided in AIP GEN 3.1.6.

3.2.2 Adherence to ICAO provisions on mandatory obstacle data set attributes.

3.2.2.1 Adherence to mandatory obstacle attributes in accordance with ICAO PANS-AIM (Doc 10066) [RD 2] Appendix 6, Table A6-2 *Obstacle attributes* applies to the provision of an obstacle data set. Differences to the list of mandatory obstacles data attribute shall be published in AIP GEN 1.7.

3.2.3 Considerations on the multiple data file provision for en-route and aerodrome obstacles

3.2.3.1 It is recommended that en-route obstacles and aerodrome obstacles be provided in separate data files, instead of a single separate data file. Such approach allows for an easier manipulation of specific data files by majority of the end-users. The EUROCONTROL AIP and Obstacle Data Sets Interoperability Rules [RD 13] should be consulted for additional aspects.

Note: Having in mind the inception phase of providing obstacle data sets by States, the best practices on making the data available (single vs multiple files etc.) still need to be validated by end-users.

Note: The current ICAO list of obstacle attributes does not include a specification of an en-route or an aerodrome obstacle. Therefore, a single obstacle data file will not distinguish between the two obstacle types.

3.2.4 Common format for announcing changes to obstacle electronic files in spreadsheets.

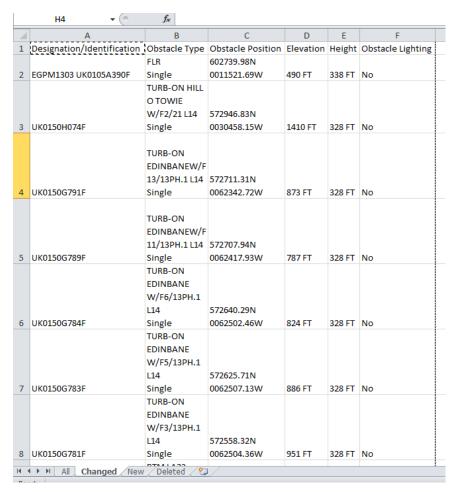
- **3.2.4.1** Although the data model AIXM 5.1 provides full coverage of the attributes of the obstacle data set (new, edited, deleted), in the transition period from the publication of obstacles in AIP tables until the full provision of data sets, there may be a need for provision of obstacle data in *a spreadsheet format*, rather than in the form of xml-provided files. The EUROCONTROL TOD Manual Ed.3.0 Accompanying Documents [RD 8] provide a converter to facilitate easier translation.
- 3.2.4.2 In a typical obstacle management process, an AIS provider receives obstacle data from the originating source in one or more files in non-AIXM format. From there, the data is processed by AIS in various steps before finally being stored in AIXM databases. In the database, each obstacle record has two attributes, namely the start date and end date, describing the period of validity of the record, and only one record can be valid at one time. This allows the identification of new, changed and deleted obstacles from the previously provided electronic obstacle.

A harmonised common format for informing users about changes to the obstacle data set from the previous version, to a spreadsheet-type electronic obstacle file is provided below.

This consists of additional spreadsheets identified by the following tabs:

- "Changed" UIDs which have a match are compared and if a change is detected are added to the 'Changed' sheet.
- "New" UIDs in new spreadsheet but not in the old one are added to the 'New' sheet.
- "Deleted" UIDs in the old spreadsheet but not in new are added to the 'Deleted' sheet.
- "All" The full list is added to the 'All' sheet.

Note: Inter alia the UIDs referenced above may constitute of standardised universally unique identifiers (UUID), obstacle identifiers as described in section 2.4.4 (and subsections) or as shown in Column A below.



Format for announcing changes to obstacle electronic files in spreadsheets.

4 AIP charts guidance

4.1 PBN instrument procedures

4.1.1 RNP approach information publication and charting

- **4.1.1.1** Alignment of the intermediate approach segment
- 4.1.1.1.1 The PBN Implementation Support Group (PBN ISG) raised a request for harmonised guidelines on how to publish the alignment of the intermediate segment with the final approach segment of an RNP instrument approach, which may result in different values when published with the resolution of 1 degree.
- 4.1.1.1.2 The harmonising principle in this situation agreed by the PBN ISG is to publish segments with the bearing obtained from geodesic calculation, although there is a difference (misalignment) in rounded values.

Alignment of the intermediate segment





- Sometimes this results in different values when published with the resolution of 1 degree
- Equal values would mean misalignment and a (small) turn
- ARINC 424 requires that the values shall be the same
- How should we understand the "alignment"?
- PANS-OPS:
 - The intermediate approach segment...:
 - · For APV, III-3.5.3.2: ...shall be aligned with the final approac
 - · For ILS, II-1-1.3.1: ...shall be aligned with the localizer course

Principle of alignment of intermediate and final approach segments.

ANNEX A – Data set provision checklist

Step 1 – checkpoints to be considered before releasing a **new digital AIS data set** as AIS Product:

Note: Checkpoints may also be considered during the AISP's Safety Support Assessment.

ID	Check	Status
1.1	Does a common specification (e.g. EUROCONTROL Specification) exist for the data set and is the data set in compliance with this specification?	
	Rationale: The data sets should be based on a commonly used standardised data exchange formats. This ensures interoperability and reduces the implementation costs.	
1.2	Is the data set accompanied by a Data Product Specification (DPS)?	
	Rationale: The data sets shall be provided based on a DPS, allowing users to explore the content of a data set series and to identify the data of interest.	
	Note: A proposal for a common DPS structure and content is being developed under the ICAO IMP/WG-A group and will be included in the ICAO AIS Manual, part 4 – Digital Data Sets.	
1.3	Was the information about the future availability of new data set(s) timely published by means of an Aeronautical Information Circular (AIC)?	
	Rationale: An AIC shall be promulgated to forecast important changes in air navigation services (such as a new digital data set series). The AIC should notify the intended date for the release of the new data set and the steps that the AIS is taking prior to that publication, such as the provision of a DPS and sample data (see the relevant checkpoints).	
1.4	Were complete samples of the new data set made available to AIS users for testing purposes over an adequate period (e.g. 4-6 update cycles ⁶), prior to the official release to ensure a smooth transition?	
	Rationale: The provision of data set samples enables users to test their tools/software with real data. This reduces the risk of unexpected data constructs or missing data when data sets are used operationally.	
1.5	Were all data set samples fully compliant with the relevant DPS(s)?	

⁶ When the term "update cycle" is used in this paper, it should be understood as a true update of the data set concerned, in which some data is changed. A re-issue of a data set without any modifications does not count as an update cycle instance.

	Rationale: A data set shall be compliant with the description provided in the relevant DPS.	
	This verification cannot be made automatically and requires human analysis. This dedicated checkpoint ensures that such verification is actually done.	
1.6	Were blocking issues reported by AIS users on the samples, if any, resolved satisfactorily?	
	Rationale: Data sets should not be officially provided if the quality aspects of the data sets are not assured and critical issues resolved. If the issues pertain to the AIS user's inability to ingest the data (e.g. internal process issues, drawbacks of an internal system) these should not be considered "blocking issues".	
1.7	Will the data set be provided without any disclaimer that could prevent its use as data source?	
	Rationale: The experience of DAT Providers (DATPs) indicates that some obstacle data sets were issued with disclaimers that prevented their use by AIS users. This checkpoint ensures that AISP are aware of the blocking aspect of such disclaimers.	
1.8	Will access to the data set be ensured for all the AIS users that wish to subscribe to the new AIS product?	
	Rationale: Digital AIS data sets are formally part of the "Aeronautical information products" family, as indicated in [RD 1]. Therefore, they should be accessible for subscription for any user, similarly to the availability of the AIP, AIP AMDT service, etc.	
1.9	Was the AIP GEN 3.1.6 section timely updated with the required information at least two AIRAC cycles in advance of the effective date of the first digital AIS data set?	
	Rationale: GEN 3.1.6 contains information about Digital Data Sets provided by a State. The provision of a new AIS product is a major change, thus it needs to be notified at least two AIRAC cycles in advance.	

Step 2 – checkpoints before *removing the AIP tables*:

Note: Checkpoints may also be considered during the AISP's Safety Support Assessment.

ID	Check	Status
2.1	Does the list of tables considered for removal fully match the relevant list of eligible tables of PANS-AIM?	
	Rationale: The tables that can be removed from the AIP when the equivalent data is provided in the relevant digital data set are explicitly listed in PANS-AIM (para 5.2.1.1.3). Removing any other tables causes disruptions for users - their processes might not be prepared to deal with missing tables or/and they might have difficulties finding/retrieving/inserting the missing data.	

		_
2.2	Will the AIP tables be removed altogether and is the information provided in these tables fully reflected in the equivalent digital data set?	
	Rationale: The AIP tables should only be removed when their content is fully reflected in the corresponding digital data set. By principle, the AIP tables should be removed altogether, rather than as subsets to avoid disruptions/inconsistencies for users.	
2.3	Was the equivalent data set provided as an official AIS product for at least 13 update cycles (but no longer than 18 months)?	
	Rationale: The transition from the AIP tables towards data sets requires a different data ingestion process to be implemented by AIS users and may come with additional regulatory challenges.	
	Although, a long transition period (e.g. 5 years) could facilitate adaptation on DATPs' part, the removal of AIP tables had been foreseen by ICAO as an incentive for the AISPs.	
	Therefore, a shorter transition period should be considered (e.g. 12 to 18 months – 13 update cycles) to verify that AIS users' data set processing is reliable. This allows the data set ingestion process to be tested for the typical situations that may occur during that period, including winter/summer seasons.	
2.4	If applicable, was the equivalent data set repeatedly provided for an adequate period (e.g. for the last six update cycles), without infringement of the AIRAC provisions?	
	Rationale: Most digital data sets include data subject to AIRAC cycle provisions. Compliance with the AIRAC cycle is as important for data sets as it is for paper products. Initially, corrections to already issued data sets may be expected due to process adjustments. This checkpoint ensures that AISP can still benefit from the AIP tables (paper version) until such issues are resolved.	
2.5	Were external AIS users, including at least one DATP, able to use/ingest the equivalent data set repeatedly, without any blocking issues, for an adequate period (e.g. for the last six update cycles)?	
	Rationale: The communication between AISPs and AIS users should be maintained to collect feedback with regard to digital data sets and verify whether the product meets their expectations. If a data set is issued but is not actually used, its potential errors may remain undetected.	
2.6	Were no discrepancies reported by AIS users between the digital data set and the corresponding AIP tables during this period?	
	Rationale: Discrepancies between the data contained in digital data sets and the AIP are considered a critical issue undermining users' confidence in the correctness and completeness of the digital product. Because of the large amount of data contained in digital data sets, its complexity, and the fact that an update might concern only a small part of the data, it might be difficult to	

	identify such discrepancies. Verification should be done on a series of data sets' updates.	
2.7	Was the removal of the AIP tables timely announced (e.g. 3-6 months in advance) by means of an Aeronautical Information Circular (AIC)?	
	Rationale: The transition from the AIP tables towards data sets requires users to implement a different data ingestion process. For DATPs, this comes with changes to processes, which are strictly regulated and may trigger the need for staff training or reallocation. Therefore, the transition needs to be planned carefully. An advanced warning is critical for the DATPs' planning.	
	Changes in the structure and content of the AIP fall under the scope of information that should be announced in advance by means of an AIC. This ensures that the information reaches all AIS users. The AIC should contain information about the intended date for the removal of the AIP tables and repeat information provided earlier about the provision of equivalent information in digital data sets.	
2.8	Was the AIP GEN 3.1.6 section checked and timely updated, if necessary, with the target/ultimate information on the digital AIS data set?	
	Rationale: Following the issuance of relevant AIC, GEN 3.1.6 should be updated with the final information on the digital AIS data set, as the information confirmed at checkpoint 1.9 may not be up to date.	

ANNEX B – Document update procedures

It is necessary to periodically check these EUROCONTROL Guidelines for consistency with referenced material. In addition, the content of these guidelines can evolve following feedback from implementation projects and field experience.

The main objectives of a regular review are:

- a) to improve the quality of the guidance (e.g. clarity, testability, etc.);
- b) to verify that the level of detail published is adequate;
- c) to make all stakeholders including industry aware of the latest developments.

The update of these guidelines is expected to be initiated by stakeholders directly or through specific EUROCONTROL working arrangements. Any stakeholder that wishes to request a change to these guidelines can submit a change request (CR) to the document editors (page ii) or the generic email address: standardisation@eurocontrol.int.

The CR needs to provide following minimum elements:

- · Originator information (name, Organisation, contact details);
- Guideline title, number and edition date;
- Page, chapter, section (subsection) where the issue appears;
- Description of the issue and reason for change;
- Specific change proposal text (incl. potential alternatives, if any).

Main steps towards a revised version:

- EUROCONTROL will assess each CR and consult relevant working arrangements;
- The CR will be classified in terms of urgency and impact;
- A resolution proposal(s) will be prepared and, if needed, discussed with the originator;
- Agreed changes will be integrated into a revised version "Proposed Issue" including a summarised list of changes in the document record;
- The "Proposed Issue" will be consulted with relevant working arrangements.

Note: Identified errors which may cause potential problems when implementing, may be corrected directly via separate "Corrigendum".

ANNEX C – Amendment to the Guidelines

Changes in comparison with Edition 2.0		
Chapter	Change/Reason	
1.3	Updated structure	
1.4	ERAF reference and specifics included	
1.6	Abbreviation section relocated	
1.7	Reference documents section relocated	
1.8-Annex B	Section on maintenance and update procedures added	
2.1.1.1	Reference to ERNIP documents updated	
2.1.2.1	Reference to ERNIP documents updated	
2.1.3.1	Reference to ERNIP documents updated	
2.1.4.1	Reference to ERNIP documents updated	
2.1.5.1	Reference to ERNIP documents updated	
2.1.5.2	Content of the guidelines in ERNIP Part 1 updated	
2.1.6.2	AIP template for FAB updated	
2.1.7	Section on ATZ/FIZ guidelines added	
2.1.8	Reference to ERNIP documents updated	
2.1.9	Section on RMZ/TMZ guidelines added	
2.1.10	Chapter title renamed, reference to ERNIP documents updated, AIP	
	examples updated.	
2.2.1.1	Reference to ERNIP documents updated	
2.2.2.1	Reference to ERNIP documents updated	
2.2.3.1	Reference to ERNIP documents updated	
2.3.1.1	Reference to ERNIP documents added	
2.3.2	Section on Publications in support of non-standard landing sites and General Aviation airspace users added	
2.4	Reference to envisaged 'publication and provisions matters' in TOD withdrawn.	
2.4.1.1	Reference to TOD manual updated	
2.4.2	Recommendations for Publication of aerodrome obstacle added	
2.4.4.2-3; 5;	Guidelines on including an obstacle identifier added, examples updated.	
2.4.5.3		
2.5.	Reference to AMC/GM to CIR 2020/469 added.	
2.9.3.5.3	Editorial	
3.1, Annex A	Guidelines on State notification and provision of digital data sets update to	
	include AIP DS and Obstacle DS, Data set checklist added.	
3.2.3	Guidelines on multiple data file provision updated	
3.2.4.1	Reference to a TOD Manual AIXM file-spreadsheet converter added.	
4.1.1.1.1	Reference to PBN ISG updated.	
1.7 / All	Reference document list and numbering updated, withdrawal of non-	
document	existent references	



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