POLISH AIR NAVIGATION SERVICES AGENCY

FREE ROUTE AIRSPACE IN WARSZAWA FIR (POLFRA)

OPERATIONAL CONCEPT

POLFRA Project

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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	NOTES
1.1	01.07.2017	Inclusion of formal requirements for FRA implementation, changes in FRA rules and restrictions, revisions for consistency an readability of document.	Polish version
1.2	01.08.2017	Minor editorial changes.	Polish version
1.3	16.08.2017	Included possibility of changes in POLFRA lower limit, editorial changes and revisions for consistency and readability of the document.	Polish version
1.4	27.03.2018	Changes in lower POLFRA limit, translation, editorial changes and revisions for consistency and readability of the document.	English version
1.5	26.11.2018	Inclusion of requirements and minor changes after the NM/PANSA validations.	English version

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CONTENTS

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1 INTRODUCTION

The coordinated development and implementation of Free Route Airspace (FRA) was initiated by EUROCONTROL in 2008 and was first included in the *Flight Efficiency Plan* cooperatively developed with IATA, CANSO and EUROCONTROL.

In order to meet the requirements of regulation (EU) No 716/2014 (PCP Regulation) and the target key performance indicators, defined by regulation (EU) No 390/2013 and local performance plans (including: "PANSA strategy for years 2013-2020"), PANSA has to introduce Free Route Airspace concept in the airspace of Poland, including the airspace over the High Seas, for which Poland is responsible, before January 2022.

This Operational Concept is also based on European Route Network Improvement Plan (ERNIP) Part 1, Chapter 6, En-Route Design Methodology, paragraph 6.5. Free Route Airspace Design.

Within the scope of the pan-European network FRA initiatives, PANSA has committed to make available permanent free route operations from 28 FEB 2019. The FRA within the airspace of Warszawa FIR, Poland will be named: the POLFRA project.

Some of the main aspects of POLFRA are expected to be better solutions for airspace design, new airspace operating concepts and enhanced operational performance. Airspace design solutions and airspace operating concepts need to be viewed from the pan-European network perspective and not just from the regional one.

Free Route operations in Warszawa FIR will be introduced in two separate phases:

- Phase 1 - implementation at national level;
- Phase 2 - regional cross-border implementation.

This document deals exclusively with Polish aspects of Phase 1 - national implementation of free route operations in Warszawa FIR.

2 DEFINITIONS

Free Route Airspace (FRA) is:

A specified airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate (published or unpublished) way points, without reference to the ATS route network, subject to airspace availability. Within this airspace, flights remain subject to air traffic control.

FRA Entry Point (E) is:

A published Significant Point on the horizontal boundary of the Free Route Airspace from which FRA operations are allowed.

FRA Exit Point (X) is:

A published Significant Point on the horizontal boundary of the Free Route Airspace to which FRA operations are allowed.

FRA Intermediate Point (I) is:

A published Significant Point or unpublished point defined by bearing and distance via which FRA operations are allowed.

DCT or Direct is:

Decoded abbreviation/indicator DCT (Direct) or Encoded abbreviation/indicator Direct (DCT) used for flight planning purposes when submitting FPL and when executing specified type of approach.

Special area is:

"Airspace reservation" refers to airspace of defined dimensions for the exclusive use of specific users. This is special designed area within which both civil and military activities could take place, including CBA, TRA, TSA, D, R, P and any specially activated area.

3 APPLICATION OF POLFRA

The following are dimensions and specifications of POLFRA area.

3.1 Lateral limits

The application of Free Route Airspace concept encompasses the horizontal boundaries of POLFRA area will be published in AIP Poland. Free Route Airspace concept is not applied in the airspace of TMAs, CTRs and class G airspace.

3.2 Vertical limits

Free Route Airspace in Warszawa FIR is the airspace of POLFRA area (as published in AIP Poland) from FL95 to FL660.

3.3 Time

Free Route Airspace in Warszawa FIR is applicable H24.

3.4 Airspace Classification

Free Route Airspace in Warszawa FIR is implemented in Class C airspace.

4 ELIGIBLE FLIGHTS

Eligible for FRA operations are all flights that plan at least a portion of their route within the limits of POLFRA area (time, lateral and vertical).

All internal flights within the airspace of Warszawa FIR are eligible for FRA operations within the limits of POLFRA area.

5 FLIGHT PLANNING RULES

5.1 FRA entry (E) and FRA exit (X) points rules

Entry and exit to and from POLFRA area shall be performed only via the points published and defined as FRA Entry, FRA Exit or FRA Entry / Exit in AIP Poland ENR 4.4.

These points will retain their functions from ATS route network operations or adjacent FRAs (e.g. points which are entry-only remain entry-only in FRA). Dedicated FRA Entry or FRA Exit

or FRA Entry / Exit normally will not be published, unless required by specific operational conditions and bilaterally agreed with adjacent ATC units.

5.2 FRA Intermediate Points (I) rules

Airspace users may file in their FPL FRA Intermediate points between FRA Entry, FRA Exit and FRA Entry / Exit points in order to wind optimize their profile, circumnavigate a particular area, indicate a change in flight level, flight rules or speed, or remain compliant with FIR boundaries rules (see paragraph 5.4).

A FRA Intermediate point could be any significant point - en-route radio navigation aid or 5LNC published in AIP Poland, ENR 4.1/ENR 4.4 respectively.

There is no restriction on the number of FRA Intermediate points used.

The use of unpublished FRA Intermediate point defined by geographical coordinates in FPL Item 15 is not allowed.

5.3 FRA Arrival and Departure Connecting Points rules

Entering the POLFRA by departing traffic shall be planned via:

- a FRA Departure Connecting Point;
- a SID Final Point;
- if required, the last point on a FRA Connecting Route;
- a FRA Horizontal Entry Point if departing from aerodrome in the proximity of FIR EPWW;
- if no suitable SID is available, via defined FRA (I) point within a required distance from the aerodrome according to the RAD.

Exiting the POLFRA by arriving traffic shall be planned via:

- a FRA Arrival Connecting Point;
- a STAR Initial Waypoint;I
- if required, the first point on a FRA Connecting Route;I
- a FRA Horizontal Exit Point if arriving to an aerodrome in the proximity of FIR EPWW;I
- if no suitable STAR is available, via defined FRA (I) point within a required distance from the aerodrome according to the RAD.

Mandatory connecting routes should be used for flight planning of departing/arriving traffic from/to airports published in ENR 3.5.

Recommended connecting routes are optional for flight planning of departing/arriving traffic from/to airports published in ENR 3.5. If in line with POLFRA rules other flight plans will be accepted.

5.4 FIR boundary rules

Segments between FRA Entry, FRA Intermediate and FRA Exit points shall remain fully contained within published POLFRA area. Flight plans with segments that partially cross the lateral limits of POLFRA area will be rejected by IFPS. Whenever exceptions apply they will be published in AIP and RAD.

The planning of segments closer than 5 NM to the POLFRA horizontal border is not allowed.

It is mandatory to insert a FRA Horizontal Entry/Exit Point in the flight plan when entering/exiting POLFRA Area except for traffic entering/exiting to/from FIR EPWW via TMAs.

5.5 Flight Plan ITEM 15: Route

Segments between FRA Entry, FRA Exit and FRA Intermediate points are to be indicated by DCT in Item 15 of the flight plan in accordance with ICAO Doc 4444.

Example: [Entry Point] DCT [Intermediate point] DCT [Intermediate point] DCT [Exit Point].

There are no restrictions on the DCT segments length.

5.6 Flight Level Orientation System

ICAO RVSM - FEET flight level orientation system (ODD / EVEN) is applied in POLFRA area.

ODD is the direction of IFR cruising levels within magnetic track between 000° - 179° (FL010, FL030 ..., FL310, FL330 ...FL410...etc.).

EVEN is the direction of IFR cruising levels within magnetic track between 180° - 359° (FL020, FL040 ..., FL300, FL320 ...FL430...etc.).

However for flight planning purposes in POLFRA area, a single flight level orientation (ODD / EVEN) might be applied over the entire common border with an adjacent FIR. All flights entering POLFRA will be transferred with the same FL orientation (e.g. ODD) and all flights exiting POLFRA will be transferred with the same opposing FL orientation (e.g. EVEN) as specified in the LoA with the respective ACC.

5.7 ATS Route network and Free Route Airspace

The ATS route network within FIR Warszawa remains available for flight planning and is mandatory to cross TMAs above FL095 and the following areas published in ENR 2.1.2: CTA 01/CTA 02/CTA 03/CTA 04/CTA 05.

5.8 Transition to and from Free Route Airspace

5.8.1 Flight planning when transiting to / from airports located within Warszawa FIR

Flights arriving to or departing from local (EP..) airports will transit to and from FRA only via published FRA Arrival and Departure connecting points as described in paragraph 5.3.

5.8.2 Flight planning when transiting due to change of cruising level

Eligible flights that make a change in cruising flight level resulting in a transition to/from POLFRA area shall file the portion of the flight outside POLFRA area along the standard ATS route network. The portion of the flight inside POLFRA area may be filed according to the free route rules. The transition point between POLFRA area and ATS route network should be any FRA Intermediate point published in AIP Poland, ENR 4.1/ENR 4.4

5.9 Airspace restriction and reservations

Flights must be planned around active special areas using valid FRA Intermediate points.

Additional FRA Intermediate points strategically located close to the boundaries of Special Areas might be published in order to facilitate flight planning around segregated airspace and the associated buffer zones. In order to minimize the use of scarce 5LNC dedicated points such FRA Intermediate points will be published only when there are no suitable FRA Intermediate points already published in AIP. Choosing of any FRA Intermediate point for the purpose of circumnavigating airspace of reduced availability will be left at operator's discretion and no mandatory use will be enforced, for particular cases some RAD restrictions might be applied.

Flight planning is not permitted through active restricted airspace, unless otherwise stated in RAD Appendix 7.

In order to correctly manage flight planning validation process in POLFRA all restricted areas above FL095 are associated with corresponding FBZ (Flight Buffer Zone) and/or FUA restriction published in RAD Appendix 7. All active restricted areas and FBZs will be published in EAUP/EUUP on NOP portal and should be used for proper flight planning validation.

EAUP/EUUP should be considered the main source for FPL purposes to notify airspace users about the status of airspace structures. The EAUPs/EUUPs update automatically the NM CACD database, therefore its information is used by IFPS for flight planning validation purposes.

Airspace Users shall plan their trajectory around airspaces that are not available for civil operations as published by EAUP/EUUP or NOTAM by using FRA Intermediate points published in ENR 4.1 / ENR 4.4.

5.10 Route Availability Document

All new POLFRA constrains, exceptions and restrictions, will be published via proper RAD and promulgated in accordance with ENR 1.10

All restrictions related to POLFRA area shall be properly adapted as they are currently referenced to ATS routes. These restrictions might not be applicable in POLFRA if flights will not be performed on ATS route network and need to be re-adapted and referenced to 5LNCs / NAVAIDs / airspace or withdrawn.

RAD Appendix 4 restrictions on en-route DCT limits are not applicable for free route eligible flights. The planning of DCTs across Warszawa FIR and POLFRA area borders (cross-border DCT) will not be allowed.

RAD Appendix 7 FUA restrictions will be properly adapted to reflect the potential possibility/impossibility of planning via active areas.

Any published RAD restrictions related to POLFRA shall be only point and/or volume based.

6 SECTORISATION AND CAPACITY

ATC sectors shapes will remain unchanged compared to ATS route network operations. Sector configurations will also be retained. No new sector capacities will be defined for FRA operations.

Currently no restrictions on the hourly capacity of ACC sectors are planned. Possible actions will include restrictions on aircrafts at ATCO control (OCC parameter) and will be taken at the tactical level as a result of the analysis of the forecasted traffic characteristics in ACC sectors. Traffic Manager / Senior ACC Controller will be responsible for tactical analysis.

7 TERMINAL AIRSPACE

Terminal airspace is not a part of free route airspace and free route principles of operation will not apply there.

Within terminal airspace fixed ATS route network remains viable for planning.

8 AIRSPACE MANAGEMENT

Airspace management procedures will remain largely unchanged and will follow the same principles as during the ATS route network operations periods based on existing FUA rules and procedures.

However adjustments might be needed in order to support free route operations. The envisaged actions at the three ASM levels are:

8.1 Strategic level

In order to correctly manage flight planning validation process in POLFRA all restricted areas above FL095 are associated with corresponding FBZ (Flight Buffer Zone) and FUA restriction published in RAD Appendix 7. All active restricted areas and FBZs will be published in EAUP/EUUP on NOP portal and should be used for proper flight planning validation.

8.2 Pre-tactical/Tactical level

Airspace Users shall plan their trajectory around airspaces that are not available for civil operations as published by EAUP/EUUP or NOTAM by using FRA Intermediate points published in ENR 4.1 / ENR 4.4.

EAUP/EUUP should be considered the main source for FPL purposes to notify airspace users about the status of airspace structures. The EAUPs/EUUPs update automatically the NM CACD database, therefore its information is used by IFPS for flight planning validation purposes.

No changes in ASM procedures for the airspace users and the joint civil-military coordination established are envisaged. Coordination procedures between AMC Poland and NM will be modified. Main source for the FPLs validation will be the list of planned restricted airspaces (instead of list of closed routes) exchanged between AMC Poland and NM via B2B.

9 LETTERS OF AGREEMENT AND COORDINATION PROCEDURES

LoAs and coordination procedures will be revised to reflect the specifics of FRA operations. New coordination procedures will be created for FRA Entry, FRA Exit and FRA Entry / Exit points that were previously unavailable for specific types of traffic due to ATS route network connectivity. Procedures for close-to-boundary traffic already exist in the LoAs, but these will be reinforced within the scope of FRA operations.

10 LOCAL ATC PROCEDURES

No change in local ATC procedures foreseen.

11 CONTINGENCY PROCEDURES

No dedicated contingency, ATS route network will be published.

In the event of major disruptions of Air Traffic Services and/or related supporting services, Free Route operations in Warszawa FIR will be suspended by NOTAM and the published ATS route network will apply.

12 AIP PUBLICATION

Publication of FRA operations within Warszawa FIR will be done via AIP Poland as prescribed by the ERNIP Part 1, Chapter 6. En-Route Design Methodology, paragraph 6.5. Free Route Airspace Design, with 2 AIRAC cycles in advance.

13 ATC SYSTEM

The ATC system currently in use is capable to meet the requirements for implementation of FRA operations at national level within Warszawa FIR.

14 DELEGATION OF ATS IN POLFRA

14.1 Delegation ATS to Sweden

ACC MALMÖ is responsible for the provision of air traffic control and flight information service within areas MIDSEA and RÖNNE SOUTH, as published in AIP Poland, ENR 2.1.2.

POLFRA entry points, exit points, entry/exit points are located on the border of the Warszawa FIR.

To reduce the required coordination and ensure proper flight planning in FRA environment without additional deviations from the track mobile co-ordination points (COP) will be located on borders of the delegation.

ATCO awareness of delegation area border displayed on radar indicator will help mitigate the associated risks.

14.2 Delegation ATS to/from Czech Republic

Areas within FIR Warszawa: W OF OKX and S OF KŁODZKO, where Praha ACC is responsible for the provision of air traffic control and flight information service, are excluded from POLFRA.

Area within PRAHA FIR: S OF DESEN where ACC Warszawa is responsible for the provision of air traffic control and flight information service, is included to POLFRA.

15 SAFETY

15.1 Safety Objectives

The implementation of POLFRA shall accommodate the high safety level already existing in Warszawa ACC.

15.2 Safety Assessments

Safety assessment has been performed by PANSA according to NSA requirements.

16 ACRONYMS

Acronym	Description
5LNC	Five Letter Name Code
ACC	Area Control Centre
AD	Aerodrome
AIP	Aeronautical Information Publication
ASM	Airspace Management
ATC	Air Traffic Control
ATS	Air Traffic Services
CANSO	Civil Air Navigation Services Organisation
CBA	Cross Border Area
D	Danger Area
DCT	Direct
ENR	En Route
ERNIP	European Route Network Improvement Plan
EUROCONTROL	European Organisation for the Safety of Air Navigation
FIR	Flight Information Region
FL	Flight Level
FMP	Flow management Position
FPL	Flight plan
FRA	Free Route Airspace
FUA	Flexible Use of Airspace
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFPS	Initial Flight Plan Processing System
IFR	Instrument Flight Rules
GAT	General Air Traffic
LoA	Letter Of Agreement
NM	Network Management or Nautical Mile
NOTAM	NOTice to Air Man
NSA	National Supervisory Authority
P	Prohibited Area
PANSA	Air Navigation Service Provided of Poland
POLFRA	Free Route Airspace in Poland
R	Restricted Area
RAD	Route Availability Document
TRA	Temporary Reserved Area
TSA	Temporary Segregated Area