European Route Network Improvement Plan/ERNIP

Implementation Monitoring

Monitoring Report: AIRAC 2302 - 23 FEB 2023 - 22 MAR 2023

SUPPORTING EUROPEAN AVIATION

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European Route Network Improvement Plan (ERNIP) Implementation Monitoring

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1 Introduction

1.1 Summary

(1) This Monitoring Report focuses on **AIRAC 2302 (23 FEB 2023 - 22 MAR 2023)**. It provides an update on the evolution of the environment indicators listed in the *Network Performance Plan* and plots on the progress achieved in improving airspace design and its utilisation flight efficiency, in line with the improvement proposals implemented in the relevant AIRAC cycle.

(2) As a result of the airspace enhancements implemented during AIRAC 2302 as well as the airspace design improvements put in place since AIRAC 2202 in connection with changing traffic patterns and structure, **potential savings offered** during AIRAC 2302 amount to 395000 NMs compared with the equivalent AIRAC cycle in 2022. This translates into 2300 tons of fuel, or 7900 tons of CO2, or €1900000.

(3) Based on the last filed flight plan indicator, the **actual losses calculated** during the AIRAC 2302 amount to 576000 NMs flown more compared to the equivalent AIRAC cycle in 2022. This translates into 3400 tons of fuel, or 11500 tons of CO2, or €2800000.

(4) The actual losses recorded on the last filed flight plan data during AIRAC 2302 compared to the equivalent AIRAC cycle in 2022 are a result of **special events** like weather, airspace availability, industrial actions, closed areas in adjacent airspace(s) and capacity issues in the network**.**

(5) The periodical implementation process is part of the ERNIP Part 2 - ARN Version 2022 - 2030 to enhance the European ATM capacity, flight efficiency and environmental performance through the development and implementation of an improved ATS route network, Free Route Airspace and TMA systems structures supported by corresponding improvements to the airspace structure and the optimal utilisation rules.

1.2 Performance Targets - Third Reference Period (RP3)

(1) The ERNIP Part 2 - ARN Version 2022 - 2030 will contribute to the achievement of the performance targets of the 3rd Reference Periods of the Single European Sky Performance Scheme (RP3). For the 3rd performance Reference Period starting on 1st January 2020 and ending on 31st December 2024, the European Union-wide performance indicators are as follows:

Environment

a) Average horizontal en route flight efficiency of the actual trajectory, calculated as follows:

i) The indicator is the comparison between the length of the en route part of the actual trajectory derived from surveillance data and the achieved distance, summed over IFR flights within or traversing the airspace as defined in Article 1, hereinafter referred to as 'European airspace'.

ii) 'En route part' refers to the distance flown outside a circle of 40 NM around the airports.

iii) Where a flight departs from or arrives at an airport outside the European airspace, the entry or exit points of the European airspace are used for the calculation of this indicator as the origin or destination respectively, rather than the departure or destination airport.

iv) Where a flight departs from and arrives at an airport inside the European airspace and crosses a non-European airspace, only the part inside the European airspace is used for the calculation of this indicator.

v) 'Achieved distance' is a function of the position of the entry and exit points of the flight into and out of each portion of airspace for all parts of the trajectory. Achieved distance represents the contribution that those points make to the great circle distance between origin and destination of the flight; and

vi) The indicator is calculated for the whole calendar year and for each year of the reference period, as an average. When calculating this average, the ten highest daily values and the ten lowest daily values are excluded from the calculation.

This KPI is applicable at both network and Functional Airspace Block level.

(2) The Regulation also introduces a new environmental indicator for monitoring:

a) The share of arrivals applying Continuous Descent Operation (CDO), calculated at local level as follows:

i) This indicator is the ratio between the total number of arrivals performing a CDO from a reference point at a height above ground, defined by the national supervisory authority, and the total number of arrival operations; and

ii) This indicator is expressed as a percentage, calculated for the whole calendar year and for each year of the reference period.

This indicator is applicable at the local level.

(3) It should be noted that this indicator might be used to measure the performance of the part of the descent profile where noise is the principal environmental impact. Whilst the altitude of the reference point to be defined by the national supervisory authority may depend upon local factors such as airspace particularities or the extent of the area of responsibility, the majority of emissions savings can be gained from enabling CDO from top of descent or from higher levels wherever possible. Whilst reference points may be defined according to local requirements, airspace design should still aim to enable CDO from top of descent or from as high a level as possible.

Capacity:

a) The average minutes of en route ATFM delay per flight attributable to air navigation services, calculated as follows:

i) The en route ATFM delay is the delay calculated by the Network Manager, expressed as the difference between the estimated take-off time and the calculated take-off time allocated by the Network Manager.

ii) For the purposes of this indicator:

- 'Estimated take-off time' means the forecast of time when the aircraft will become airborne calculated by the Network Manager and based on the last estimated off-block time, or target off-block time for those airports covered by airport collaborative decision-making procedures, plus the estimated taxi-out time calculated by the Network Manager.
- 'Calculated take-off time' means the time allocated by the Network Manager on the day of operation, as a result of tactical slot allocation, at which a flight is expected to become airborne.
- 'Estimated taxi-out time' means the estimated time between off-block and take off. This estimate includes any delay buffer time at the holding point or remote de-icing prior to take off.

iii) This indicator covers all IFR flights and all ATFM delay causes, excluding exceptional events; and

iv) This indicator is calculated for the whole calendar year and for each year of the reference period.

The ARN Version 2022 - 2030 also responds to the targets included in the Network Performance Plan (NPP) 2020 - 2024 as described below:

a) Route extension - last filed flight plan:

i) Targets:

- Achieve 3.78% for NM area for KPI by 2024.

b) Percentage of En-route delay savings:

i) Targets:

- Deliver additional operational benefits in terms of en-route delay savings of 10% of total en-route delay.

1.3 A Consolidated European Airspace Development

(1) The ERNIP Part 2 - ARN Version 2022 - 2030 will ensure the implementation, in cooperation with the ANSPs and the FABs, of the Airspace Vision agreed by the Network Management Board:

a) A comprehensive cross-border implementation of FRA in the European airspace.

b) An optimised ATS route structure below FRA ensuring efficient connectivity with TMAs.

c) A simplification of the RAD.

d) A harmonisation of the airspace publications.

e) More efficient Flexible Use of Airspace procedures and the associated system support to enable a better utilisation of the civil/military airspace structures.

f) A closer cooperation between the Network Manager, the airspace users and the computer flight plan service providers aimed at ensuring a better utilisation of the available airspace structures.

(2) The ERNIP Part 2 - ARN Version 2022 - 2030:

a) Achieves a European Route Network for the safe and efficient operation of air traffic, taking due account of the environmental impact.

b) Keeps operational consistency of the European airspace organisation.

c) Consolidates into a network approach the FABs developments, the wide implementation of airspace projects from FRA to TMA developments.

d) Facilitates the development of an airspace structure offering the required level of safety, capacity, flexibility, responsiveness, environmental performance and seamless provision of expeditious air navigation services, with due regard to security and defence needs.

e) Ensures the implementation of the Airspace Restructuring Programme.

f) Ensures regional interconnectivity and interoperability of the European route network within the ICAO EUR Region and with adjacent ICAO Regions.

g) Ensures compliance with the Commission Implementing Regulation 2021/116, Common Project 1 (CP1), amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014, thus fully supporting the implementation of the European Air Traffic Management Master Plan.

(3) The ERNIP Part 2 - ARN Version 2022 - 2030 includes details on:

a) Implementation of FRA projects.

b) ATS route network developments.

c) Re-sectorisation actions.

d) Actions aimed at simplifying the usage of the ATS route network.

e) Civil/military airspace structures.

(4) The ERNIP Part 2 - ARN Version 2022 - 2030 is derived from the following sources:

a) Airspace Restructuring Programme.

b) Solutions developed inside various FAB initiatives.

c) Proposals originating at national or sub-regional level.

d) Network Manager proposals supported by the operational stakeholders covering a cohesive development of the European Airspace Structure.

e) Aircraft operator’s proposals.

1.4 Monitoring and Improvement

(1) Through the ERNIP Part 2, the Network Manager supports the Commission by providing relevant input for the preparation of Union-wide performance targets before the reference periods and for **monitoring the achievement of the performance targets during the reference period**.

(2) In that respect, a close cooperation and synchronisation was ensured between the Network Manager and all the FABs in the preparation of the ERNIP Part 2 - ARN Version 2022 - 2030, as part of the Network Operations Plan.

(3) The Monitoring Report - as part of the ERNIP Part 2 - ARN Version 2022 - 2030 addresses the **monitoring and improvement of the environment/flight efficiency performance** of the network from an airspace design and utilisation perspective as one of the requirements laid down in the COMMISSION IMPLEMENTING REGULATIONS.

(4) The **ERNIP Implementation Monitoring Report** is published every **A**eronautical **I**nformation **R**egulation **A**nd **C**ontrol (AIRAC) cycle and available via the EUROCONTROL *Airspace design and utilisation website* (publication/activity):

(5) The list of all available monitoring reports is accessible via the EUROCONTROL *Route network and airspace design* website (function):

https://www.eurocontrol.int/online-tool/european-route-network-improvement-plan-tool

(6) A copy of the ERNIP Implementation Monitoring Report is available via the restricted EUROCONTROL SharePoint for access by interested members of the RNDSG and ASMSG *(see sub-sections under main section "LIBRARY"):*

RNDSG - Monitoring Reports - All Documents (sharepoint.com)

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2 List of Proposals Implemented

2.1 Summary of major projects

(1) During the **AIRAC 2302 5 (five)** airspace improvement package coordinated at network level were implemented. The summary covers ECAC States AIP en-route publication issues, ATS route network, FRA implementations, FRA and RAD improvements on **23 FEB 2023**:

a) Bulgaria/Czech Republic/Hungary/Moldova/Romania/Slovakia:

i) Cross-border FRA operations between SEE FRA and FRACZECH.

b) Germany:

i) Implement Performance Based Navigation (PBN) in Sylt Airport.

c) Greece:

i) ATS route network improvement within ATHINAI FIR/HELLAS UIR.

d) Morocco:

i) Improve flight planning options in FRA.

e) Spain:

i) Implement independent parallel approaches for Madrid Barajas Airport.

(2) The latest situation of the European ATS route network structure is available and updated at each AIRAC cycle through the publication of Regional Electronic Charts that can be found here:

https://www.eurocontrol.int/service/cartography

3 Evolution of Performance Indicators

3.1 Airspace Design Indicator Evolution

(1) The graph below shows the yearly evolution of airspace design flight efficiency (RTE-DES[1]) over the period 2007 - 2022 and its evolution until **22 MAR 2023**.

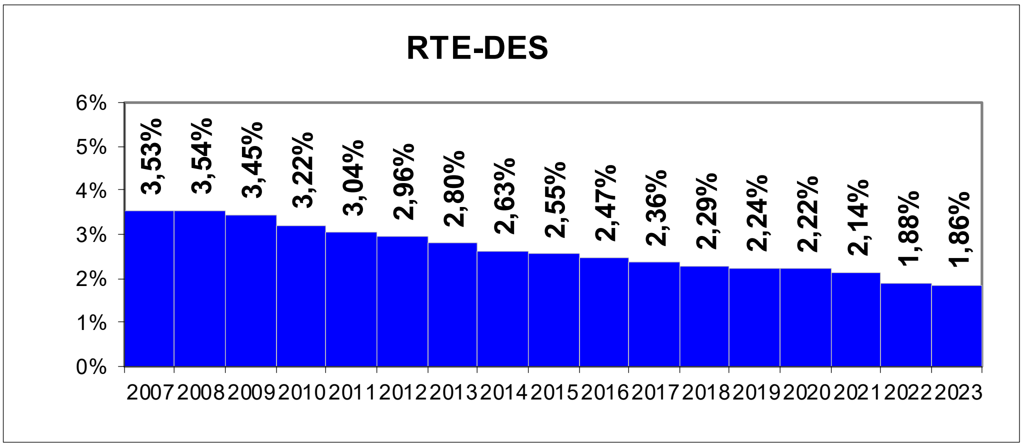

Figure 1: Airspace Design Indicator Evolution

3.2 Flight Planning Indicator Evolution

(1) The graph below shows the yearly evolution of the last filed flight plan indicator (RTE-FPL[2]) over the period 2007 - 2022 and its evolution until **22 MAR 2023**.

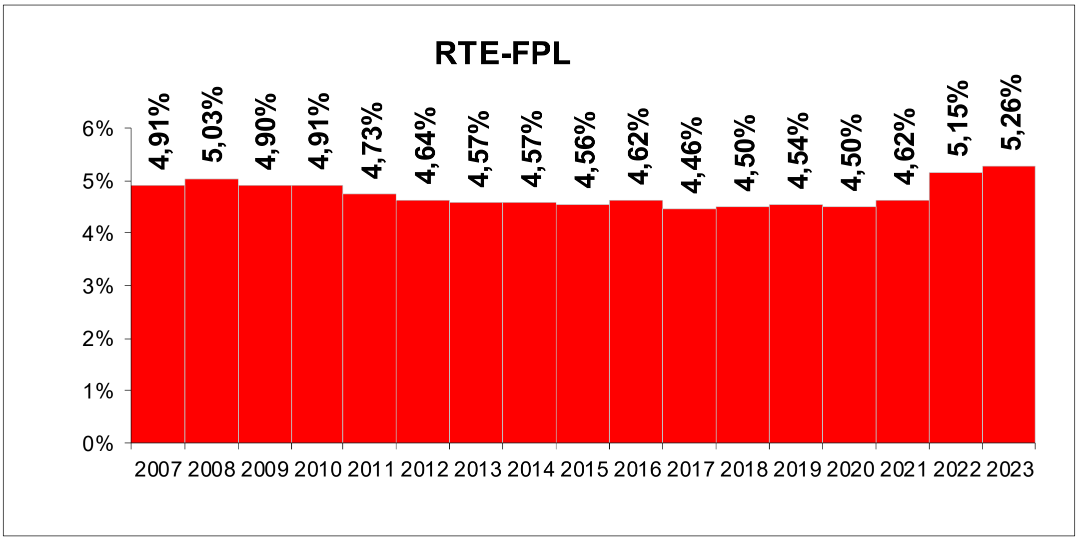

Figure 2: Flight Planning Indicator Evolution

1 **RTE-DES** (Flight Extension due to Route Network Design) This KPI is calculated by measuring the difference between the shortest route length (from TMA exit and entry points) and the great circle distance. For this KPI the RAD is not taken into account and all the CDR routes are considered as open.

2 **RTE-FPL** (Flight Extension due to Route Network Utilisation - last filled FPL) This KPI is calculated by measuring the difference between the route from the last filed flight plan for each flight (from TMA exit and entry points) and the great circle distance.

3.3 Route Availability Indicator Evolution

(1) The impact of the civil route restrictions included in the Route Availability Document (RAD) is measured through a specific RAD indicator (RTE-RAD[3]). The graph below shows the yearly evolution of the RTE-RAD indicator over the period 2007 - 2022 and its evolution until **22 MAR 2023**.

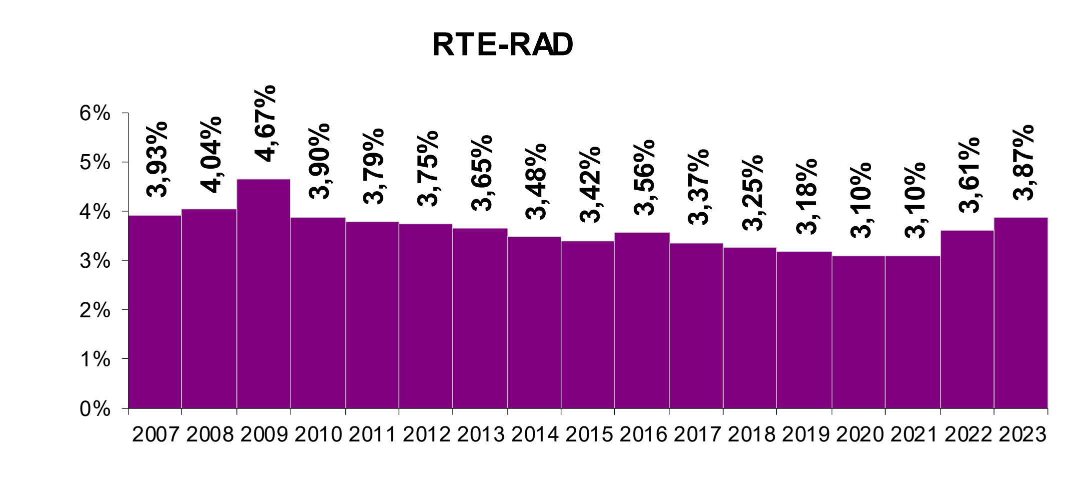

Figure 3: Route Availability Indicator Evolution

3.4 Flight Efficiency Evolution per AIRAC Cycle

3.4.1 General Evolution Overview

(1) The graph below shows the evolution per AIRAC cycle of the two main flight efficiency indicators RTE-DES and RTE-FPL between January 2008 and **22 MAR 2023**.

[3] **RTE-RAD**: (Flight Extension due to Route Network Utilisation - RAD active) This KPI is calculated by measuring the difference between the shortest plannable route length (from TMA exit and entry points) and the great circle distance. For this KPI the RAD is taken into account and all the CDR routes are considered as open.

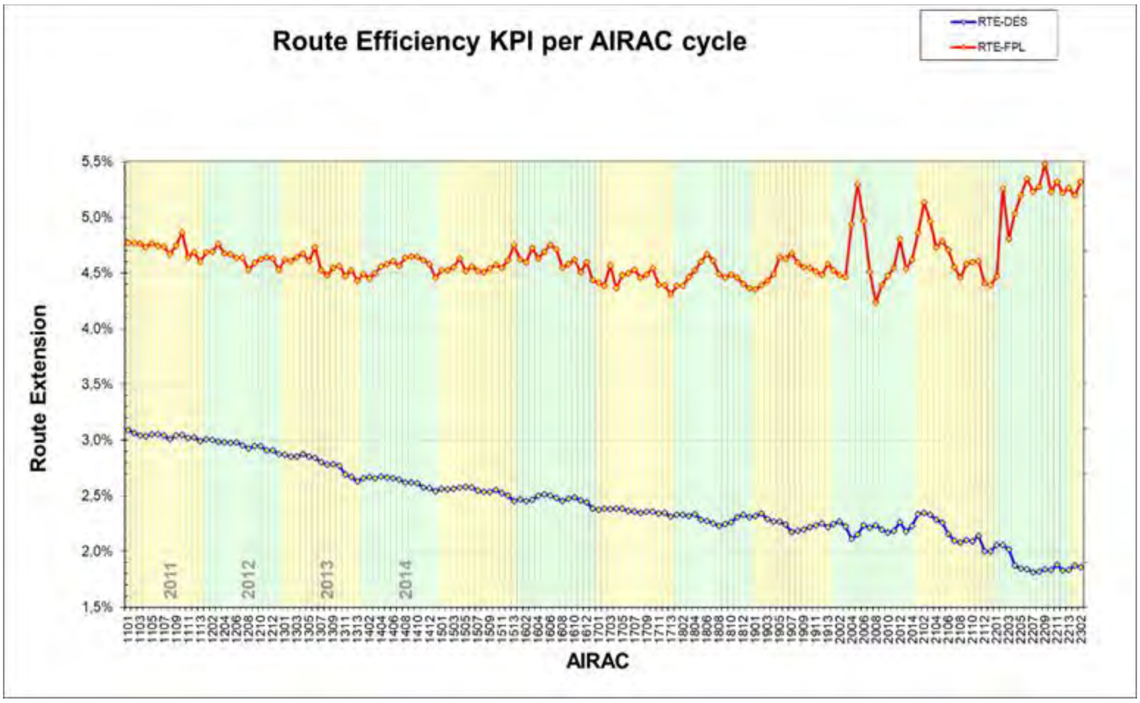

Figure 4: Flight Efficiency (DES, FPL) Evolution Per AIRAC Cycle

(2) The graph below shows the evolution per AIRAC cycle of the two main efficiency indicators RTE-DES and RTE-FPL in relation to the RTE-RAD indicator between January 2008 and **22 MAR 2023**.

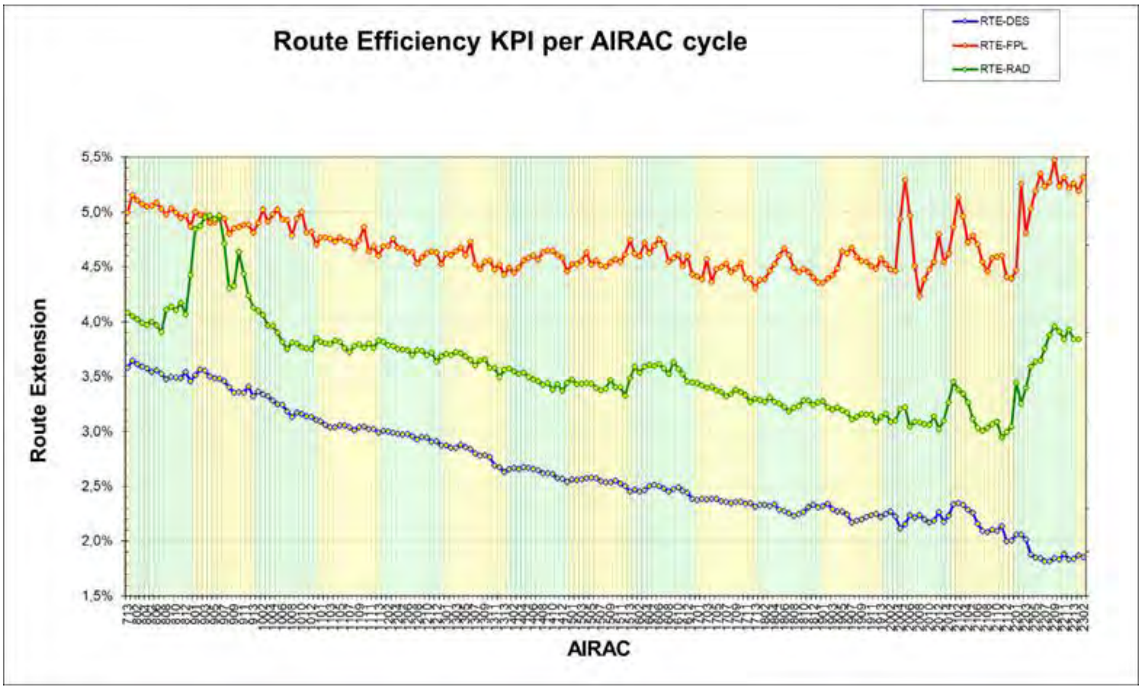

Figure 5: Flight Efficiency (DES, RAD, FPL) Evolution Per AIRAC Cycle

(3) **The difference between the three indicators (DES, FPL, RAD) clearly indicate that additional efforts must be made to further improve the efficiency of airspace utilisation and to ensure that the indicator based on the latest filed flight plan (FPL) and the RAD indicator follow similar trend as the airspace design indicator (DES).**

3.4.2 Evolution of RTE-DES and RTE-FPL Indicators

(1) The current data indicates that, the average route extension due to airspace design was reduced by 0.2 percentage points compared to the equivalent AIRAC cycle in 2022. The evolution of the airspace design indicator is on the right path and the contributions of the airspace design projects are key for improving flight efficiency. The route extension due to airspace design went down to 1.86% during AIRAC 2302.

(2) The current data indicates that, the average route extension based on the last filed flight plan was increased by 0.06 percentage points compared to the equivalent AIRAC cycle in 2022. The route extension based on the last filed flight plan was 5.26% during AIRAC 2302.

(3) The difference between the airspace design indicator and the last filed flight plan indicator was 3.2 percentage points during the equivalent AIRAC cycle in 2022 and 3.46 percentage points during AIRAC 2302.

3.4.3 Evolution of RTE-RAD Indicator

(1) As shown in Figure 5 above the impact of the RAD increased by 0.39 percentage points compared to the equivalent AIRAC cycle in 2022. The route extension based on the impact of the RAD was 3.84% during AIRAC 2302. Continuous actions will be required further diminishing this impact and ensuring that the target set in the Network Manager Performance Plan is reached.

*Note: **During the COVID-19 crisis**, over 1000 **RAD restrictions** have been **suspended** until 24th March 2022. The RAD measures addressed offer additional flight planning options and - depending on daily traffic and airline choices made - generate a significant amount of distance-flown savings. It is subject to each ANSP to unsuspend these temporary modifications to national and cross-border restrictions. NM will continuously monitor the situation in relation to the COVID-19 evolution and adapt the actions accordingly.*

3.4.4 Benefits and Assessment of RTE-DES and RTE-RPL Evolutions

(1) As a result of the airspace enhancements implemented during AIRAC 2302 as well as the airspace design improvements put in place since AIRAC 2202 in connection with changing traffic patterns and structure, **potential savings offered** during AIRAC 2302 amount to 395000 NMs compared with the equivalent AIRAC cycle in 2022. This translates into 2300 tons of fuel, or 7900 tons of CO2, or €1970000.

(2) Based on the last filed flight plan indicator, the **actual losses calculated** during the AIRAC 2302 amount to 576000 NMs flown more compared to the equivalent AIRAC cycle in 2022. This translates into 3400 tons of fuel, or 11500 tons of CO2, or €2800000.

(3) The actual losses recorded on the last filed flight plan data during AIRAC 2302 compared to the equivalent AIRAC cycle in 2022 are a result of **special events** like weather, airspace availability, industrial actions, closed areas in adjacent airspace(s) and capacity issues in the network.

(4) The special events recorded for this AIRAC cycle are as follows:

a) **Closure of Ukrainian airspace** that led a significant number of flights to move to neighbouring countries (Türkiye, Bulgaria, Romania, Poland, Slovakia, etc.); as a result of the Ukrainian crisis adjacent ACCs/UACs were also on-loaded by Far Eastern traffic avoiding the Ukraine airspace leading to increased route extensions.

b) **Unavailability of Libyan airspace** for over flights with impact on flight efficiency for traffic between Europe and Africa.

c) **Avoidance of Syrian airspace** with impact on flight efficiency for traffic between Europe and Middle East and Asia re-routed via Iran and Türkiye with additional impacts on the flows from the Ukrainian crisis.

(5) Figure 6 below shows the airspace unavailability and closed areas in February 2023.

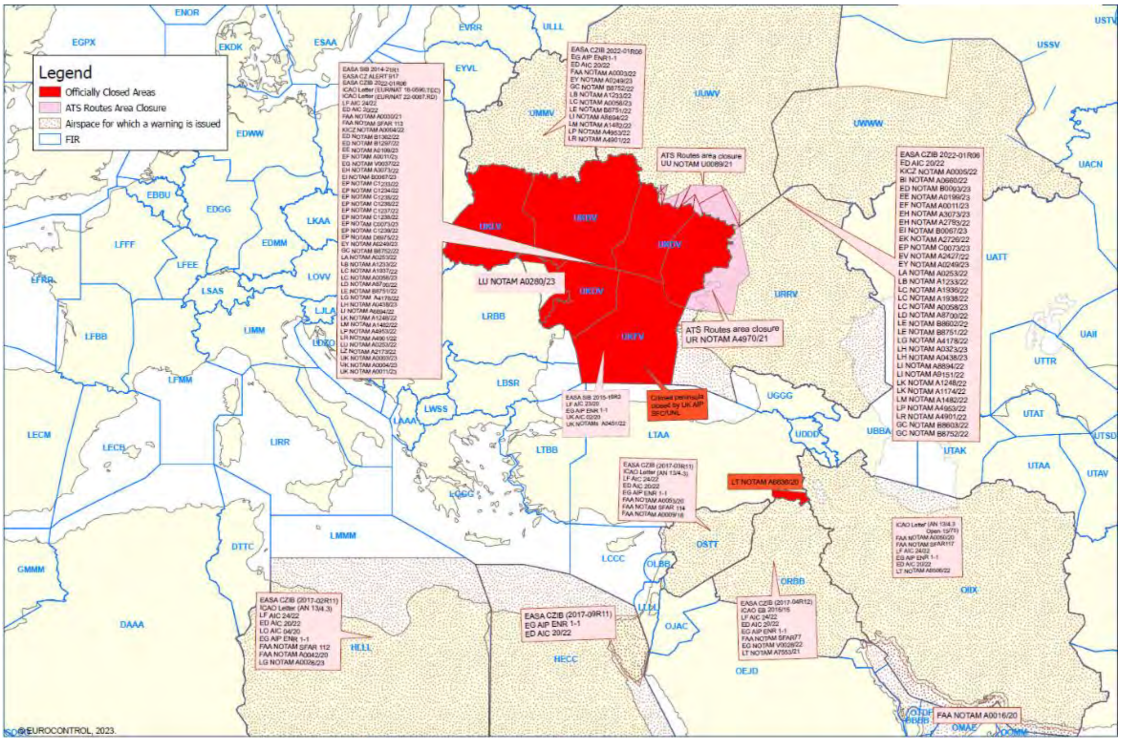

Figure 6: Airspace Unavailability and Closed Areas in February 2023

(6) The comparison between the potential (RTE-DES) and actual (RTE-FPL) savings/losses related to the different parameters is presented in the graphs below (see Figure 7 to Figure 10).

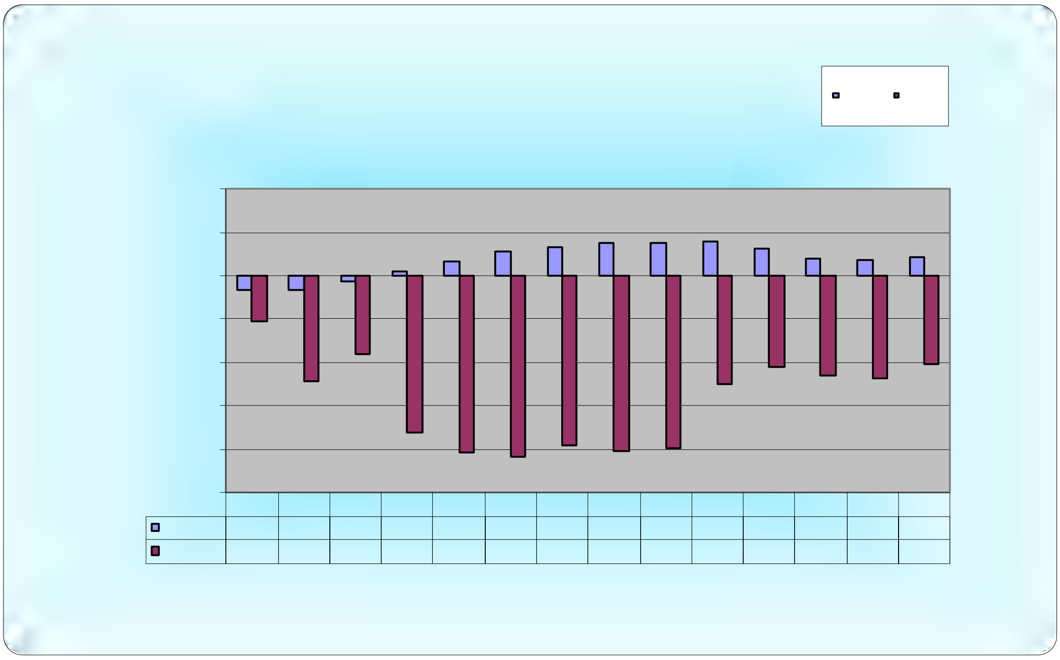

Figure 7: Flight Efficiency Savings/Losses in Thousands of NM

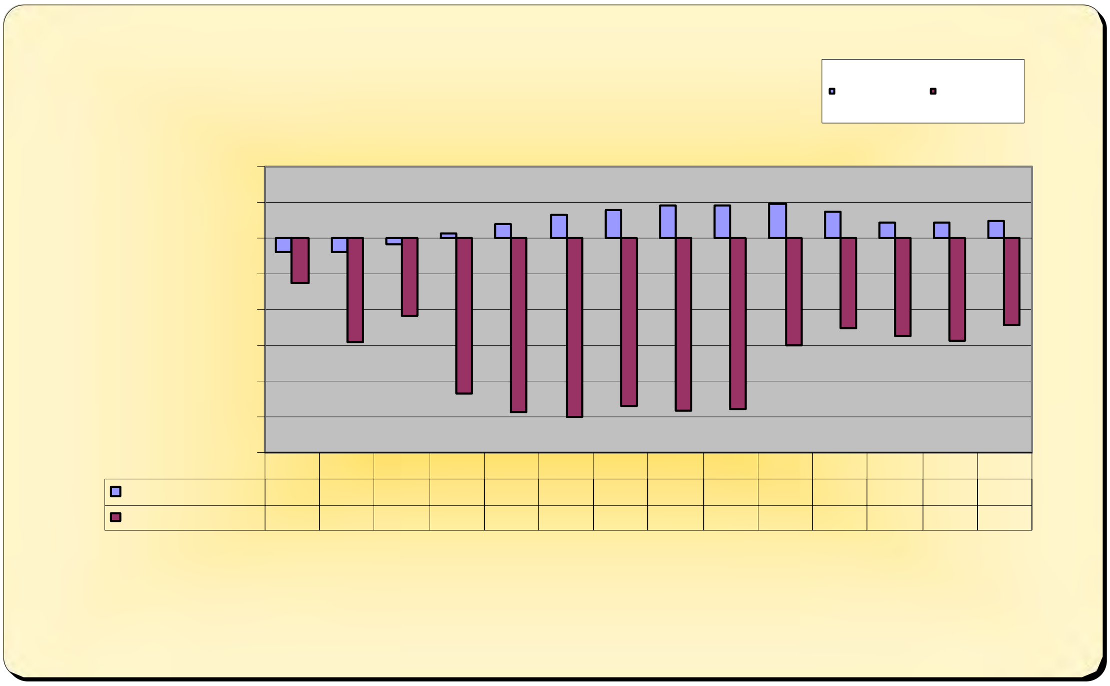

Figure 8: Flight Efficiency Savings/Losses in Tons of Fuel

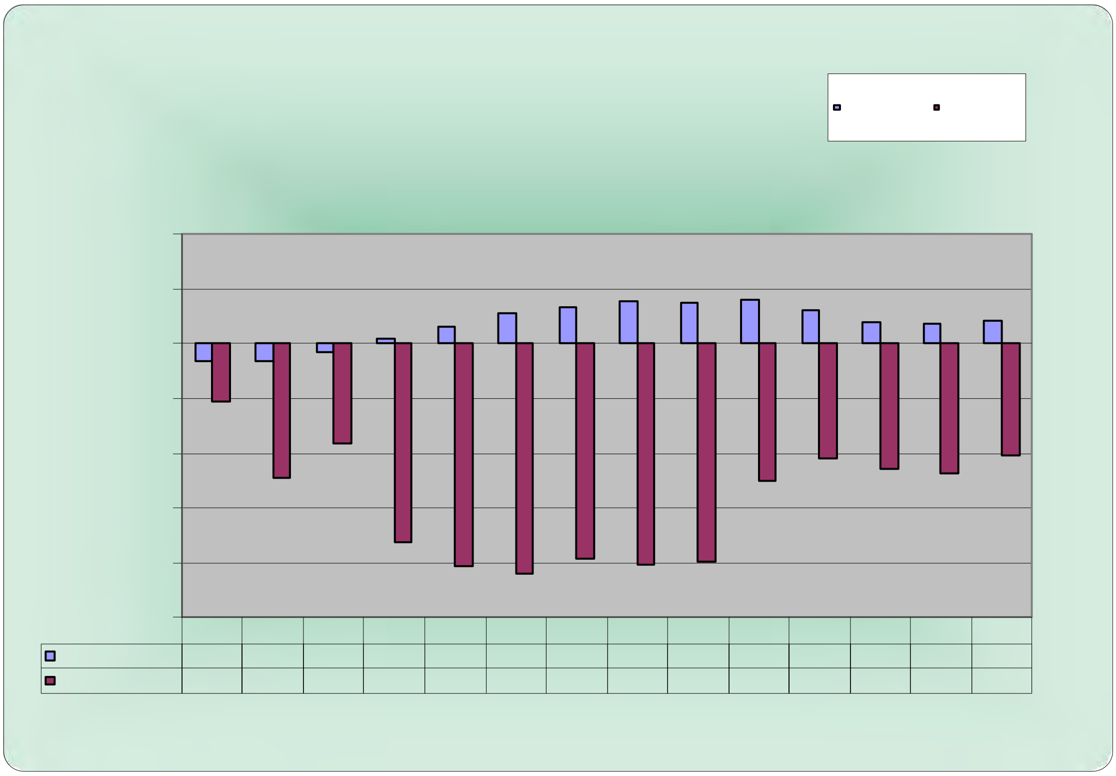

Figure 9: Flight Efficiency Savings/Losses in Tons of CO_2

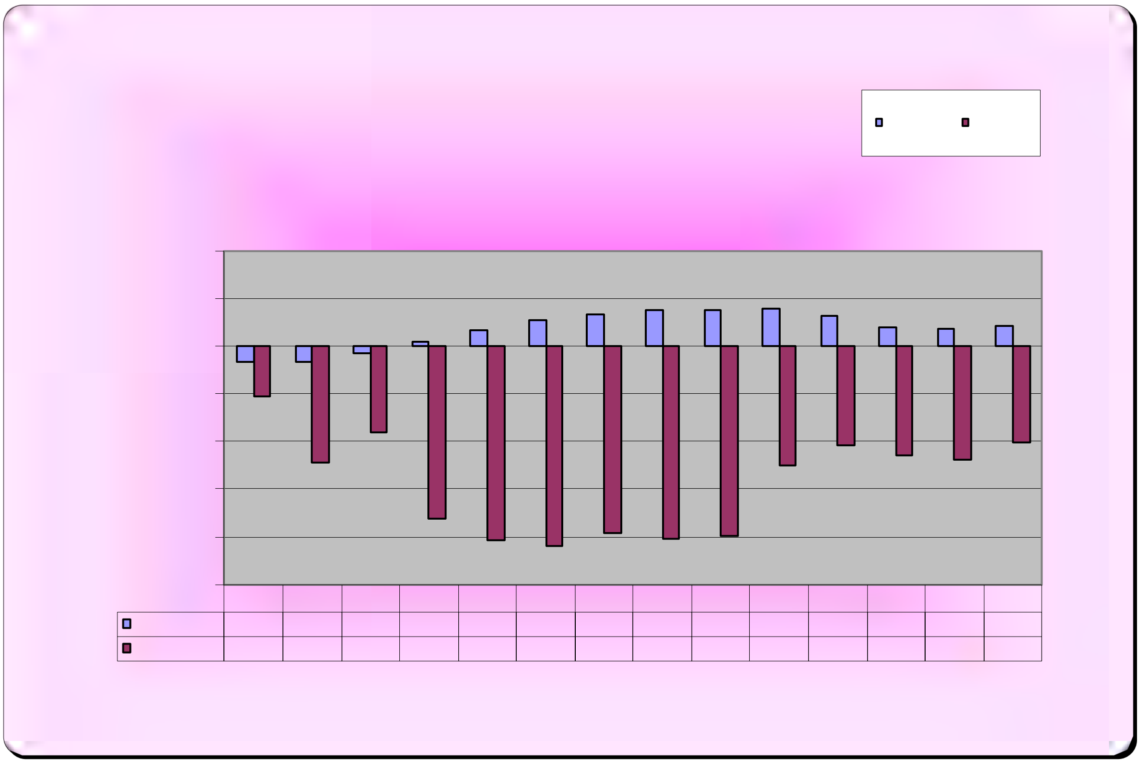

Figure 10: Flight Efficiency Savings/Losses in Thousands of EURO

Note: For additional information on ATFM delay that could impact on network efficiency consult the NM Monthly Network Operations Reports, accessible via: https://www.eurocontrol.int/library/search?f%5B0%5D=product%3A807&f%5B1%5D=product%3A807

3.4.5 Benefits and Assessment of RTE-RAD Evolutions

(1) The RAD indicator is impacted by improvements in airspace design and the removal of RAD restrictions. More actions will be required to ensure that the KPI based on the RAD indicator follows trends similar to the airspace design indicator (DES) as well as to ensure that the target set in the Network Manager Performance Plan is reached.

3.5 Free Route Airspace Evolution

(1) FRA implementation leads to improved flight efficiency and has an economic impact in terms of fuel savings as well as notable environmental impact on climate in terms of reduced CO2 emissions.

(2) FRA implementation within the European network started on 07th May 2009 by Portugal within the airspace of Lisboa FIR.

(3) Free Route Airspace is currently fully implemented on H24 basis within the airspaces of Albania, Armenia, Austria, Belgium (Maastricht UAC AoR), Bosnia and Herzegovina, Bulgaria, Croatia, Denmark, Estonia, Finland, France (only within Brest ACC AoR and Bordeaux ACC AoR), Georgia, Germany (Maastricht UAC AoR and Karlsruhe UAC AoR), Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg (Maastricht UAC AoR), Malta, Montenegro, Netherlands (Maastricht UAC AoR), North Macedonia, Norway, Poland, Portugal, Republic of Moldova, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and United Kingdom.

(4) Free Route Airspace for the night period has been implemented in Germany (Munchen ACC AoR and Bremen ACC AoR), Greece and Morocco (Agadir ACC AoR).

(5) Additionally, large cross-border FRA areas are implemented between the following States:

a) **BALTIC FRA**: Poland and Lithuania.

b) **BOREALIS FRA**: Denmark, Estonia, Ireland, Finland, Latvia, Norway, Sweden and United Kingdom.

c) **FRASC**: Armenia and Georgia.

d) **SECSI FRA**: Albania, Austria, Bosnia and Herzegovina, Croatia, Montenegro, North Macedonia, Serbia and Slovenia.

e) **SEE FRA**: Bulgaria, Hungary, Republic of Moldova, Romania and Slovakia.

f) **BALTIC FRA** and **SEE FRA**.

(6) The following map shows Free Route Airspace implementation plans until end of 2023.

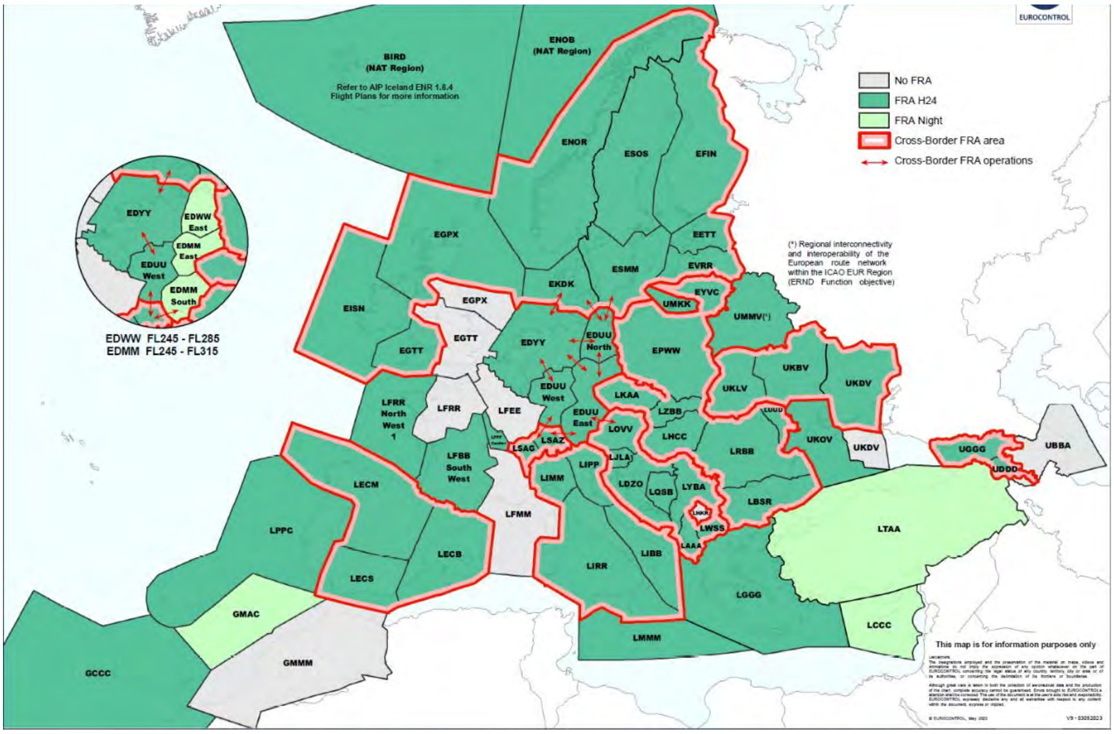

Figure 11: Free Route Airspace Implementation – End 2023

3.6 ASM Performance Assessment

*Note: There is no ASM Performance Assessment included for AIRAC 2302. The ASM Performance Assessments **Q1, Q2 and Q3 2023** will be included for AIRAC 2310. The ASM Performance Assessment **Q4 2023** will be included for AIRAC 2313.*

3.7 PBN Implementation Monitoring

(1) The status of PBN Implementations with regards to the requirements of the Commission Implementing Regulation (EU) 2018/1048 (PBN IR) was monitored by the NM.

(2) All PBN related implementations during AIRAC *2302* are presented in Table 1. Details of these and future PBN implementations can be found in the PBN Transition Plans included in the ERNIP application as separate proposals under the Project Category "PBN Transition Plan".

State	Aerodrome	RWY	PBN Implementation
France	LFKF	23	New RNAV 1 SID GNSS.
France	LFMP	33	New LPV (CAT 1) minima on IAC and new RNAV 1 STAR (GNSS).
France	LFOZ	05	New LNAV/VNAV minima on IAC.
France	LFOZ	23	New LNAV/VNAV minima on IAC.
France	LFTW	18	New RNAV 1 STAR (GNSS and DME/DME).
France	LFTW	36	New RNAV 1 STAR (GNSS and DME/DME).
Germany	EDDS	07	New RNP 1 SID.
Germany	EDXW	14	New LPV (CAT 1) minima on IAC and new RNAV 1 SID (GNSS and DME/DME).
Germany	EDXW	32	New LPV (CAT 1) minima on IAC and new RNAV 1 SID (GNSS and DME/DME).
Serbia	LYBE	12R	New IAC with LNAV, LNAV/VNAV and LPV (CAT 1) minima and new RNAV 1 SID/STAR (GNSS).
Serbia	LYBE	30L	New IAC with LNAV, LNAV/VNAV and LPV (CAT 1) minima and new RNAV 1 SID/STAR (GNSS).
Slovenia	LJPZ	15	New IAC with LNAV and LPV (APV 1) minima and new RNP 1 STAR.
Slovenia	LJPZ	33	New RNP 1 SID.
Spain	LEMD	18L	New IAC with LNAV, LNAV/VNAV and LPV (CAT 1) minima.
Spain	LEMD	18R	New IAC with LNAV, LNAV/VNAV and LPV (CAT 1) minima.
Spain	LEMD	32L	New IAC with LNAV, LNAV/VNAV and LPV (CAT 1) minima and new RNAV 1 STAR (GNSS and DME/DME).
Spain	LEMD	32R	New IAC with LNAV, LNAV/VNAV and LPV (CAT 1) minima and new RNAV 1 STAR (GNSS and DME/DME).

Table 1: PBN related Implementations - AIRAC *2302*

(3) A complete and detailed view of the PBN implementations in Europe, including for AIRAC *2302*, can be found on PBN Map Tool.

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Appendixes

A. Detailed List of Implemented Projects

(1) The following table presents detailed information about each of the improvement proposals developed within the RNDSG and implemented during the relevant AIRAC cycle. The description of the proposals is based on the information available from different sources (e.g. Airspace Users, Member States/ANSPs, ICAO and EUROCONTROL).

The table includes.

a) **Proposal ID number**:

A reference number to identify each proposal allowing tracing at which RNDSG it was initiated.

b) **Project Name**:

Dedicated Name and Phase/Step of the improvement project.

c) **Description**:

A detailed description of the planned improvement proposal.

d) **Event**:

A flag to indicate proposals with possible impact on the network.

e) **Objective**:

A brief description of the purpose of the enhancement measure.

f) **Implementation Status**:

The implementation status defined as Proposed, Planned, Confirmed or Implemented.

g) **Project Group**:

The Functional Airspace Block Group (FAB), Regional Focus Group (RFG), Sub-Group (SG) or any other Project Group(s) involved directly or indirectly by the proposed enhancement measure.

h) **Project Category**:

The nature of the proposed enhancement measure defined through Project Categories (e.g. Airspace Structure, ATC Sectors, ATS Routes, Free Route Airspace, TMA etc.).

i) **Serial Number / Circulation Letter / Approval Letter**:

Records the ICAO coordination procedure for implementation of airspace changes over the High Seas in accordance with the EANPG59 RASG-EUR06 Conclusion/15.

j) **States and Organisations**:

The States and/or Organisations involved directly or indirectly by the proposed enhancement measure.

k) **Originator(s)**:

The States and/or Organisations who have originated the proposal.

l) **Comments**:

The conditions and/or pre-requisites, which have to be met in order to implement the proposal or any other relevant comment(s).

(2) Due to the fully automated ERNIP process in box “States and Organisations” the following ISO-3 coding of States is used:

ISO-3	State	ISO-3	State	ISO-3	State
ALB	Albania	**FRA**	France	**MDA**	Moldova, Republic of
ARM	Armenia	**GBR**	United Kingdom	**MKD**	North Macedonia
AUT	Austria	**GEO**	Georgia	**MLT**	Malta
AZE	Azerbaijan, Republic of	**GRC**	Greece	**MNE**	Montenegro
BEL	Belgium	**HRV**	Croatia	**NLD**	Netherlands
BGR	Bulgaria	**HUN**	Hungary	**NOR**	Norway
BIH	Bosnia and Herzegovina	**IRL**	Ireland	**POL**	Poland
BLR	Belarus	**IRN**	Iran, Islamic Republic of	**PRT**	Portugal
CHE	Switzerland	**IRQ**	Iraq	**ROU**	Romania
CYP	Cyprus	**ISL**	Iceland	**RUS**	Russian Federation
CZE	Czech Republic	**ISR**	Israel	**SRB**	Serbia
DEU	Germany	**ITA**	Italy	**SVK**	Slovakia
DNK	Denmark	**JOR**	Jordan	**SVN**	Slovenia
DZA	Algeria	**LBY**	Libya	**SWE**	Sweden
EGY	Egypt	**LTU**	Lithuania	**SYR**	Syrian Arab Republic
ESP	Spain	**LUX**	Luxembourg	**TUN**	Tunisia
EST	Estonia	**LVA**	Latvia	**TUR**	Türkiye
FIN	Finland	**MAR**	Morocco	**UKR**	Ukraine

Table 2: ISO-3 Coding of States

(3) The abbreviation MUAC is also used to indicate the relevance to EUROCONTROL Maastricht UAC.

***Note:* The list of implemented changes for this AIRAC cycle does not claim to be complete. For the correctness and verification of the relevant aeronautical information, consult official State AIP publications. The data from this document should not be used for operational purpose.**

	r p : . 7	:	r b r:	mm :
•	**r j m : B p r** **r p :** o implement cross border A operations between A and A Z H. **bj v :** o allow seamless A operations within outh ast and entral urope.	**mp m :** Implemented B	**rg:** BG Z H A VK **r g r :** **r j g ry:** A ree oute Airspace	1. he best option for Z on joining I A or A to be further assessed. 2. A atalogue eference A . **pr p :** • . • . • .
	r p : 5. 6	**:**	**r b r:**	**mm :**
•	**r j m : y rp r B** **r p :** a. o introduce B procedures at ylt (XW) Airport. b. o delete reference to conventional nav aid B as preparation for de commissioning. **bj v :** o introduce B procedures to WY / , including AV I s and approaches.	**mp m :** Implemented B	**rg:** **r g r :** **r j g ry:** B A	**pr p :** • . b
	r p : 89. b	**:**	**r b r:**	**mm :**
•	**r j m : r -** **r p :** o implement independent parallel approaches for adrid Barajas Airport (**r b b g r**). **bj v :** o increase capacity and efficiency in adrid A.	**mp m :** Implemented B	**rg:** **r g r :** **r j g ry:** B A	**pr p :** 1. . a
	r p : 6. 6	**:**	**r b r:**	**mm :**

•	**r j m :** **r mpr v m** **r p :** o implement new as crossing of A routes **7 8** and . **bj v :** o improve flight planning in A HI AI I /H A I .	**mp m :** Implemented B **r mb r :** / A / H G **ppr v r:** / A . of January	**rg:** G **r g r :** G **r j r p:** G **r j g ry:** A outes High eas	
	r p : **5. 7**	**:**	**r b r:**	**mm :**
•	**r j m :** **p** **r p :** o publish existing point as **X** . **bj v :** o further improve flight planning options in A.	**mp m :** Implemented B	**rg:** A **r g r :** **r j g ry:** ree oute Airspace	3. urther requires adaptation of s between AKAV and G.

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