EUROCONTROL

LSSIP 2020 - CZECH REPUBLIC
LOCAL SINGLE SKY IMPLEMENTATION

Level 1 - Implementation Overview

FOREWORD

We as the EUROCONTROL Network Manager have a major task to support aviation and all our partners; this is particularly true during these complex times of COVID 19 pandemic. We work with all the operational stakeholders to manage a seamless European airspace, linking together the elements of the European air traffic management system into a single value chain. Focusing on performance of the European network, we partner with the operational stakeholders to enable flights to reach their destination safely, on time, with the least possible impact on environment and in a cost-efficient way. In particular, in these difficult times, we are paving the way for a rapid and agile recovery committed to bring back better aviation.

For more than 27 years, the EUROCONTROL Local Single Sky ImPlementation (LSSIP) process, methodology, tools and documents annually express the commitment of civil and military national organisations (Regulators and National Supervisory Authorities, Air Navigation Service Providers and Airport Operators), and their cooperation towards the implementation of the European ATM Master Plan Level 3, also known as the European Single Sky ImPlementation (ESSIP) process.

The LSSIP documents provide an extensive, consolidated and harmonised picture, for the benefit of the ATM community at large, of how all ECAC States as well as States having a Comprehensive Agreement with EUROCONTROL, and stakeholders concerned, are progressing in planning and deploying all mature elements of the European ATM Master Plan and the various European aviation policies.

In addition, EUROCONTROL is promoting practices to avoid unnecessary duplication of reporting. We are cooperating with the SESAR Deployment Manager, the SESAR Joint Undertaking, the European Defence Agency and NATO to ensure the optimisation of the reporting mechanisms bringing all the processes into a single value chain.

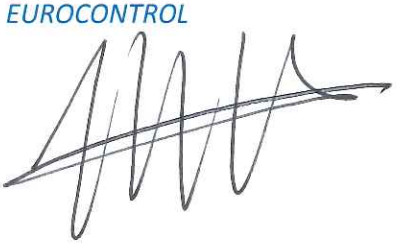
The reliability and quality of the data provided by the national stakeholders allowed, for the sixth consecutive year, the information in the LSSIP documents to constitute the sole source of information for the development of ICAO's Aviation System Block Upgrades (ASBUs) Implementation Monitoring Report in the ICAO EUR Region. EUROCONTROL undertakes this work, on behalf of ICAO, for all 55 ICAO/EUR States in accordance with the Global Air Navigation Plan (GANP).

We believe now is the time to build back better aviation. The exceptional situation we are living in shows the importance of a robust planning and monitoring process for the European ATM implementation in our evolving environment. In preparation of the next cycle of LSSIP documents ("LSSIP2021"), we therefore are working jointly and in close collaboration with the operational stakeholders towards a single Network Manager Planning Process integrating the Network Operations Plan (NOP), the LSSIP and the Operational Excellence Programme (OEP). We are working together with the SESAR Deployment Manager to streamline the reporting processes of LSSIP and PCP/CP1 in order to ensure a single reporting mechanism for all stakeholders.

I would like to thank, once again, all our stakeholders for their engagement and substantial effort spent in contributing to the production of this LSSIP document. This is a proof of commitment to the principles of transparency and partnership, for the benefit of the entire ATM community!

Enjoy the reading!

Iacopo PRISSINOTTI
Director NM – Network Manager
EUROCONTROL



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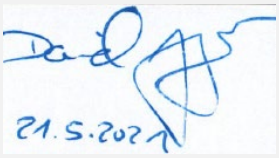
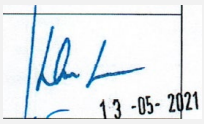
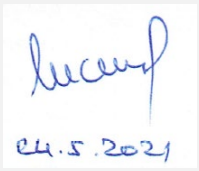
Reference Documents	
LSSIP Documents	https://www.eurocontrol.int/service/local-single-sky-implementation-monitoring
Master Plan Level 3 – Plan Edition 2020	https://www.eurocontrol.int/publication/european-atm-master-plan-implementation-plan-level-3
Master Plan Level 3 – Report Year 2020	https://www.eurocontrol.int/publication/european-atm-master-plan-implementation-report-level-3
European ATM Portal	https://www.atmmasterplan.eu/
STATFOR Forecasts	https://www.eurocontrol.int/statfor
National AIP	http://lis.rlp.cz/ais_data/www_main_control/frm_en_aip.htm
FAB Performance Plan covering RP2 – 2014-2019	Latest FAB CE Performance Plan V2.0 For details contact: Mr Matej Eljon matej.eljon@fab-ce.eu

APPROVAL SHEET

The following authorities have approved all parts of the LSSIP Year 2020 document and the signatures confirm the correctness of the reported information and reflect the commitment to implement the actions laid down in the European ATM Master Plan Level 3 (Implementation View) – Edition 2020.

Stakeholder / Organisation	Name	Position	Signature and date
Civil Aviation Authority (CAA CR)	Mr. David JÁGR	Director Civil Aviation Authority	
Ministry of Transport, Czech Republic	Mr. Zdeněk JELÍNEK	Director of Civil Aviation Department	
Air Navigation Services of the Czech Republic	Mr. Jan KLAS	Director General ANS CR	
Military Authority	Col. Lubomír SITTA	Director of MAA DOMD of MoD	
	Col. David KLEMENT	Director of Development of Air Force Department of the Force Development Division of MoD	
	Col. Petr CHAMRAD	Chief of Aviation Safety Section of the Internal Audit and Inspection Department of MoD	
	Maj. Gen. Petr Mikulenka	Air Force Commander	
Letiště Praha, a. s. (Prague Airport)	Mr. Václav ŘEHOŘ	Chairman of the Board of Directors	
	Mr. Jiří KRAUS	Vice – Chairman of the Board of Directors	

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Executive Summary

National ATM Context

Member State of:

Main national stakeholders:

- Ministry of Transport (MoT) and the Civil Aviation Department (CAD) of the Ministry of Transport;
- The Civil Aviation Authority (CAA) - acts as a National Supervisory Authority (NSA);
- The Air Accidents Investigation Institute (AAII);
- The Institute of Aviation Medicine, Ústav leteckého zdravotnictví (ÚLZ);
- The Ministry of Defence (MoD);
  - The Military Aviation Authority Defence Organisations Management Division of MoD (MAA);
  - The Development of Air Force Department of the Force Development Division of MoD (FDD);
  - The Aviation Safety Section of the Internal Audit and Inspection Department of MoD (IAID)
- The Air Navigation Services of the Czech Republic (ANS CR) - the main ANS provider;
- The Prague Airport, Joint Stock Company - the operator of the major airport Praha-Ruzyně.

Main airport covered by LSSIP: **Praha-Ruzyně** (known as Václav Havel Airport Prague, LKPR).

Traffic and Capacity

Traffic Growth Summer 2020 (May-Oct)	Summer En-Route Delay
	

Czech Republic is part of:

The FAB CE – FAB Central Europe

As for major projects, Free Route implementation into ATM system of ANS CR was completed in February 2021. Numbers of projects in Chapter 3 are listed below:

Number of national projects: 10
Number of FAB projects: 8
Number of multinational projects: 2

Summary of 2020 developments:

A number of implementation objectives have already been completed. During the last LSSIP cycle INF07 (Electronic Terrain and Obstacle Data) was completed as well as AOP12 (Improve Runway and Airfield Safety with CATC Detection and CMAC), ATC15.2 (Extension of AMAN to En-route), FCM04.2 (STAM phase 2) and COM12 (NewPENS).

A new A-SMGCS system upgrade was performed and its operational use was launched on February 9, 2021 at Prague Airport (LKPR). Implementation date of AOM21.2 (Free Route Airspace) is February 25, 2021.

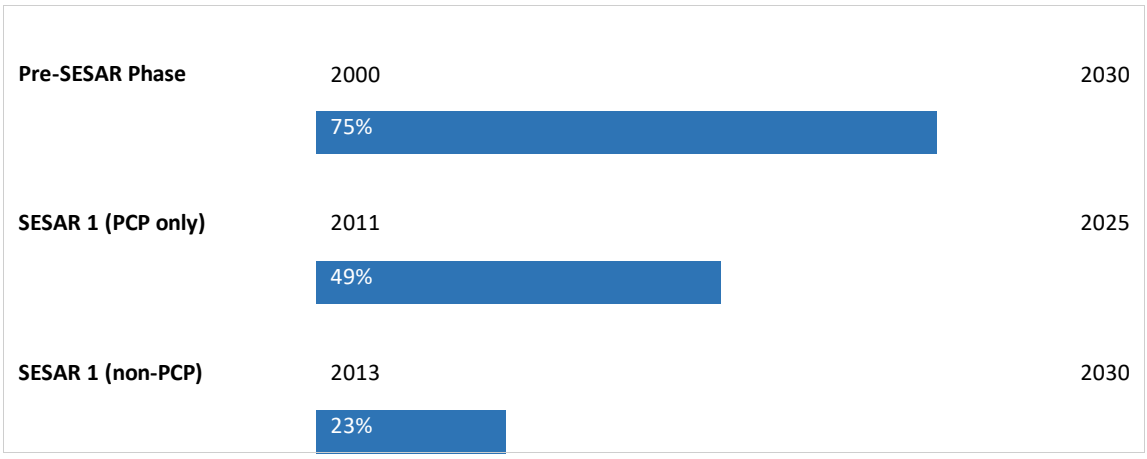
There were only minor changes in organisational structures of the main stakeholders. All are provided in Annex B.

Progress per SESAR Phase

The figure below shows the progress made so far in the implementation of the SESAR baseline (Pre-SESAR and SESAR1 non-PCP) and the PCP elements.

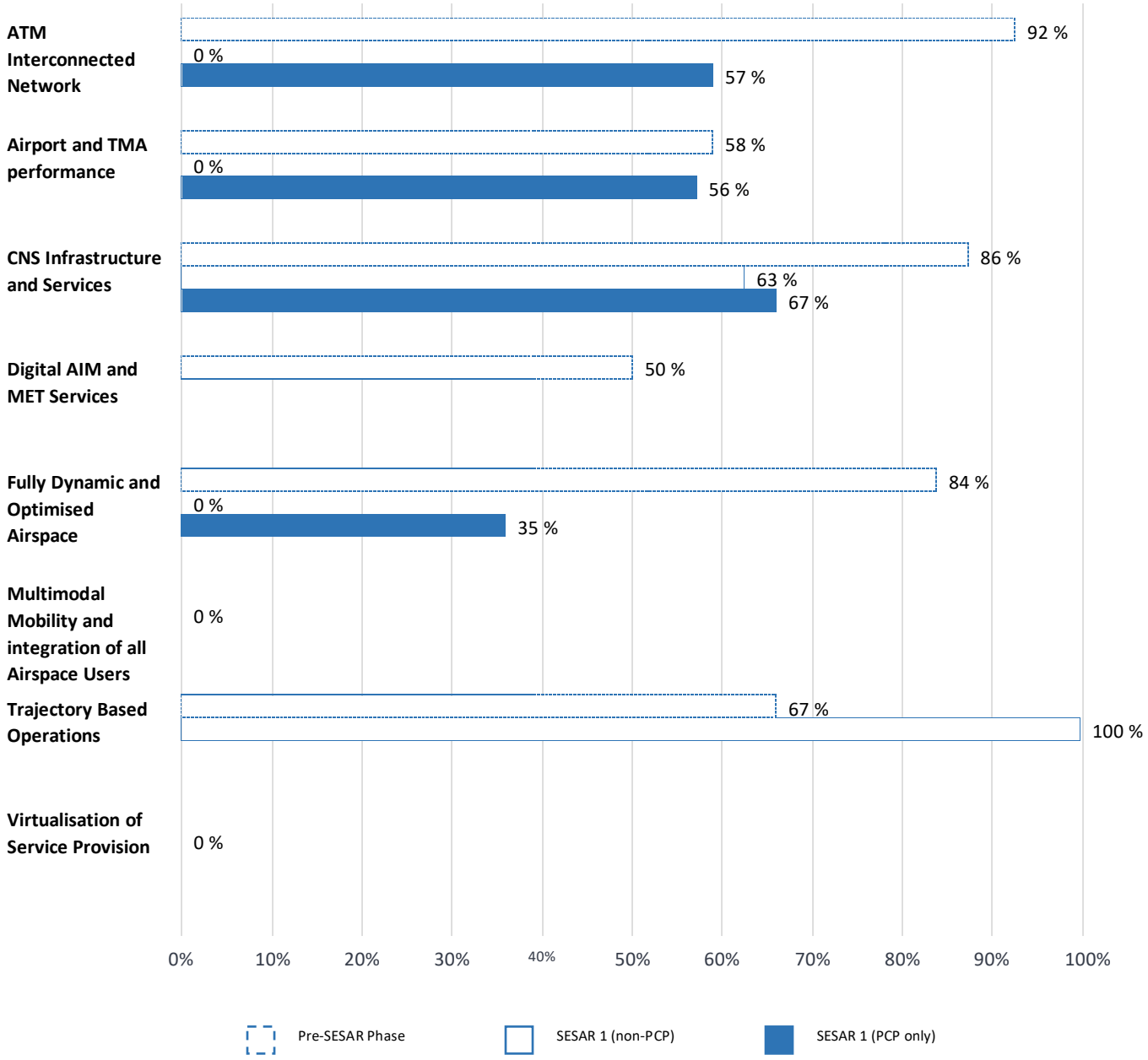
It shows the average implementation progress for all objectives grouped by SESAR Phases, excluding those for which the State is outside the applicability area as defined on a yearly basis in the European ATM Master Plan (Level 3) 2020, i.e. disregarding the declared "NOT APPLICABLE" LSSIP progress status.

The SESAR 1 (non-PCP) progress in the graphics below for this State is based on the following objectives: AOP14, AOP15, AOP16, AOP16, AOP18, ATC02.9, ATC18, ATC19, ATC2O, NAV12 and COM11.2.



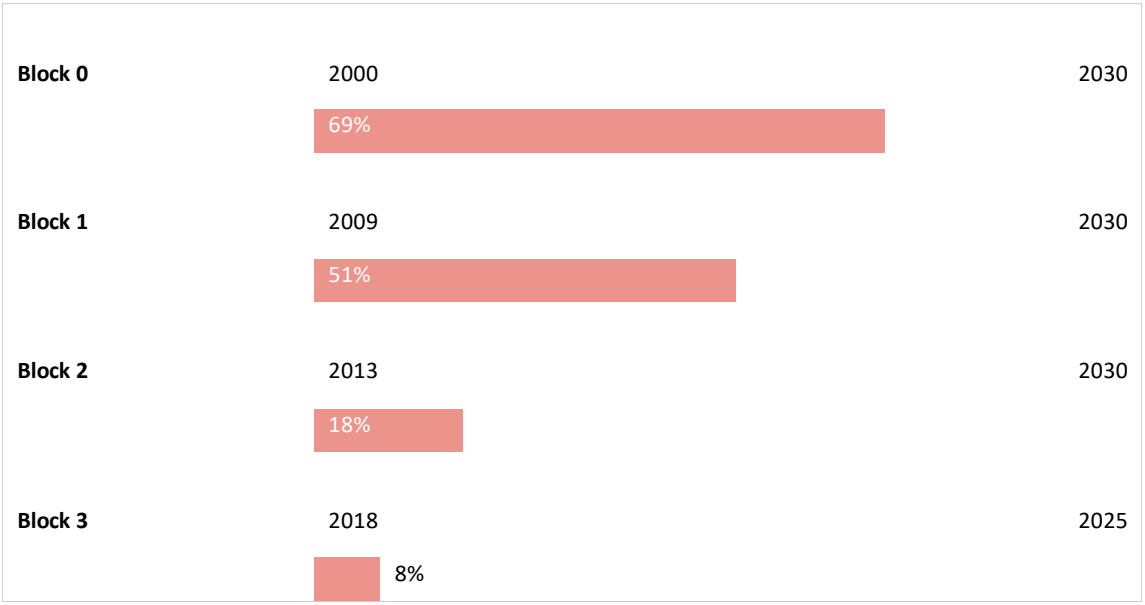
Progress per SESAR Essential Operational Changes and Phase

The figure below shows the progress made so far, per SESAR Essential Operational Changes, in the implementation of the SESAR baseline and the PCP elements. The percentages are calculated as an average, per EOC, of the same objectives as in the previous paragraph.



ICAO ASBUs Progress Implementation

The figure below shows the progress made so far in the implementation of the ICAO ASBUs Blocks. The overall percentage is calculated as an average of the relevant Objectives contributing to each of the relevant ASBUs; this is a summary of the table explained in Chapter 5.3 – ICAO ASBU Implementation Progress.



ATM Deployment Outlook

State Objectives

✓ **Deployed in 2019 - 2020**

- RNAV 1 in TMA Operations
NAV03.1 - 100 % progress
- RNP Approach Procedures to instrument RWY
NAV10 - 100 % progress

By 2021	By 2022	By 2023	By 2024+
- Migrate from AFTN to AMHS COM10 - 34 % progress **- Improve Runway Safety by Preventing Runway Excursions** SAF11 - 23 % progress **- Free Route Airspace** AOM21.2 - 71 % progress	**- Collaborative Flight Planning** FCM03 - 85 % progress **- Electronic Terrain and Obstacle Data (eTOD)** INF07 - 69 % progress **- Ensure Quality of Aeronautical Data and Aeronautical Information** ITY-ADQ - 30 % progress **- ASM Support Tools to Support Advanced FUA (AFUA)** AOM19.1 - 13 % progress **- Ground-Based Safety Nets** ATC02.8 - 67 % progress **- Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring** ATC12.1 - 30 % progress **- Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer** ATC17 - 53 % progress		**- Surveillance Performance and Interoperability** ITY-SPI - 83 % progress **- Voice over Internet Protocol (VoIP) in En-Route** COM11.1 - 67 % progress **- Interactive Rolling NOP** FCM05 - 25 % progress **- Voice over Internet Protocol (VoIP) in Airport/Terminal** COM11.2 - 63 % progress **- Information Exchanges using the SWIM Yellow TI Profile** INF08.1 - 08 % progress

Airport Objectives - Praha Airport

✓ **Deployed in 2019 - 2020** None

By 2021	By 2022	By 2023	By 2024+
- Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) AOP12 - 88 % progress			**- Initial Airport Operations Plan** AOP11 - 09 % progress

Overall situation of Implementation Objectives

Main Objectives	Topic	Progress at the end of 2020	Status	2020	2021	2022	2023	2024	2025	>2025
AOM13.1	Harmonize Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling	100%	Completed							
AOM19.1	ASM Support Tools to Support Advanced FUA (AFUA)	13%	Late			*				
AOM19.2	ASM Management of Real-Time Airspace Data	0%	Not yet planned			*				
AOM19.3	Full Rolling ASM/ATFCM Process and ASM Information Sharing	0%	Not yet planned			*				
AOM19.4	Management of Pre-defined Airspace Configurations	0%	Not yet planned			*				
AOM21.1	Direct Routing	100%	Completed							
AOM21.2	Free Route Airspace	71%	Ongoing			*				
AOP04.1(LKPR)	Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)	100%	Completed		*					
AOP04.2(LKPR)	Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)	100%	Completed		*					
AOP05(LKPR)	Airport Collaborative Decision Making (A-CDM)	100%	Completed		*					
AOP10(LKPR)	Time-Based Separation	0%	Not Applicable					*		
AOP11(LKPR)	Initial Airport Operations Plan	9%	Late		*					
AOP12(LKPR)	Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)	88%	Late		*					
AOP13(LKPR)	Automated Assistance to Controller for Surface Movement Planning and Routing	0%	Not Applicable					*		
AOP14(LKPR)	Remote Tower Services	0%	Not yet planned							2030
AOP16(LKPR)	Guidance assistance through airfield ground lighting	0%	Not yet planned							2030
AOP17(LKPR)	Provision/integration of departure planning information to NMOC	0%	Not Applicable							2030
AOP18(LKPR)	Runway Status Lights (RWSL)	0%	Not yet planned							2030

Main Objectives	Topic	Progress at the end of 2020	Status	2020	2021	2022	2023	2024	2025	>2025
ATC02.2	Implement ground based safety nets - Short Term Conflict Alert (STCA) - level 2 for en-route operations	100%	Completed							
ATC02.8	Ground-Based Safety Nets	67%	Late			*				
ATC02.9	Short Term Conflict Alert (STCA) for TMAs	100%	Completed	*						
ATC07.1(LKPR)	AMAN Tools and Procedures	0%	Not yet planned	*						
ATC12.1	Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring	30%	Late			*				
ATC15.1	Information Exchange with En-route in Support of AMAN	100%	Completed							
ATC15.2	Arrival Management Extended to En-route Airspace	100%	Completed					*		
ATC16	Implement ACAS II compliant with TCAS II change 7.1	100%	Completed							
ATC17	Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer	53%	Late			*				
ATC18	Multi-Sector Planning En-route - 1P2T	0%	Not yet planned							2030
ATC19	Enhanced AMAN-DMAN integration	0%	Not yet planned							2030
ATC20	Enhanced STCA with down-linked parameters via Mode S EHS	100%	Completed							2030
COM10	Migrate from AFTN to AMHS	34%	Late							
COM11.1	Voice over Internet Protocol (VoIP) in En-Route	67%	Late			*				
COM11.2	Voice over Internet Protocol (VoIP) in Airport/Terminal	63%	Late				*			
COM12	New Pan-European Network Service (NewPENS)	100%	Completed						*	
ENV01(LKPR)	Continuous Descent Operations (CDO)	0%	Not yet planned				*			
ENV02(LKPR)	Airport Collaborative Environmental Management	100%	Completed							2030
ENV03(LKPR)	Continuous Climb Operations (CCO)	0%	Not yet planned							2030
FCM01	Implement enhanced tactical flow management services	100%	Completed							
FCM03	Collaborative Flight Planning	85%	Late			*				
FCM04.2	Short Term ATFCM Measures (STAM) - Phase 2	100%	Completed			*				
FCM05	Interactive Rolling NOP	25%	Late			*				
FCM06	Traffic Complexity Assessment	100%	Completed			*				
INF07	Electronic Terrain and Obstacle Data (eTOD)	69%	Late							
INF08.1	Information Exchanges using the SWIM Yellow TI Profile	8%	Ongoing						*	

Main Objectives	Topic	Progress at the end of 2020	Status	2020		2021		2022		2023		2024		2025		>2025
ITY-ACID	Aircraft Identification	100%	Completed	*												
ITY-ADQ	Ensure Quality of Aeronautical Data and Aeronautical Information	30%	Late													
ITY-AGDL	Initial ATC Air-Ground Data Link Services	100%	Completed	*												
ITY-AGVCS2	8,33 kHz Air-Ground Voice Channel Spacing below FL195	100%	Completed		*											
ITY-COTR	Implementation of ground-ground automated co-ordination processes	100%	Completed													
ITY-FMTP	Common Flight Message Transfer Protocol (FMTP)	100%	Completed													
ITY-SPI	Surveillance Performance and Interoperability	83%	Late		*											
NAV03.1	RNAV 1 in TMA Operations	100%	Completed													2030
NAV03.2	RNP 1 in TMA Operations	25%	Not yet planned									*				
NAV10	RNP Approach Procedures to instrument RWY	100%	Completed									*				
NAV12	ATS IFR Routes for Rotorcraft Operations	0%	Not yet planned													2030
SAF11	Improve Runway Safety by Preventing Runway Excursions	23%	Late													

LEGEND:

*	Full Operational Capability (FOC) date
	The Planned Implementation Date as reported in the LSSIP DB for each objective

Introduction

The Local Single Sky ImPlementation (LSSIP) documents, as an integral part of the Master Plan (MP) Level 3 (L3)/LSSIP mechanism, constitute a short/medium term implementation plan containing ECAC States' actions to achieve the Implementation Objectives as set out by the MP Level 3 and to improve the performance of their national ATM System. This LSSIP document describes the situation in the State at the end of December 2020, together with plans for the next years.

Chapter 1 provides an overview of the ATM institutional arrangements within the State, the membership of the State in various international organisations, the organisational structure of the main ATM players - civil and military - and their responsibilities under the national legislation. In addition, it gives an overview of the Airspace Organisation and Classification, the ATC Units and the ATM systems operated by the main ANSP;

Chapter 2 provides a comprehensive picture of the situation of Air Traffic, Capacity and ATFM Delay per each ACC in the State. It shows the evolution of Air Traffic and Delay in the last five years and the forecast for the next five years. It also presents the planned projects assumed to offer the required capacity, taking into account the current aviation situation caused by the COVID19 crisis;

Chapter 3 provides the main Implementation Projects (at national, FAB and multinational level) which contribute directly to the implementation of the MP Operational Improvements and/or Enablers and Implementation Objectives. The Level 1 document covers a high-level list of the projects showing the applicable links. All other details like description, timescale, progress made and expected contribution to the ATM Key Performance Areas provided by the State per each project are available in the Level 2 document;

Chapter 4 deals with other cooperation activities beyond Implementation Projects. It provides an overview of the FAB cooperation, as well as all other multinational initiatives, which are out of the FAB scope. The content of this chapter generally is developed and agreed in close cooperation between the States concerned;

Chapter 5 contains aggregated information at State level covering the overall level of implementation, implementation per SESAR Essential Operational Change and implementation of ICAO ASBUs. In addition, it provides the high-level information on progress and plans of each Implementation Objective. The information for each Implementation Objective is presented in boxes giving a summary of the progress and plans of implementation for each Stakeholder. The conventions used are presented at the beginning of the section.

The Level 1 document is completed with a separate document called LSSIP Level 2. This document consists of a set of tables organised in line with the list of Implementation Objectives. Each table contains all the actions planned by the four national stakeholders (REG, ASP, MIL and APO) to achieve their respective Stakeholder Lines of Action (SLoAs) as established in the European ATM Master Plan L3 Implementation Plan Edition 2020. In addition, it covers a detailed description of the Implementation Projects for the State as extracted from the LSSIP DataBase.

The information contained in Chapter 5 – Implementation Objectives Progress is deemed sufficient to satisfy State reporting requirements towards ICAO in relation to ASBU (Aviation System Block Upgrades) monitoring.

1. National ATM Environment

1.1. Geographical Scope

International Membership

The Czech Republic is a Member of the following international organisations in the field of ATM:

Organisation		Since
ECAC	✓	1993 (1991*)
EUROCONTROL	✓	1996
European Union	✓	2004
EASA	✓	2004
ICAO	✓	1993 (1944*)
NATO	✓	1999
ITU	✓	1993 (1918*)
EDA	✓	2004

Geographical description of the FIR(s)

The geographical scope of this document addresses the Czech Republic FIR Praha. The Czech Republic FIR is surrounded by FIRs of 4 States, namely Germany UIR Rhein and FIR München; Poland with FIR Warszawa, the Slovak Republic with FIR Bratislava and Austria with FIR Wien (see Figure 1).

Vertical limits of FIR Praha are ground level and FL 660.

The Division Flight Level (DFL) separating upper from lower ATS airspace is FL 245.

The controlled airspace of FIR Praha comprises:

- 4 Control Areas (CTA), CTA Praha from 1000ft AGL to FL660, CTA Karlovy Vary, CTA Brno, CTA Ostrava, from 1000ft AGL to FL125, with the exception of TMA / CTR and MTMA / MCTR;
- TMAs / CTRs;
- MTMAs / MCTRs

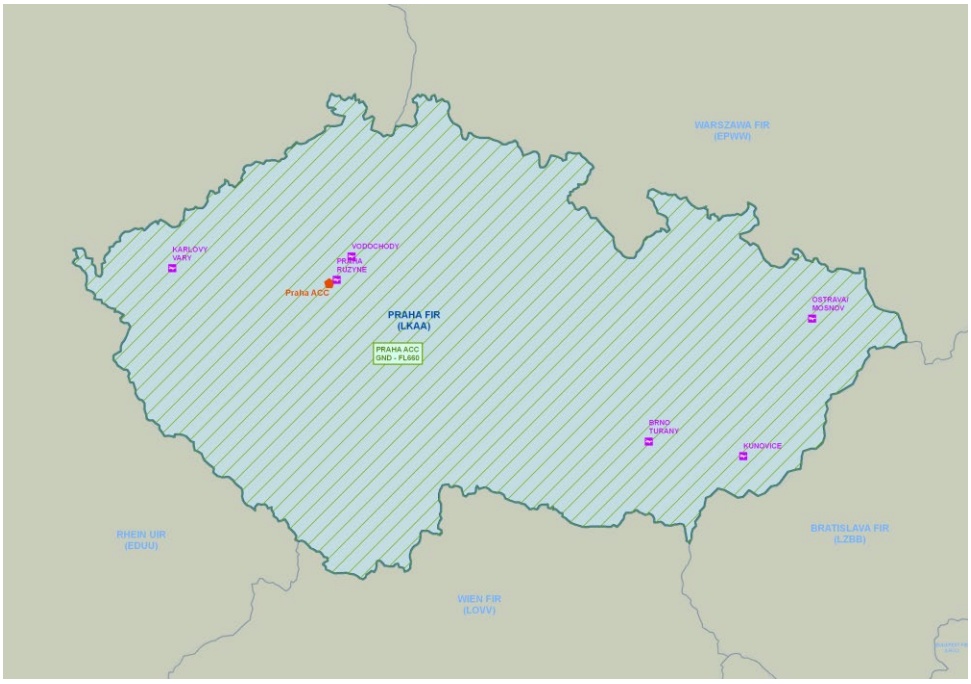


Figure 1: Praha FIR and neighbouring FIR's

Airspace Classification and Organisation

The Czech Republic is following the ICAO classification. The Figure below shows the classification of Airspace of the FIR Praha and CTA Praha. The Czech Republic has implemented ICAO Class C above FL095 to FL660. See Figure 2

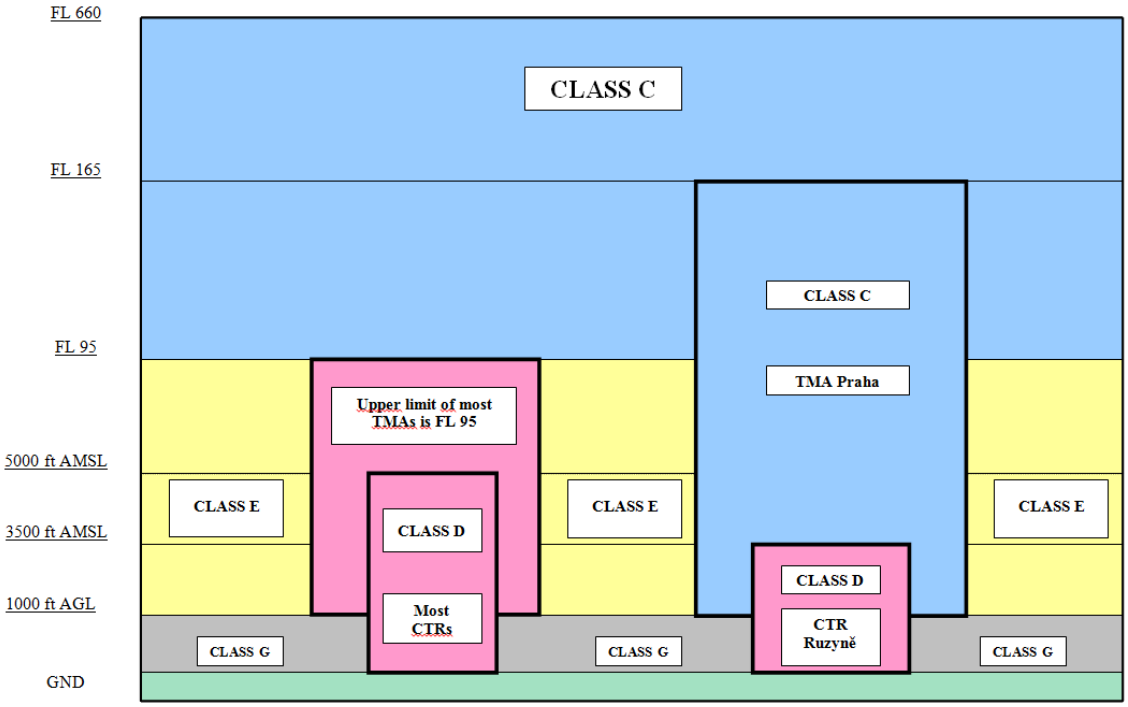


Figure 2: FIR Praha airspace classification

ATC Units

The ATC units in the Czech Republic airspace, which are of concern to this LSSIP are the following:

ATC Unit	Number of sectors		Associated FIR(s)	Remarks
	En-route	TMA		
Praha ACC	10/12*	-	FIR Praha	MIL ACC terminated, provision of en-route services was transferred to ANS CR since May 2014
Praha APP	-	4		Praha-Ruzyně
Brno APP	1	1		Brno-Tuřany
Karlovy Vary APP	1	1		Karlovy Vary
Ostrava APP	1	1		Ostrava-Mošnov
MIL APP	-	4		Čáslav, Náměšť, Kbely, Pardubice

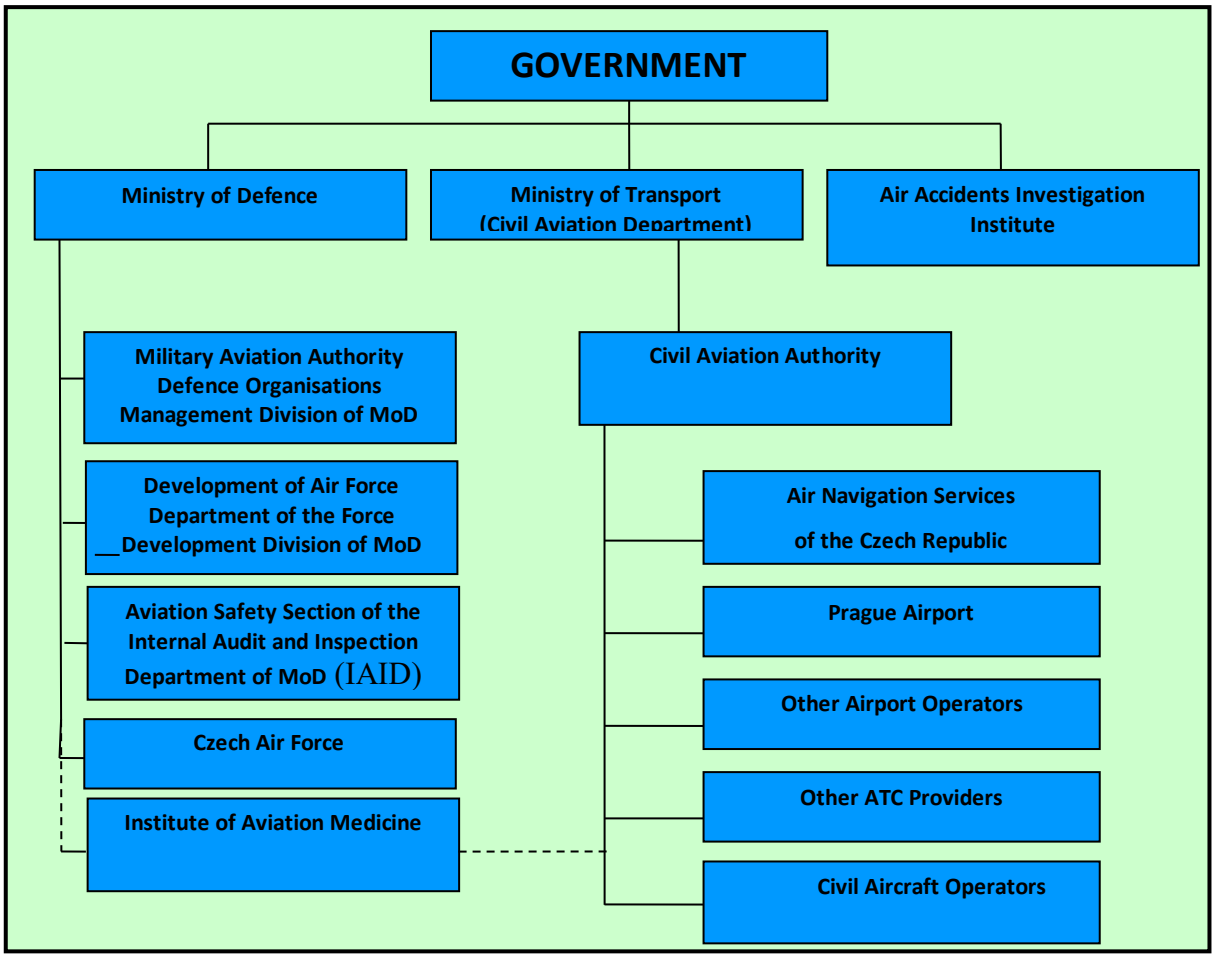
* 10 sectors opened during peaks in summer of previous years; 12 sectors are technically available in ACC Prague.

1.2. National Stakeholders

The main National Stakeholders involved in ATM in the Czech Republic are the following:

- The Ministry of Transport (MoT) and the Civil Aviation Department (CAD) of the Ministry of Transport;
- The Civil Aviation Authority (CAA) which acts as a National Supervisory Authority (NSA);
- The Air Accidents Investigation Institute (AAII);
- The Institute of Aviation Medicine, Ústav leteckého zdravotnictví (ÚLZ) is an independent State Agency;
- The Ministry of Defence (MoD);
    - The Military Aviation Authority Defence Organisations Management Division of MoD (MAA);
    - The Development of Air Force Department of the Force Development Division of MoD (FDD);
    - The Aviation Safety Section of the Internal Audit and Inspection Department of MoD (IAID)
- The Czech Air Force;
- The Air Navigation Services of the Czech Republic (ANS CR) is the main ANS provider;
- The Prague Airport, Joint Stock Company is the operator of the major airport Praha-Ruzyně.

Their activities are detailed in the following subchapters and their relationships are shown in the chart below.



Civil Regulator(s)

General Information

Civil Aviation in the Czech Republic is the responsibility of the Ministry of Transport (MoT).

An organisational chart of the Czech Republic Aviation structure, the CAA, the AAII, the ANS CR and Prague Airport is in the Annexes.

The different national entities having regulatory responsibilities in ATM are summarised in the table below.

Activity in ATM:	Organisation responsible	Legal Basis
Rule-making	Ministry of Transport	Civil Aviation Act no. 49/1997 Coll.
Safety Oversight	NSA (CAA)	Civil Aviation Act no. 49/1997 Coll.
Enforcement actions in case of non-compliance with safety regulatory requirements	NSA (CAA)	Civil Aviation Act no. 49/1997 Coll.
Airspace	NSA (CAA) and MoD (close cooperation with approval of both organisations)	Civil Aviation Act no. 49/1997 Coll.
Economic	Ministry of Transport (MoT) acts as an Economic Regulator in the field of unit rates.	Civil Aviation Act no. 49/1997 Coll.
Environment	Ministry of Health / Regional Hygienic Stations Ministry of Environment	Act No. 2/1969 Coll. Act No. 258/ 2000 Coll. Act No. 173/1989 Coll.
Security	CAA/Ministry of Transport (MoT) (CAA fully acts as a responsible authority according to EU Reg. 300/2008; MoT acts as a policy maker and holds chairmanships in Intragovernmental Commission for Aviation Security)	Civil Aviation Act no. 49/1997 Coll.
Accident investigation	Air Accidents Investigation Institute (AAII) (AAII fully acts as the national competent authority pursuant to the Article 6 EU Reg. 376/2014.)	EU Reg. No 996/2010. Civil Aviation Act no. 49/1997 Coll.

CAA

The National Supervisory Authority (NSA), as per SES Service Provision Regulation, is the CAA. The CAA is institutionally separated from the ANSP and has been nominated by the Czech Aviation Act No. 49/1997 Coll. as the National Supervisory Authority (NSA).

Annual Report published:	Y	CAA Annual Reports (in Czech only): https://www.caa.cz/urad-pro-civilni-letectvi/vyrocni-zpravy/

Website: www.caa.cz

The organisational chart of the CAA is in the Annex.

Air Navigation Service Provider(s)

Service provided

Governance:	State enterprise	Ownership:	100% Ministry of Transport
Services provided	**Y/N**	**Comment**	
ATC en-route	Y		
ATC approach	Y	Partly; APP Service is provided in TMA Praha, Ostrava-Mosnov, Brno-Turany and Karlovy Vary	
ATC Aerodrome(s)	Y	Partly; TWR service is provided at Praha-Ruzyně, Ostrava-Mosnov, Brno-Turany and Karlovy Vary	
AIS	Y	Only civil side	
CNS	Y		
MET	N	MET service is provided by the Czech Hydrometeorological Institute re-certified in 4/2017 by NSA (valid indefinitely)	
ATCO training	Y		
Others	N		
Additional information:			
Provision of services in other State(s):	Y	ATC services are provided for small parts of Polish, German and Austrian airspace around states boundaries. See AIP CR accessible at http://lis.rlp.cz/ais_data/www_main_control/frm_en_aip.htm	
Annual Report published:	Y	http://www.rlp.cz/en/company/performance/Pages/reports.aspx	

Website: www.ans.cz

The organisation chart is in the Annex.

ATC Systems in use

Main ANSP part of any technology alliance[1]	N	-

FDPS

Specify the manufacturer of the ATC system currently in use:	Thales – EUROCAT 2000 system (main system on EC position) CS SOFT – ESUP (main FDP system) ICC – IDP/WALDO (main system on PC position and backup system for EC, main system for TCC)
Upgrade[2] of the ATC system is performed or planned?	Regular updates twice per year
Replacement of the ATC system by the new one is planned?	Public tender for the new system finished in 2014. Operation of the new system planned for 2022.
ATC Unit	ACC Praha, APP Praha, TCC, TWR of regional airports

SDPS

Specify the manufacturer of the ATC system currently in use:	EUROCONTROL – ARTAS (main SDPS)
Upgrade of the ATC system is performed or planned?	Last hardware upgrade performed in 2018, Software upgrades are performed regularly based on a new SW version provided by EUROCONTROL.
Replacement of the ATC system by the new one is planned?	N/A
ATC Unit	ACC Praha, APP Praha

Airports

General information

The major international airport of the Czech Republic is Praha-Ruzyně Airport operated by Prague Airport, (Letiště Praha, a. s.) a joint stock company.

Other smaller airports such as Brno-Tuřany, Ostrava-Mošnov and Karlovy Vary have been progressively transferred to the respective regional governments.

Brno-Tuřany Airport was leased to a private operator Letiště Brno, a.s. on 1st July 2002, followed by Ostrava-Mošnov Airport (leased to Letiště Ostrava, a.s.) and Karlovy Vary (leased to Letiště Karlovy Vary, s.r.o.) on 1st July 2004.

There are two industry airports, AERO-Vodochody Plc in Vodochody (airport Prague Vodochody) and Aircraft Industries Plc in Kunovice.

There is one military airport with civil traffic operations in Pardubice.

[1] Technology alliance is an alliance with another service provider for joint procurement of technology from a particular supplier (e.g. COOPANS alliance)

[2] Upgrade is defined as any modification that changes the operational characteristics of the system (SES Framework Regulation 549/2004, Article 2 (40))

Airport(s) covered by the LSSIP

Referring to the List of Airports in the European ATM Master Plan Level 3 Implementation Plan Edition 2020 – Annex 2, it is up to the individual State to decide which additional airports will be reported through LSSIP for those Objectives.

Therefore, the following airport is covered in this LSSIP: **Praha-Ruzyně** (known as Václav Havel Airport Prague, LKPR).

The EUROCONTROL Public Airport Corner also provides information for the following airport(s):

https://ext.eurocontrol.int/airport_corner_public/LKPR

Military Authorities

The Military Authorities involved in ATM in the Czech Republic are composed of:

- The Military Aviation Authority Defence Organisations Management Division of MoD (MAA);
- The Development of Air Force Department of the Force Development Division of MoD (FDD);
- The Aviation Safety Section of the Internal Audit and Inspection Department of MoD (IAID)
- The Air Force Headquarters.

Their regulatory, service provision and user role in ATM are detailed below.

An organisational chart of the Czech Republic Aviation structure is in the Annex

Regulatory role

Regulatory framework and rule making

OAT		GAT	
OAT and provision of service for OAT governed by national legal provisions?	Y	Provision of service for GAT by the Military governed by national legal provisions?	Y
Level of such legal provision: State Law and Ministerial Decree		Level of such legal provision: State Law and Ministerial Decree	
Authority signing such legal provision: the President of the CR, Prime Minister, Chairman of Parliament and Minister of Defence		Authority signing such legal provision: the President of the CR, Prime Minister, Chairman Parliament and Minister of Defence	
These provisions cover:		These provisions cover:	
Rules of the Air for OAT	Y		
Organisation of military ATS for OAT	Y	Organisation of military ATS for GAT	Y
OAT/GAT Co-ordination	Y	OAT/GAT Co-ordination	Y
ATCO Training	Y	ATCO Training	Y
ATCO Licensing	Y	ATCO Licensing	Y
ANSP Certification	Y	ANSP Certification	Y
ANSP Supervision	Y	ANSP Supervision	Y
Aircrew Training	Y		
Aircrew Licensing	Y		
Additional Information: -		Additional Information: Special agreements between MoD and MoT exist that cover the responsibilities; ongoing process	

Means used to inform airspace users (other than military) about these provisions:		Means used to inform airspace users (other than military) about these provisions:	
National AIP	Y	National AIP	Y
National Military AIP	Y	National Military AIP	Y
EUROCONTROL eAIP	N	EUROCONTROL eAIP	N
Other: CENOR FLIP (Central and Northern Region Flight Information Publication)	Y	Other:	N

Oversight

OAT	GAT
National oversight body for OAT: MAA, IAID, Czech Air Force Headquarters	NSA (as per SES Reg. 550/2004) for GAT services provided by the military: MAA
Additional information: None	Additional information: MoD is an oversight body according to Civil aviation act.

Service Provision role

OAT			GAT	
Services Provided:			Services Provided:	
En-Route	Y	MIL (limited, GCI only)*	En-Route	N
Approach/TMA	Y	MIL ANSP (MAPPs)	Approach/TMA	Y
Airfield/TWR/GND	Y	MIL ANSP (MTWR)	Airfield/TWR/GND	Y
AIS	Y	MIL	AIS	Y
MET	Y	MIL	MET	Y
SAR	Y	Integrated civil military	SAR	Y
TSA/TRA monitoring	Y		FIS	Y
Other:	-		Other:	-
Additional Information: Tactical co-ordination with Air Defence (AD) unit * GCI - Ground Control Intercept unit			Additional Information: Above information are concerned of military services provided basically for State aircraft, in specific cases (joint used airports, etc.) also for civil traffic. FIS is provided by AD ATC unit only, no specific working position is established.	

Military ANSP providing GAT services SES certified?	N	If YES, since:	-	Duration of the Certificate:	-
Certificate issued by:	-		If NO, is this fact reported to the EC in accordance with SES regulations?		Y
Additional Information: None					

User role

IFR inside controlled airspace, Military aircraft can fly?	OAT only		GAT only		Both OAT and GAT	Y

If Military fly OAT-IFR inside controlled airspace, specify the available options:			
Free Routing	Y	Within specific corridors only	N
Within the regular (GAT) national route network	N	Under radar control	Y
Within a special OAT route system	N	Under radar advisory service	N

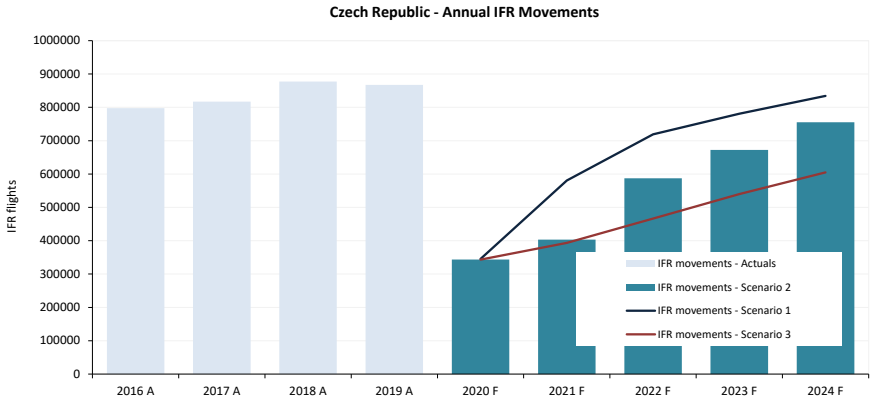
If Military fly GAT-IFR inside controlled airspace, specify existing special arrangements:								
No special arrangements				N	Exemption from Route Charges			N
Exemption from flow and capacity (ATFCM) measures				Y	Provision of ATC in UHF			Y
CNS exemptions:	RVSM	Y	8.33	Y	Mode S	Y	ACAS	Y
Others:	Above mentioned CNS exemptions are applied case by case to state aircraft when requested in the flight plan.							

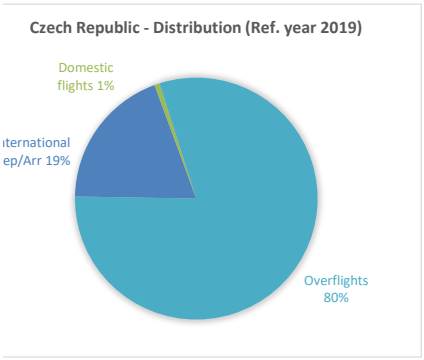
Flexible Use of Airspace (FUA)

Military in CZ applies FUA requirements as specified in the Regulation No 2150/2005: Y
FUA Level 1 implemented: Y
FUA Level 2 implemented: Y
FUA Level 3 implemented: Y

2. Traffic and Capacity

2.1. Evolution of traffic in Czech Republic





A = Actual

F = Forecast

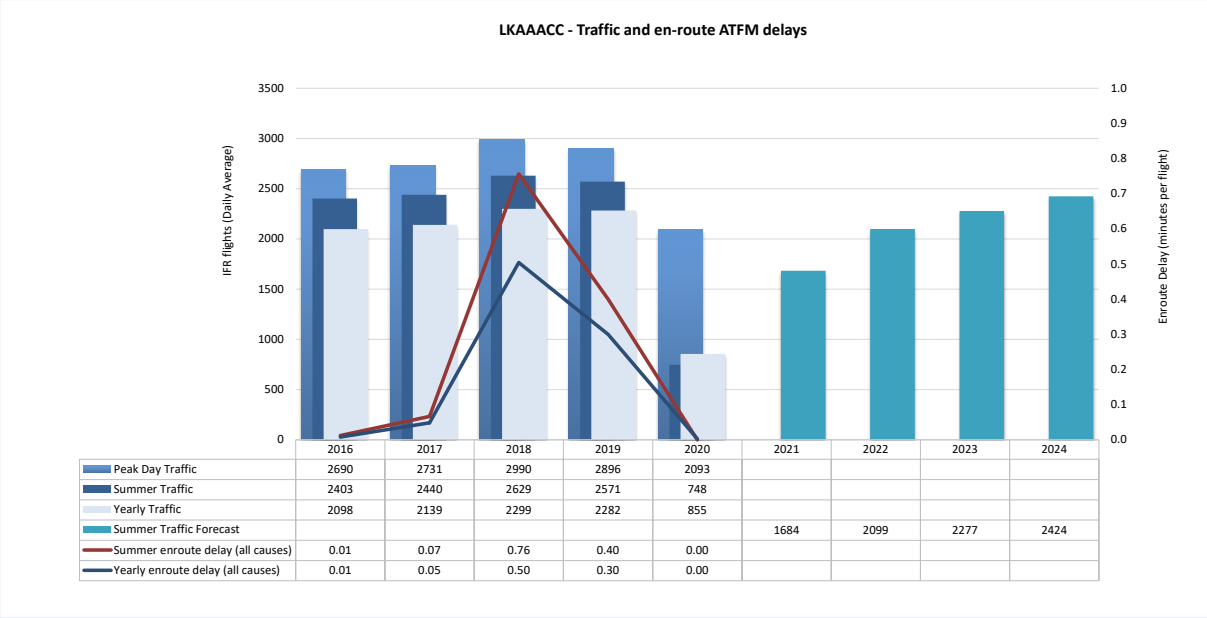
EUROCONTROL Five-Year Forecast 2020-2024									
IFR flights yearly growth		2017 A	2018 A	2019 A	2020 F	2021 F	2022 F	2023 F	2024 F
Czech Republic	Sc1				-60.1%	68.0%	23.8%	8.6%	6.8%
	Sc2	2.4%	7.4%	-1.1%	-60.4%	17.2%	45.7%	14.5%	12.3%
	Sc3				-60.4%	14.6%	18.6%	15.7%	12.1%
ECAC	Sc1				-55.1%	61.9%	21.9%	8.9%	6.8%
	Sc2	4.0%	3.8%	0.8%	-56.4%	16.6%	41.9%	14.1%	12.2%
	Sc3				-56.6%	14.5%	17.5%	14.8%	11.6%

2020

Traffic in Czech Republic decreased by 63% in 2020 compared to 2019.

2.2.PRAGUE ACC

Traffic and en-route ATFM delays 2016-2024



	2016	2017	2018	2019	2020	2021	2022	2023	2024
Peak Day Traffic	2690	2731	2990	2896	2093				
Summer Traffic	2403	2440	2629	2571	748				
Yearly Traffic	2098	2139	2299	2282	855				
Summer Traffic Forecast						1684	2099	2277	2424
Summer enroute delay (all causes)	0.01	0.07	0.76	0.40	0.00				
Yearly enroute delay (all causes)	0.01	0.05	0.50	0.30	0.00				

2020 performance

Praha ACC	Traffic evolution (2020 vs 2019)	En-route Delay (min. per flight)
	Actual Traffic	All reasons
Year	-63%	0.00
Summer	-71%	0.00

Summer 2020 performance assessment
The average delay per flight was zero in Summer 2020.

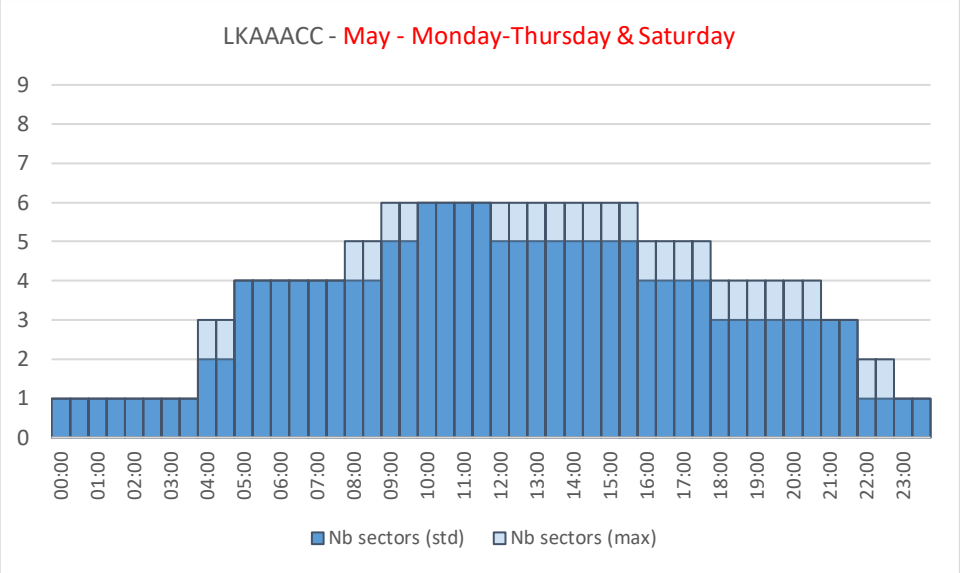
Operational actions	Achieved	Comments
ASM tool (equivalent to LARA)	No	Postponed due to cut of investment
Additional controllers	Yes	
Adaptation of sector opening times depending on available staff	Yes	
Centralisation of regional APPs within the ATC Optimization project (including airspace optimisation)	Ongoing	

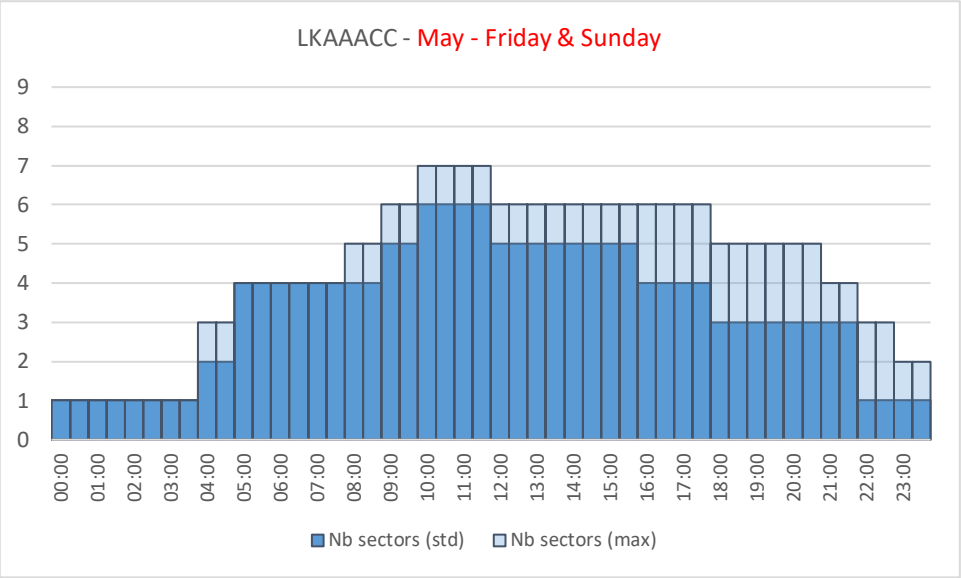
Planning Period – Summer 2021

2021 Summer Capacity Plan	
Free Route Airspace	Full FRA
Airspace Management Advanced FUA	
Airport & TMA Network Integration	
Cooperative Traffic Management	
Airspace	
Procedures	
Staffing	Additional controllers
Technical	
Capacity	Adaptation of sector opening times
Significant Events	Centralisation of regional APPs within the ATC Optimization project (including airspace optimisation)
	Reconstruction of the OPS room and implementation of the new ATM system
	Training for the new system (as from September 2021)
Additional information	Moratorium for any changes as from Spring 2021 because of the introduction of TopSky early in 2022

The charts below are valid for the following reference periods:

- **May**: 17 to 23 May 2021
- **June**: 14 to 20 June 2021
- **July**: 19 to 25 July 2021
- **August**: 16 to 22 August 2021
- **September**: 13 to 19 September 2021
- **October**: 18 to 24 October 2021




LKAAACC - May - Friday & Sunday
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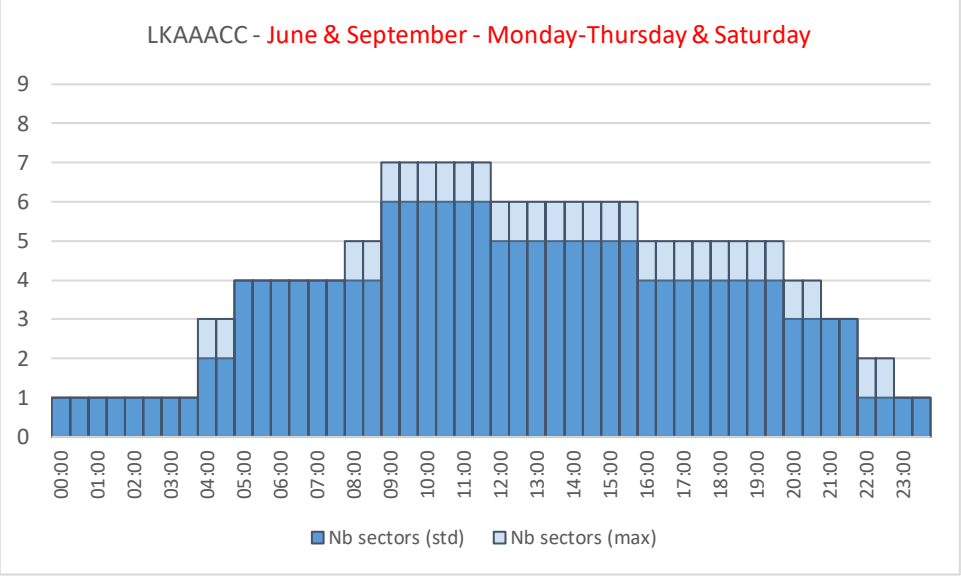
LKAAACC - June & September - Monday-Thursday & Saturday
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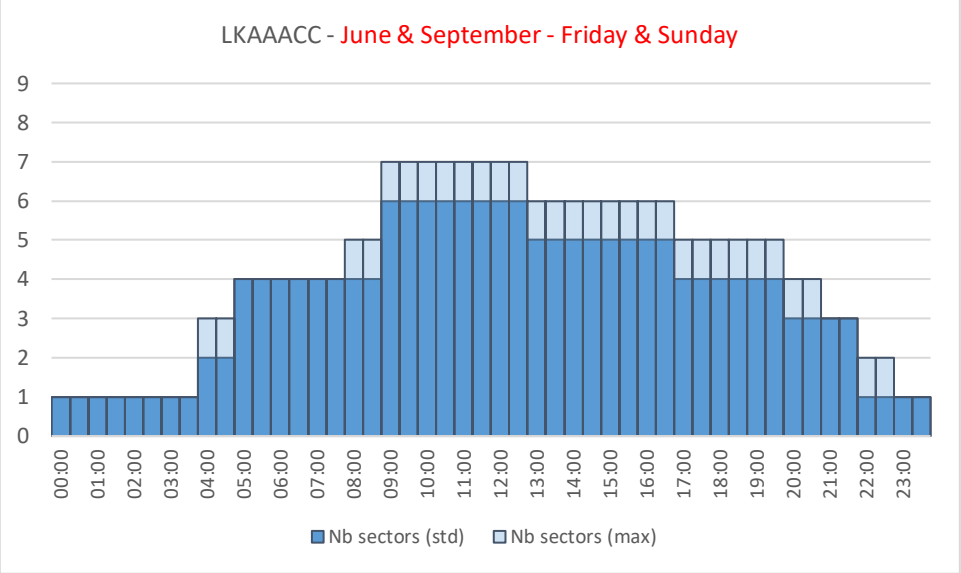
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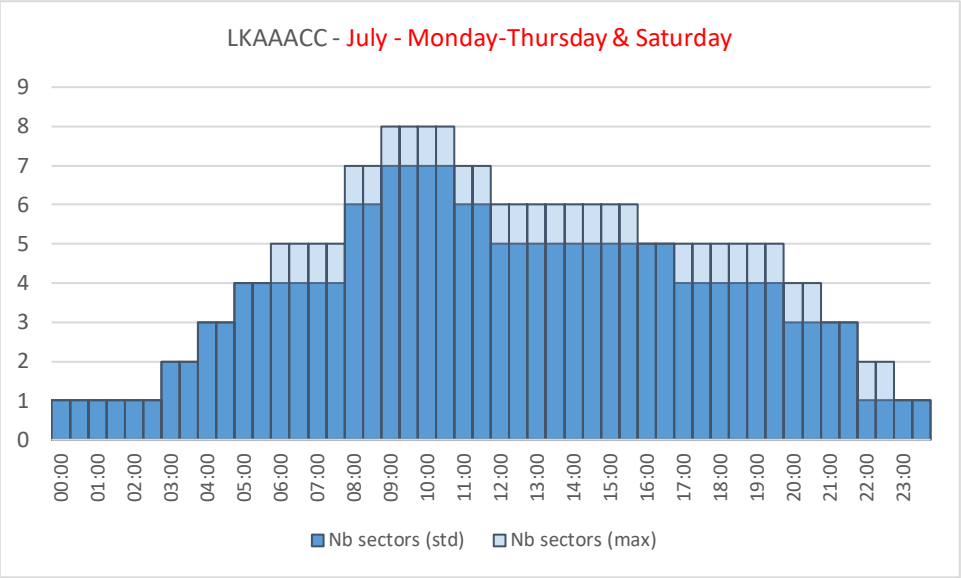
LKAAACC - July - Monday-Thursday & Saturday
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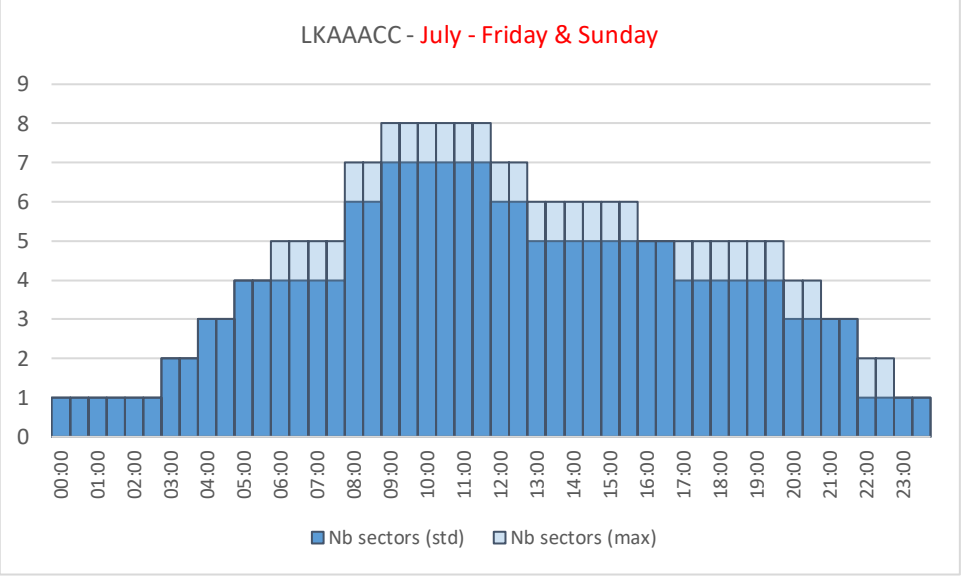
LKAAACC - July - Friday & Sunday
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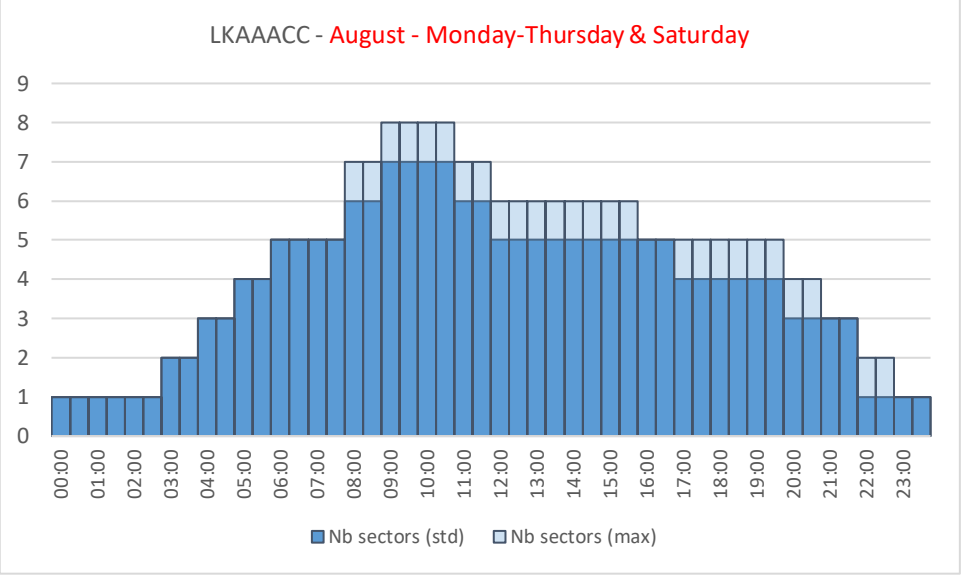
LKAAACC - August - Monday-Thursday & Saturday
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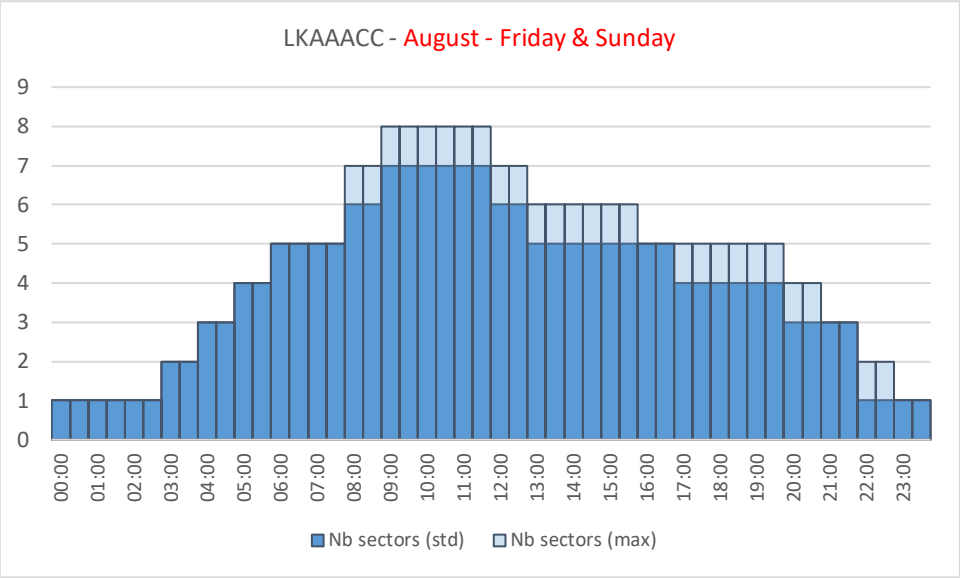
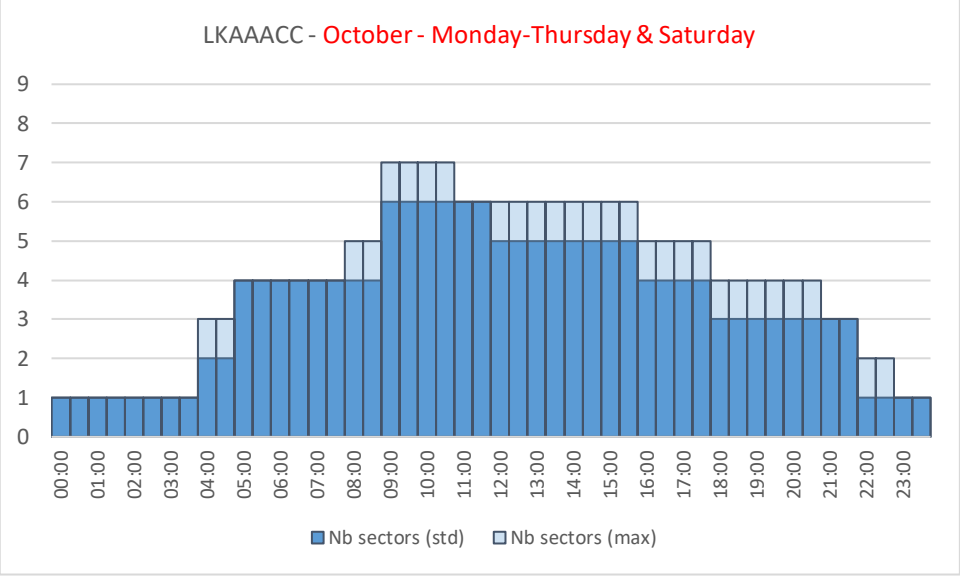
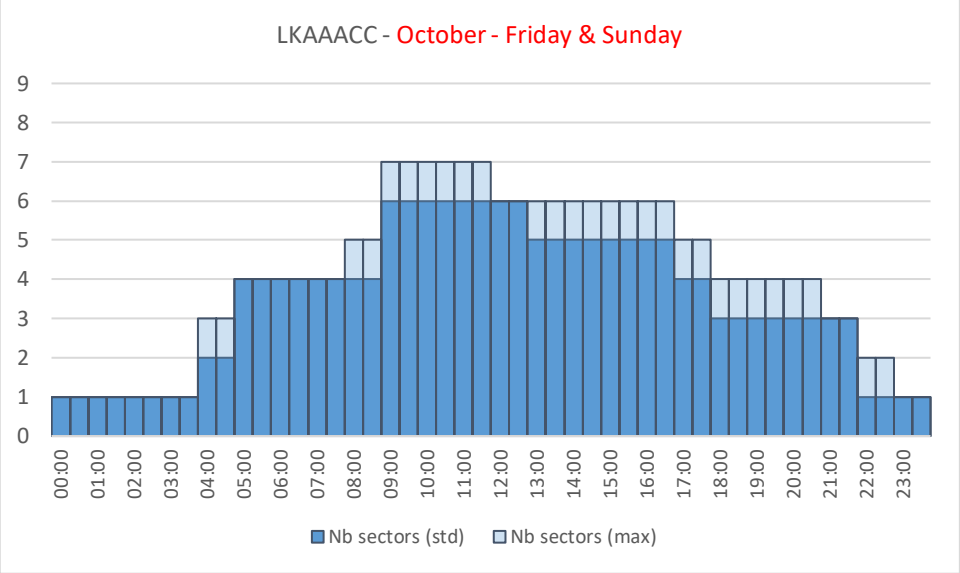






Summer 2021 Outlook
No capacity issues are foreseen for Praha ACC in Summer 2021.

3. Implementation Projects

The tables below presents the high-level information about the main projects currently ongoing in Czech Republic. The details of each project are available in Chapter 2 of the Level 2 - Detailed Implementation Status document.

3.1. National projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
AOP / APOC	Prague Airport (CZ)	-	-	-
Flexible ASM and Free Route (2015_239_AF3)	ASP ANS CR (CZ)	01/03/2016 - 31/12/2021	Ongoing	L3: AOM21.2 DP: 2015_239_AF3
Free Route implementation into ATM system of ANS CR (2015_242_AF3)	ASP ANS CR (CZ)	01/03/2016 – 25/02/2021	Completed	L3: AOM21.2 DP: 2015_242_AF3
Meteorological Information Exchange Service (2015_241_AF5)	ASP ANS CR (CZ)	01/01/2020 - 31/12/2024	-	L3: INF08.1 DP: 2015_241_AF5
NEOPTERYX - the new DPS system for ACC/APP Praha	ASP ANS CR (CZ)	Start 2010 Finish 2022	Ongoing	-
RET J	Prague Airport (CZ)	Start 2025, Finish 2025	Preparation phase	-
RET Y	Prague Airport (CZ)	Start 2025, Finish 2025	Preparation phase	-
RWY 06R/24L	Prague Airport (CZ)	Start: 2025 Finish: 2028	Preparatory phase. The EIA process is completed.	-
Traffic Complexity Tools (2015_240_AF4)	ASP ANS CR (CZ)	15/02/2016 - 31/12/2019	Traffic Complexity module was implemented in FDP system in 2018.	L3: FCM06, INF08.1 DP: 2015_240_AF4
VoIP	ASP ANS CR (CZ), CZ Air Force (CZ), FDD (CZ)	Start 2007 Finish 2024	Ongoing	L3: COM11.1

3.2. FAB projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
ADS-B Deployment	ASP ANS CR (CZ), Austrocontrol (AT), CCL Service Provider (HR), HungaroControl (HU), Slovenia Control (SI)	Start: June 2019, End: January 2021	Ongoing	-
Airspace Task Force	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Start: 10.04.2019, End: 31.12.2021	Ongoing	L3: AOM21.2
Common CNS Infrastructure Planning	ASP ANS CR (CZ), Austrocontrol (AT), Civil Aviation Agency (CAA) (SI), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK)	Start: April 2020, End: January 2021	Ongoing	-
DEVOPS: FABCE Development of Operational Performance and ATM Strategies (previously Project 1) (DEVOPS)	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Start 3.1.2011, End: Ongoing	FAB CE FRA Study was completed in 2017. Other activities above are ongoing.	L3: AOM21.2 DP: N/A but included in DP16 under '102AF3 Free route airspace from the Black Forest to the Black Sea' RP2 PP: FAB CE FRA Project (described under NSP actions 'FAB CE Airspace and route structure planning' and 'Free Route Airspace')
Datalink monitoring	ASP ANS CR (CZ), CCL Service Provider (HR), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK)	Start: June 2019, End: January 2021	-	-

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
FAB CE Contingency Readiness - Phase II	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Start: 01.01.2019, End: 31.12.2021	Ongoing	-
Navigation infrastructure optimization project	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Start: April 2018, End: June 2020	Completed	-
SSR Frequency monitoring	ASP ANS CR (CZ), Austrocontrol (AT), CCL Service Provider (HR), Civil Aviation Agency (CAA) (SI), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK)	Start: June 2019, End: January 2021	Ongoing	-

3.3. Multinational projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
AMAN LOWW initial	ASP ANS CR (CZ), Austrocontrol (AT), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK)	Start: 19.2.2016, End: 31.12.2020	Ongoing	L3: ATC15.1, ATC07.1 DP: 2015_234_AF1 AMAN LOWW initial RP2 PP: Various projects covering individual ANSPs' requirements (e.g. covered under DPS ATM Services for Austria)
Extended AMAN in Czech Airspace (2015_196_AF1_B)	ASP ANS CR (CZ), DSNA (FR), LVNL - Luchtverkeersleiding Nederland (NL), MUAC ANSP (MAS), SKEYES (BE), Skyguide (CH)	15/02/2016 - 31/12/2020	-	DP: 2015_196_AF1_B

4. Cooperation activities

4.1. FAB Co-ordination

Having signed and ratified the Agreement on the Establishment of Functional Airspace Block Central Europe, Austria, Bosnia and Herzegovina, Croatia, the Czech Republic, Hungary, Slovakia and Slovenia are part of FAB CE.

The FAB CE States agreed on establishment of the following permanent bodies - the FAB CE Council, NSA Coordination Committee and Joint Civil-Military Airspace Coordination Committee. The FAB CE Council can also establish other bodies necessary for the implementation, operation and further development of the FAB CE Programme. At the ANSP level, the FAB CE is directed and steered by the CEO Committee and Steering Committee. Specialised SubCommittees have been established for operational, technical, safety, financial, HR and legal domains.

The air navigation service providers of the FAB CE countries established a joint company **FABCE Aviation Services, Ltd** (FCE) already in 2014 and the company is responsible for the professional management of various regional air navigation projects. The establishment of this joint venture is not only effectively aiming at the progress of the FAB CE programme, but at the same time the Single European Sky programme of the European Union. In 2018, the ANSPs decided to modify the FCE Memorandum of Association and Shareholders Agreement which now allows technical and operational projects to be launched by a group of FAB CE partners focused on a specific area of air traffic management performance improvement. Not all FAB CE ANSPs share the same operational, traffic load and equipment priorities, but until then there was a need for the consent of all partners to proceed. This agreement allows FAB CE partners with a focus on a specific area of performance improvement to form new collaborative agreements which help to address specific customer requirements while increasing the overall effectiveness of the FAB CE work programme.

In 2018, the FAB CE ANSPs have transformed themselves into a 'FAB CE Airspace Alliance' and since then, a lot of effort has been dedicated to actions to be taken by FAB CE ANSPs in support of the Network Manager's (NM) European Airspace Architecture Study (EAAS).

Due to the onset of COVID-19 and the resulting changes in the ANSPs' strategic focus areas and priorities, some activities in 2020 were either delayed, postponed to 2021+ or cancelled. However, there have been a number of important achievements in 2020 focusing on several key areas. The following bullets summarise the most important activities delivering the benefits to airspace users:

- A complete revision of the FAB CE Strategy for 2020-2030 was completed, taking into account the conclusions of the European Airspace Architecture Study (EAAS) and the Wise Persons Group established by DG MOVE in April 2019. The recommendations contained in these documents call for an industry transformation to a data-driven, services-based environment where increased collaboration, information sharing and automation are expected to deliver the capacity required towards the year 2035. Therefore, a revision and realignment of the FAB CE ANSPs' Strategy was completed to ensure that the future developments address the identified critical functions and that the priorities of the FAB co-operation contribute towards the EAAS targets.
- The FAB CE Airspace Task Force continued to work closely with NM and ANSPs outside FAB CE - including BULATSA, PANSA, ROMATSA and SMATSA – to expand FRA across the important central/south-east European airspace region. The work includes reaching agreements on cross-border airspace restructuring and more detailed plans for implementation. A number of discussions have been held in 2020 to define further airspace restructuring proposals, focusing on extending free route airspace (FRA) procedures in and around the FAB CE area. The final goal is to have one large FRA area which includes Baltic FAB, FAB CE, Danube FAB and neighbouring states not currently included in the FAB network, such as Serbia, Montenegro and Albania. The target is to create a 'borderless' FRA area spanning this large expanse of European airspace by 2025.

- FAB CE ANSPs also participate jointly in the NM's Operational Excellence Project to implement the best practice among FAB CE air navigation service providers. Early work on the programme centred on human resources, air traffic flow and capacity management and airspace management and systems domains. An initial survey into the work practices of ANSPs in these domains has identified areas where a common FAB CE approach could improve the overall performance, reduce fragmentation and potentially improve predictability. Since the onset of the Covid-19 pandemic, however, programme experts have refocused their activities on working with other aviation stakeholders to develop new short-term measures to support an aviation recovery in Europe.
- Following completion of Phase I of an activity to develop a joint contingency concept in cooperation with the Network Manager in 2018, which resulted in commonly agreed concept, procedures and technical enablers for the management of short- and medium-term (less than 2 hours) contingency event, FAB CE initiated Phase II of the project. This phase is expected to address management of long-term contingency events (beyond 2 hours duration) and provide for a common coordination platform for coordinating and monitoring the implementation activities of Phase I. However, due to the COVID-19 situation, the activity has been postponed to 2021.
- Building on the successful completion of the Surveillance optimisation project and NAVAID optimisation projects in 2018 and 2020, a Common CNS planning project was initiated in 2020 focusing on identification of opportunities for smart procurement of CNS infrastructure and developing a joint CNS investment plan to be used as an input into updating/optimizing of the national CNS investment plans. The project is also expected to establish and deploy a continuous process for common CNS infrastructure planning led by FCE, building on the processes developed under SUR and NAVOPT projects. FCE has been a leader of these activities to ensure the planning is common, coordinated and takes a FAB CE-wide perspective, there are no double investments in the cross-border areas, the FAB CE ANSPs share common system resources where and when possible and optimise CNS infrastructure. The expected benefit is improved cost efficiency through improved use of resources, avoided unnecessary investments and reduced equipment prices resulting from economies-of-scale. The project is expected to be completed at the beginning of 2021.
- A number of cooperation activities in the technical domain, which were identified and started in 2019, continued their activities throughout 2020. These included a coordinated approach to ADS-B deployment, coordinated monitoring and protection of surveillance frequencies and common approach to datalink monitoring. These projects have been closed at the end of 2020 due to fulfilling the objectives (e.g. common approach to datalink monitoring) or due to initiating parallel activities at European level (coordinated approach to ADS-B deployment, coordinated monitoring and protection of surveillance frequencies).

The FAB CE Programme is continuously updated by the FAB CE bodies under management of the FAB CE Programme Manager with the support of the FAB CE Programme Support Office and there are a number of pending projects focusing on delivering additional benefits to airspace users that will be implemented in the near future, based on priorities of the ANSPs.

4.2. Multinational cooperation initiatives

The Czech Republic is involved in international activities in the field of ATM like the EATM and NM developments. The ANS CR actively participates in a number of working teams of international organisation (e.g. EUROCONTROL, CANSO), co-operation and co-ordination exists with bordering ECAC States (Austria, Germany, Poland, and the Slovak Republic) especially in the field of airspace design. In order to achieve some of the ATM MP L3 Implementation Objectives, Praha ACC will have to co-ordinate some of its actions with a number of foreign adjacent ACCs/UAC. Military regional coordination within NATO environment (Germany, Poland and Slovak Republic) is based on common NATO procedures.

The Czech Republic has been involved in a process of establishing a more formalized framework in the field of cross-border provision of air navigation services with two of its neighbouring countries: Germany and Poland. In each case, the ultimate goal is to have a three-layer scheme of agreements: on the level of (i) states, (ii) ANSPs and (iii) NSAs.

Still, the process of concluding a bilateral international treaty approved by a law-making body is generally a lengthy and difficult one. Therefore, for sake of flexibility, the countries involved opted for a more flexible solution.

In December 2014, relevant agreements were concluded at the level of Czech and German NSAs as well as ANSPs (ANS CR and DFS) even before the state level treaty would be finalized. Similar agreement was subsequently concluded also between Czech and Polish NSAs in December 2015.

The Czech NSA continued in mutual cooperation with the German and Polish NSAs based on the relevant agreements and working arrangements which provide mutual cooperation of the relevant bodies concerning supervision of cross-border provision of ANS. It covers in particular exchange of information, procedures for joint supervision and mutual recognition of supervisory tasks.. In addition, the Czech NSA continues in its involvement in international activities in the field of ATM/ANS and actively participates in a number of working groups on several forums (e.g. EASA, EUROCONTROL, NSA CC, NCP).

The two ANSP level agreements between ANS CR and DFS represent agreements within the sense of Art. 10(2) and (3) of Regulation (EC) 550/2004. They are complex arrangements between the providers covering cross-border provision of ANS, including, e.g. procedures and principles for compliance with applicable rules, occurrence reporting, notifications, liability or insurance.

B4 Consortium

The B4 Consortium was set up formally on 8 September 2014 by PANSA (Poland), ANS CR (Czech Republic), LPS SR (Slovak Republic) and „Oro navigacija" (Lithuania) representing small and medium-sized European Air Navigation Service Providers.

The B4 Consortium is a member of the A6+ on SESAR 2020 Programme content. As outcome of SJU membership negotiation, the B4 Consortium has become a member of SJU from July 6, 2016.

By the end of 2016, the B4 Consortium has started elaborating Industrial research projects within the SJU. The outcomes of the commonly financed projects are expected to pave the way towards the new generation air traffic management system capable of ensuring improved safety and efficiency of air transport in Europe.

In 2020, B4 members continued in its active contribution to the SJU under the SESAR 2020 Wave 2 projects despite the consequences caused by COVID-19 pandemic.

South East Europe Common Sky Initiative (SECSI FRA)

Following the successful implementation of the SAXFRA (Slovenian Austrian Cross-border Free Route Airspace) and SEAFRA (South-East Axis Free Route Airspace - project of three ANSPs from Bosnia and Herzegovina, Croatia, Serbia and Montenegro) initiatives in 2016, both initiatives have been in 2017 merged into the South East Europe Common Sky Initiative (SECSI FRA) creating a large cross-border FRA block including Austria, Bosnia and Herzegovina, Croatia, Serbia and Slovenia.

The SECSI FRA went operational on the 1st of February 2018 offering airspace users significant benefits along the South East Axis, by delivering the shortest route options from Central Europe to South Eastern Europe. The benefits gained through the SECSI FRA are substantial. Based on the shortest route assignment potential savings per day are up to 1.940 NM in flight distance, 285 minutes in flight time, a reduction in fuel consumption of 8,000 kg and a reduction in CO2 emissions of 25.500 kg.

The SECSI FRA will make more options available when determining the user-preferred trajectory. Full cross-border FRA allows airlines to take better advantage of wind or adapt to network disruptions. The better use of FRA options at flight planning level improve predictability and reduce ATC workload. This initiative not only works towards achieving the goals of the European Commission regarding the implementation of “Free Route” across Europe but also fulfils airspace user´s requests for having multiple route options available for the same city-pair.

South East Europe Night Free Route Airspace (SEEN FRA)

On the 30th March 2017, the DANUBE FAB (Romania and Bulgaria) and Hungary introduced SEEN FRA by bridging the airspace between the two Functional Airspace Blocks of the DANUBE FAB and FAB CE during the time period 2300-0500 (2200 - 0400) UTC. At the end of 2018, the initiative was expanded by the airspace of Slovakia. From the 6th December 2018, aircraft operators are thus able to plan their flights freely across the airspace of four States covering parts of two FABs without having to take into account the limitations imposed by geographical borders. The new flight planning rules significantly optimize flight trajectories to provide the shortest possible connections and the most effective routings when changes to the flight plan – to avoid adverse weather, for example – are required. According to simulations of the airspace change the synergistic effect of all improvements could reduce trajectories by a daily average of 3.200 NM, which equates to 15 tonnes of fuel and 49 tonnes of CO2 emissions.

Further improvements to Central and South-Eastern European airspace configurations will take place in 2019. From April 2019, 24-hour FRA will be implemented within Slovakian airspace and during summer 2019 LPS SR will consider extending SEEN FRA availability for longer periods of the day. From 7 November 2019, the three countries initiating the SEEN FRA programme (Bulgaria, Hungary and Romania) will extend the availability of cross-border FRA operations across the entire day with the introduction of the South East Europe Free Route Airspace (SEE FRA) project.

The B4 Consortium considers the vast expertise of its members in ATM operational and technical domains, Project and Quality management and experience in execution of several high complexity ATM projects as well as the expertise and experience of its Linked Third Parties ranging from scientific research, concept developments, up to product prototyping and manufacturing highly beneficial for the successful accomplishment of the SESAR 2020 program objectives.

The B4 Consortium together with its Linked Third Parties can see its role in SESAR 2020 Projects not only in eliminating current absence of small and medium-sized ANSPs in the SESAR projects but also in bringing different experiences and approaches to the SESAR 2020 programme by providing the SJU with its broadly experienced and highly motivated staff and well-equipped facilities.

During 2018, B4 members actively contributed to already running SESAR 2020 Wave 1 projects. At the same time a lot of effort was put on the SESAR 2020 Wave 2 preparation. The Call for Wave 2 itself was launched early 2019 and the whole process was successfully finished by the end of 2019 by signing the Grant Agreements including B4 members.

Regional projects

INEA CEF Call 2014 projects with ANS CR contribution

Project ID	Project Name	Project Leader / Contributors (if any)	Project Duration
102AF3	Free Route Airspace from the Black Forest to the Black Sea	HCL / ANS CR + FAB CE ANSPs	1.9.2015 - 21.4.2017

INEA CEF Call 2015 projects with ANS CR contribution

Project ID	Project Name	Project Leader / Contributors (if any)	Project Duration
2015_234_AF1_B	AMAN LOWW initial	ACG / ANS CR + LPS + HCL	1.3.2016 - 28.03.2019
2015_196_AF1_B*	Extended AMAN in Czech airspace	ANS CR / DFS+others(separate proposal)	1.2.2016 - 02.11.2018
2015_239_AF3	Flexible ASM and Free Route	ANS CR	1.3.2016 - 1.12.2021
2015_242_AF3	Free Route implementation into ATM system of ANS CR	ANS CR	1.3.2016 - 31.12.2021
2015_240_AF4	Traffic Complexity Tools	ANS CR	15.2.2016 - 02.11.2018
2015_174_AF5_B	NewPENS Stakeholders contribution for the procurement and deployment of NewPENS	EUROCONTROL / ANS CR + others	15.2.2016 - 31.12.2020
2015_243_AF5	Aeronautical Information Distribution Service	ANS CR	01.06.2016 - 31.5.2021
2015_145_AF5_B	AIM Deployment Toolkit	EUROCONTROL / ANS CR + others	01.06.2016 - 31.12.2021
2015_241_AF5	Meteorological Information Exchange Service	ANS CR / CHMI (Czech Hydrometeorological Institute)	01.03.2016 - 17.12.2021
2015-EU-TM-0242-W	Deployment of harmonised and interoperable high Performance European Surveillance System	EUROCONTROL / ANS CR + NAV Portugal	01.03.2016 - 31.12.2021

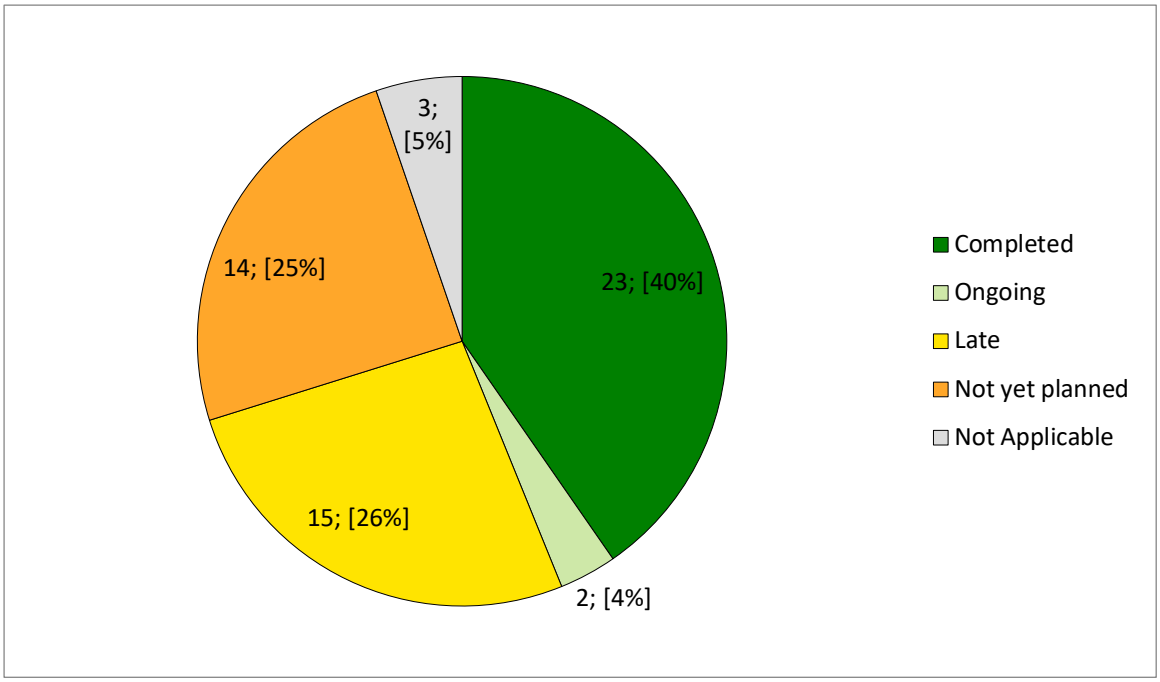
INEA CEF Call 2016 projects with ANS CR contribution

Project ID	Project Name	Project Leader / Contributors (if any)	Project Duration
2016_075_AF3_B	FAB CE wide Study of DAM and STAM - Cohesion Call	FAB CE Ltd/ ANS CR + other FAB CE ANSPs	07.02.2017 - 31.12.2018
2016_064_AF5	AIMSIL - AIM Systems Integration Layer	ANS CR	CANCELED
2016_065_AF5	SWIM implementation into ATS INFO/ARO system of ANS CR	ANS CR	01.09.2017 - 27.05.2021

5. Implementation Objectives Progress

5.1. State View: Overall Objective Implementation Progress

The graph below shows progress for all Implementation Objectives (applicable and not applicable to the State).



Summary of the implementation of the objectives

The introduction of a new Voice Communication System was a major project, which was finalised by the end of 2020 and contributed to the completion of Objectives COM10 and COM11.

The Objective ATC02.8 will be fully completed with the new ATM system upgrade, which is foreseen in 2021.

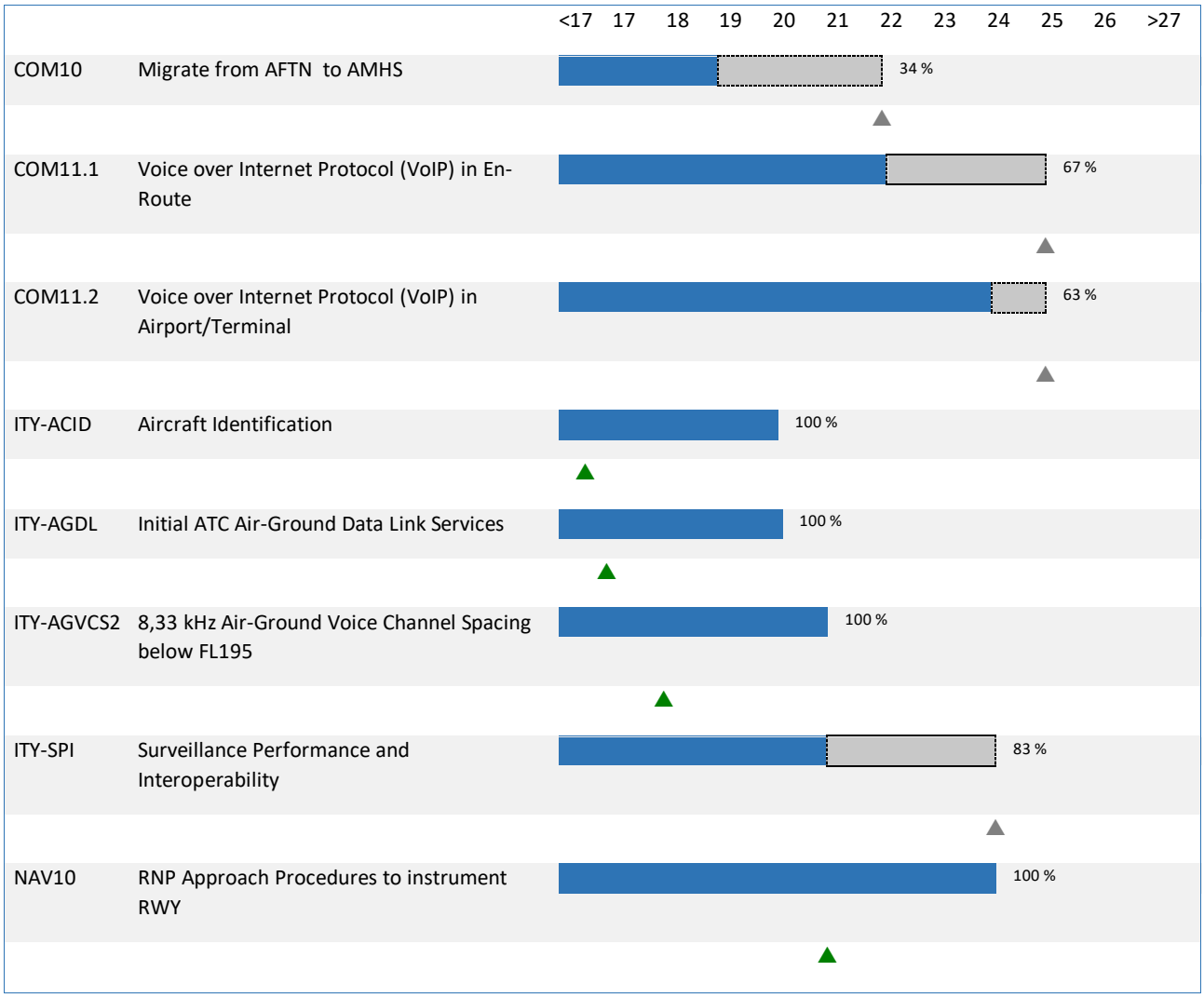
The Objective SAF11 is currently in the planning stage and is envisaged to be completed by 2022.

5.2. Objective Progress per SESAR Essential Operational Changes

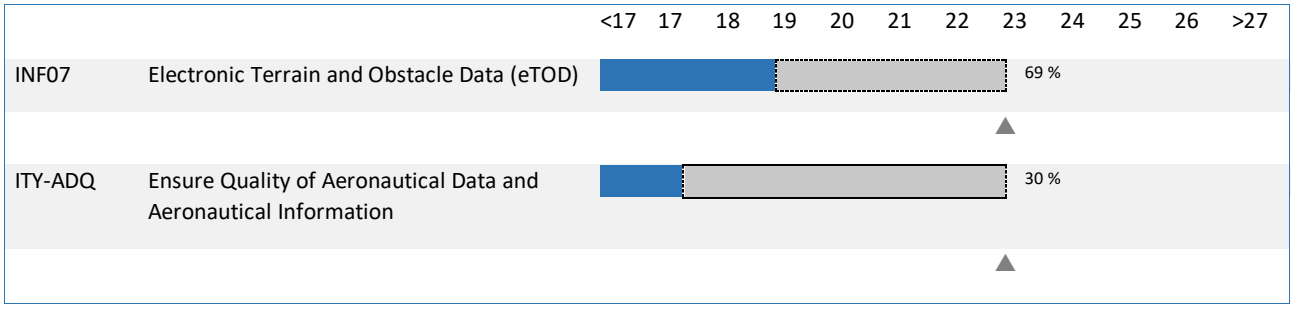
Legend:

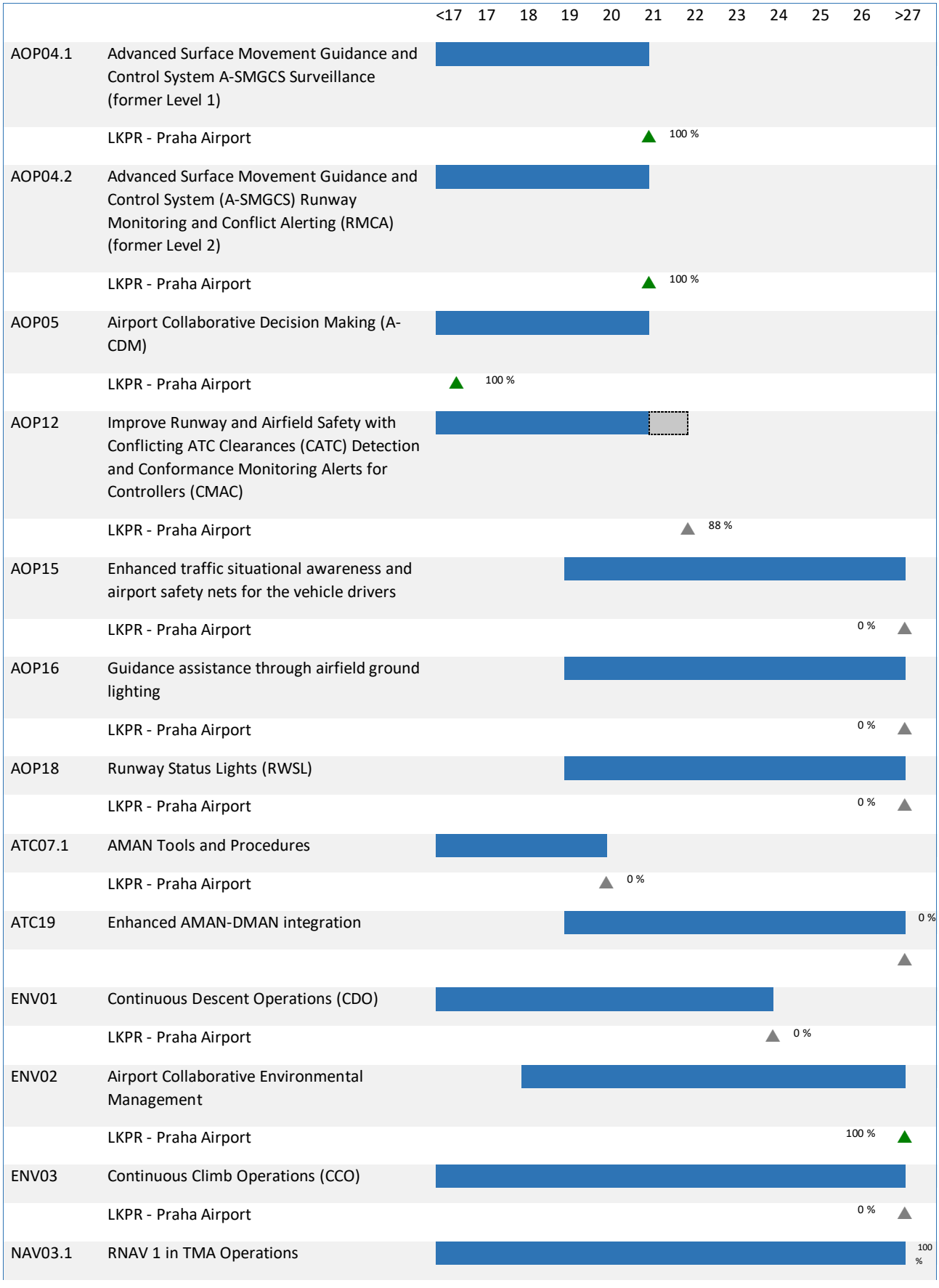
- ▲ 100% = Objective completed
- ▲ ## % = Expected completion / % Progress
- = Implementation Objective timeline (to FOC date)
- = Completion beyond Implementation Objective timeline

CNS infrastructure and services




<17 17 18 19 20 21 22 23 24 25 26 >27
AOM13.1
Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling
100 %
AOP11
Initial Airport Operations Plan
LKPR - Praha Airport
9 %
AOP17
Provision/integration of departure planning information to NMOC
LKPR - Praha Airport
0 %
COM12
New Pan-European Network Service (NewPENS)
100 %
FCM03
Collaborative Flight Planning
85 %
FCM04.2
Short Term ATFCM Measures (STAM) - Phase 2
100 %
FCM05
Interactive Rolling NOP
25 %
FCM06
Traffic Complexity Assessment
100 %
INF08.1
Information Exchanges using the SWIM Yellow TI Profile
8 %


<17 17 18 19 20 21 22 23 24 25 26 >27
INF07
Electronic Terrain and Obstacle Data (eTOD)
69 %
ITY-ADQ
Ensure Quality of Aeronautical Data and Aeronautical Information
30 %


<17
17
18
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21
22
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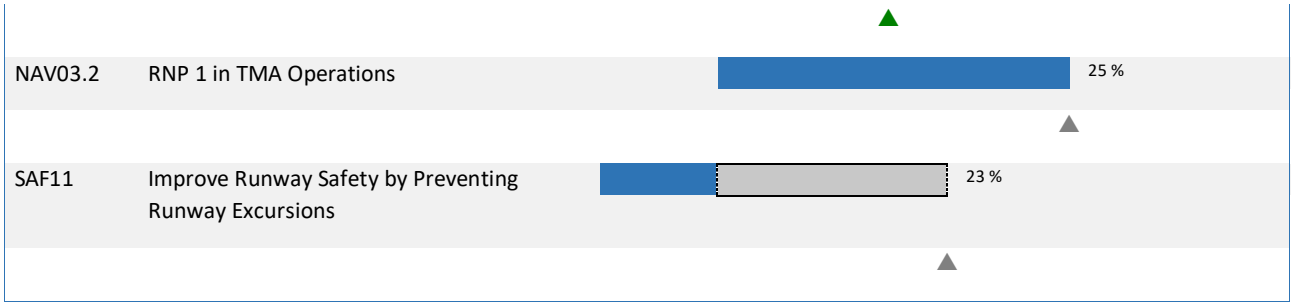
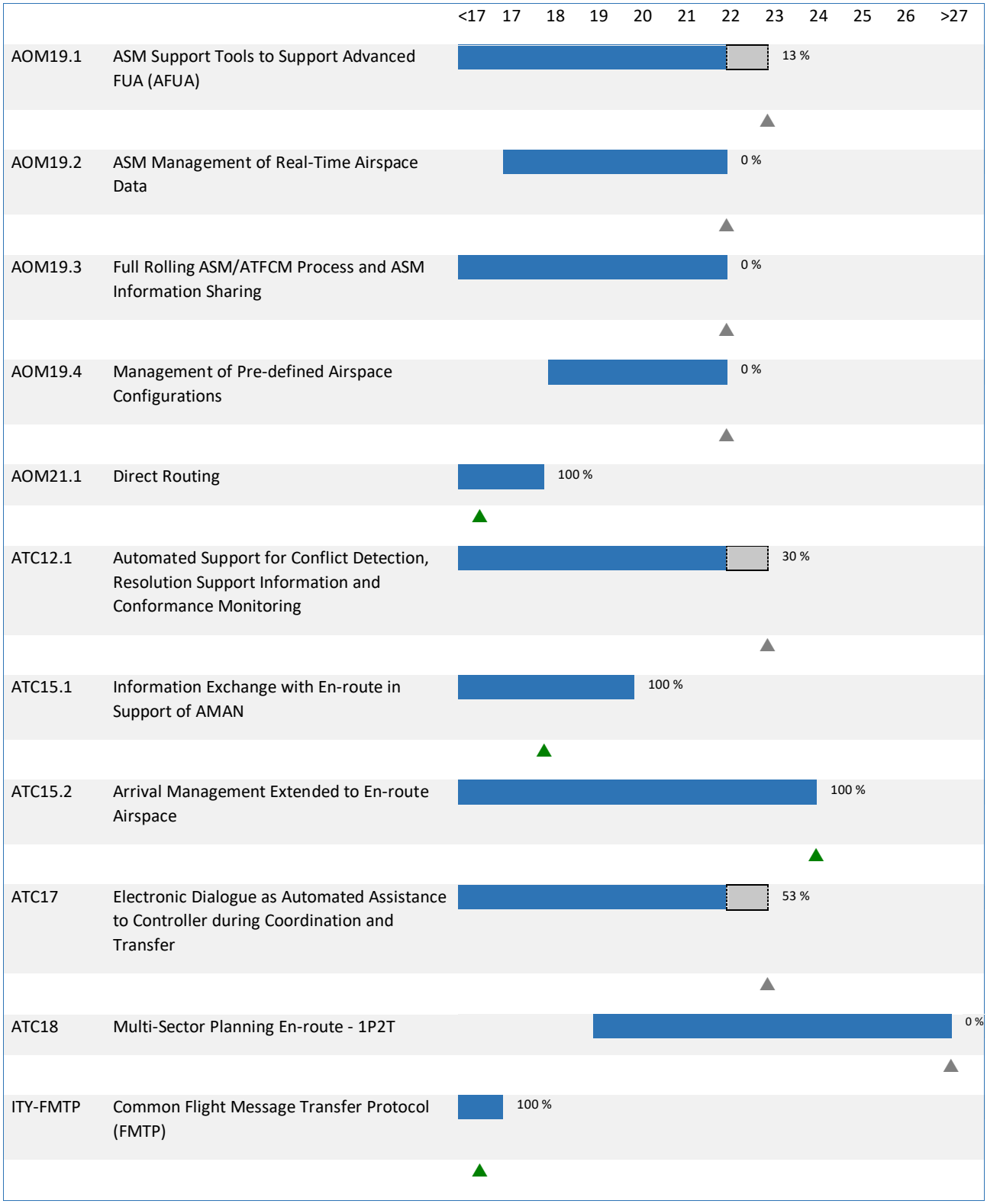
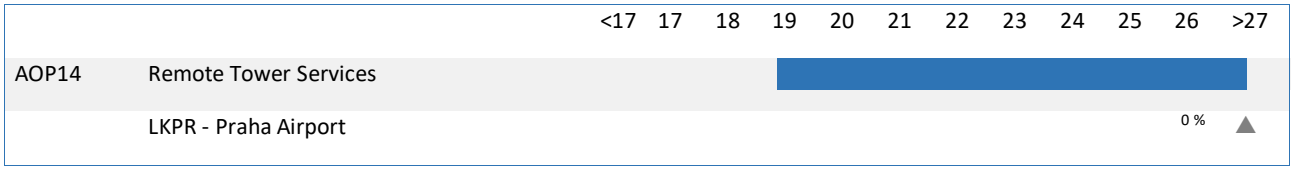
25
26
>27
AOP04.1
Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)
LKPR - Praha Airport
100 %
AOP04.2
Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)
LKPR - Praha Airport
100 %
AOP05
Airport Collaborative Decision Making (A-CDM)
LKPR - Praha Airport
100 %
AOP12
Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)
LKPR - Praha Airport
88 %
AOP15
Enhanced traffic situational awareness and airport safety nets for the vehicle drivers
LKPR - Praha Airport
0 %
AOP16
Guidance assistance through airfield ground lighting
LKPR - Praha Airport
0 %
AOP18
Runway Status Lights (RWSL)
LKPR - Praha Airport
0 %
ATC07.1
AMAN Tools and Procedures
LKPR - Praha Airport
0 %
ATC19
Enhanced AMAN-DMAN integration
0 %
ENV01
Continuous Descent Operations (CDO)
LKPR - Praha Airport
0 %
ENV02
Airport Collaborative Environmental Management
LKPR - Praha Airport
100 %
ENV03
Continuous Climb Operations (CCO)
LKPR - Praha Airport
0 %
NAV03.1
RNAV 1 in TMA Operations
100 %

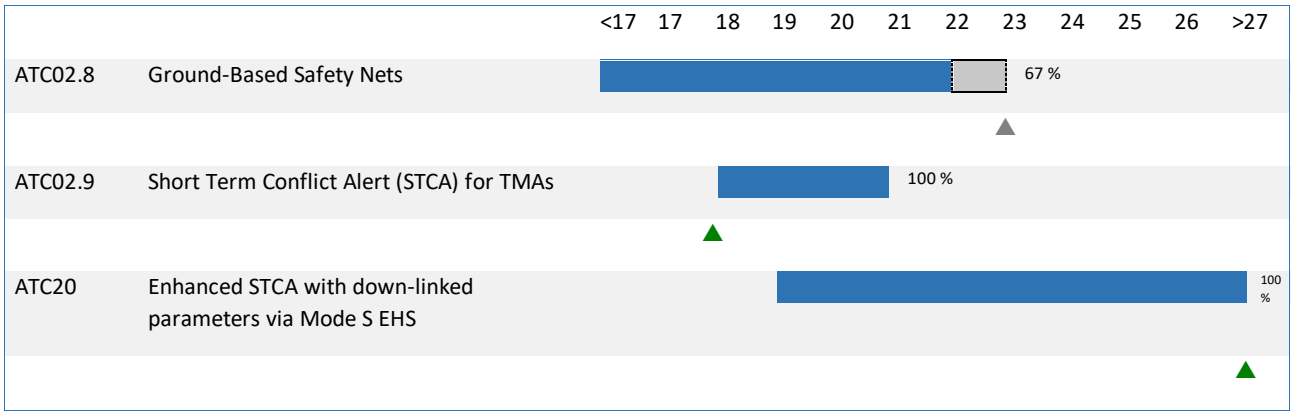

NAV03.2
RNP 1 in TMA Operations
25 %
SAF11
Improve Runway Safety by Preventing Runway Excursions
23 %


<17
17
18
19
20
21
22
23
24
25
26
>27
AOM19.1
ASM Support Tools to Support Advanced FUA (AFUA)
13 %
AOM19.2
ASM Management of Real-Time Airspace Data
0 %
AOM19.3
Full Rolling ASM/ATFCM Process and ASM Information Sharing
0 %
AOM19.4
Management of Pre-defined Airspace Configurations
0 %
AOM21.1
Direct Routing
100 %
ATC12.1
Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring
30 %
ATC15.1
Information Exchange with En-route in Support of AMAN
100 %
ATC15.2
Arrival Management Extended to En-route Airspace
100 %
ATC17
Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer
53 %
ATC18
Multi-Sector Planning En-route - 1P2T
0 %
ITY-FMTP
Common Flight Message Transfer Protocol (FMTP)
100 %

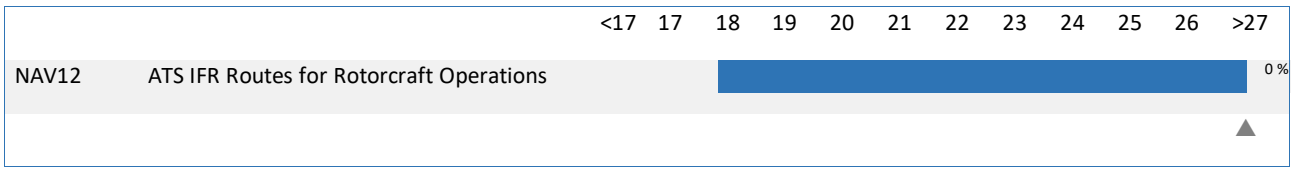

VS
Virtualisation
of service
provision


<17 17 18 19 20 21 22 23 24 25 26 >27
AOP14
Remote Tower Services
LKPR - Praha Airport
0 %


TBO
Trajectory
-based
operations


<17 17 18 19 20 21 22 23 24 25 26 >27
ATC02.8
Ground-Based Safety Nets
67 %
ATC02.9
Short Term Conflict Alert (STCA) for TMAs
100 %
ATC20
Enhanced STCA with down-linked
parameters via Mode S EHS
100
%


M3
Multimodal mobility
and integration of
all airspace users


<17 17 18 19 20 21 22 23 24 25 26 >27
NAV12
ATS IFR Routes for Rotorcraft Operations
0 %

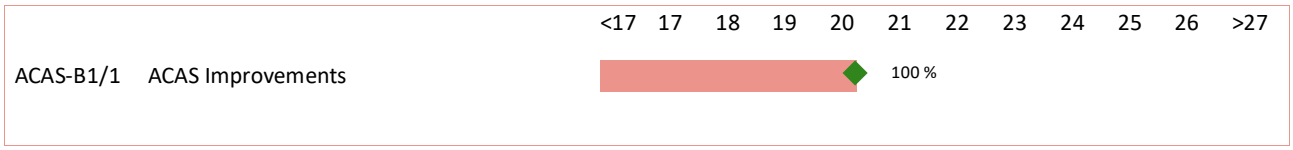
5.3.ICAO ASBU Implementation Progress

The following tables show, for each of the ASBU Elements belonging to a particular ASBU Thread and Block, the overall status, the final date foreseen for completion and the percentage of progress achieved in the current cycle.

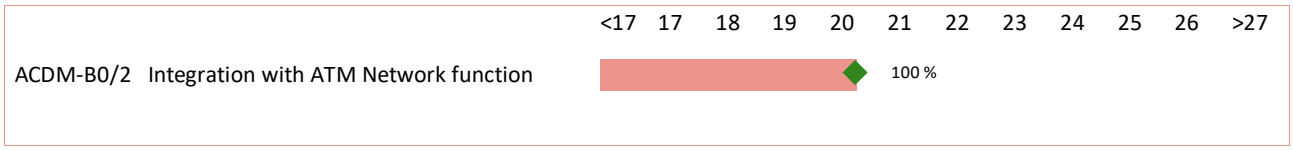
These results were determined using the LSSIP Year 2020 declared statuses and progress of the relevant implementation objectives in accordance with the initial mapping between ATM Master Plan Level 3 and new ICAO GANP 6th Edition (2019), as reflected in the Implementation Plan 2020. A comprehensive analysis performed as part of the ongoing ICAO EURGANT Project Team activity may result in updating the mapping following EASPG approval.

Legend:

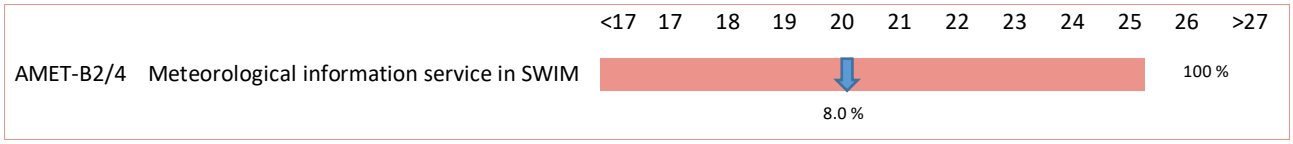
ACAS



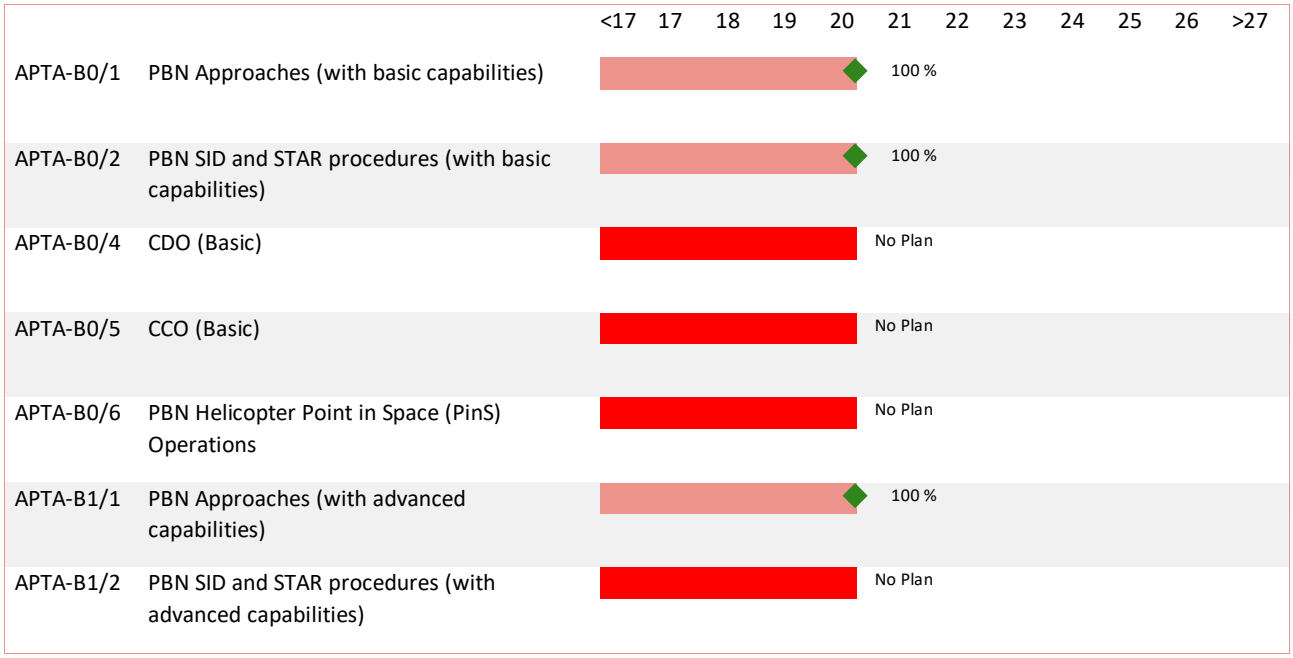
ACDM



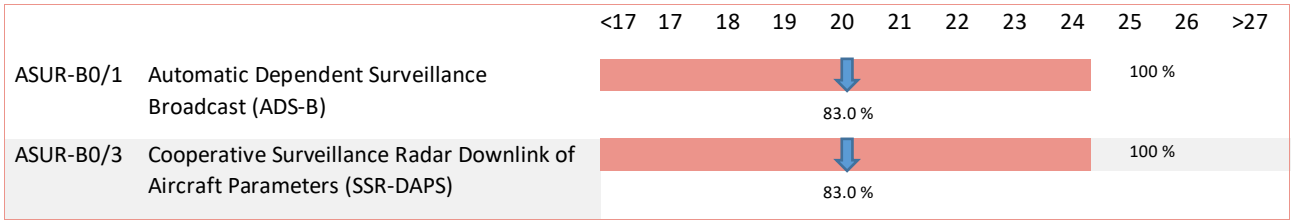
AMET



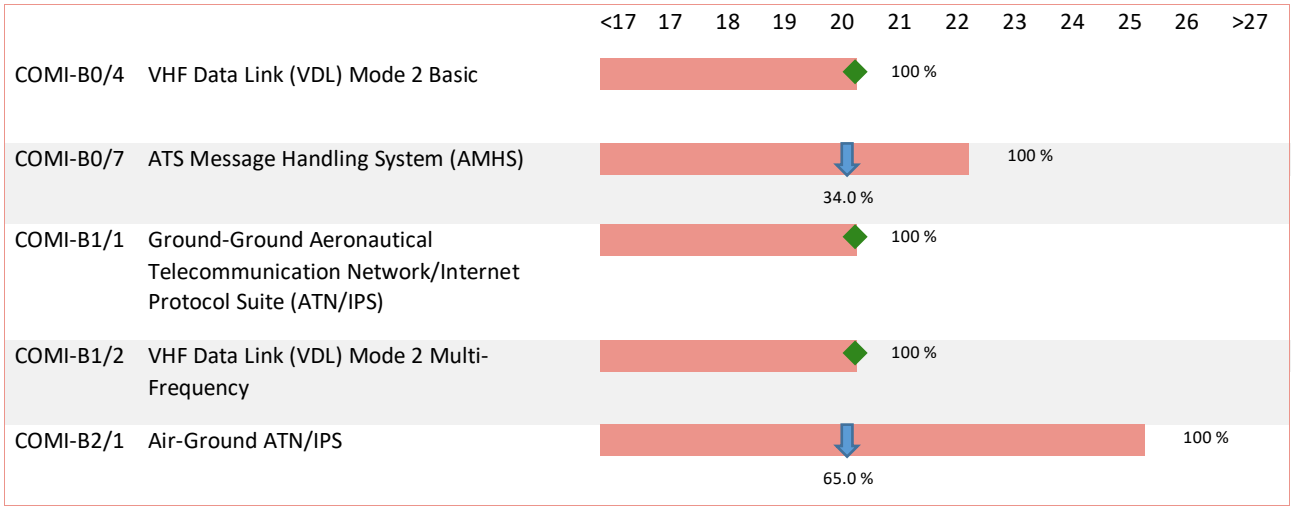
APTA



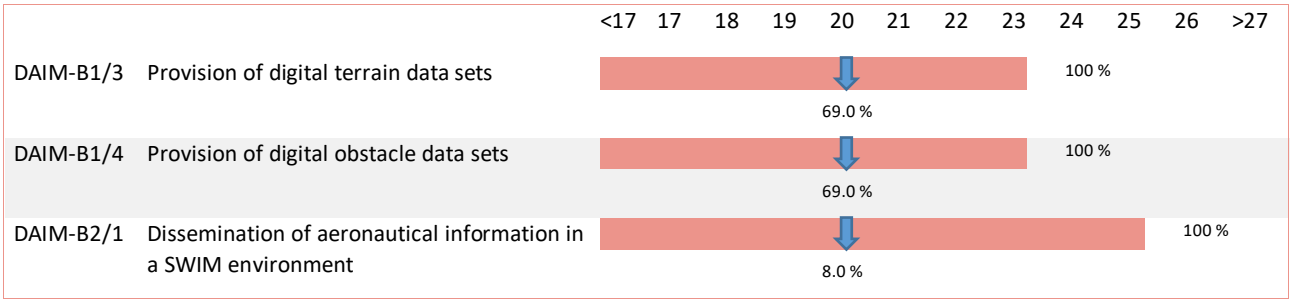
ASUR



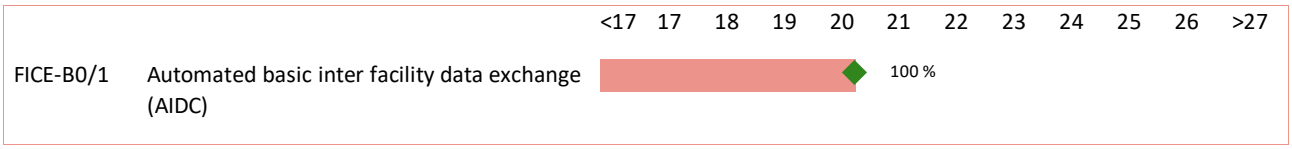
COMI



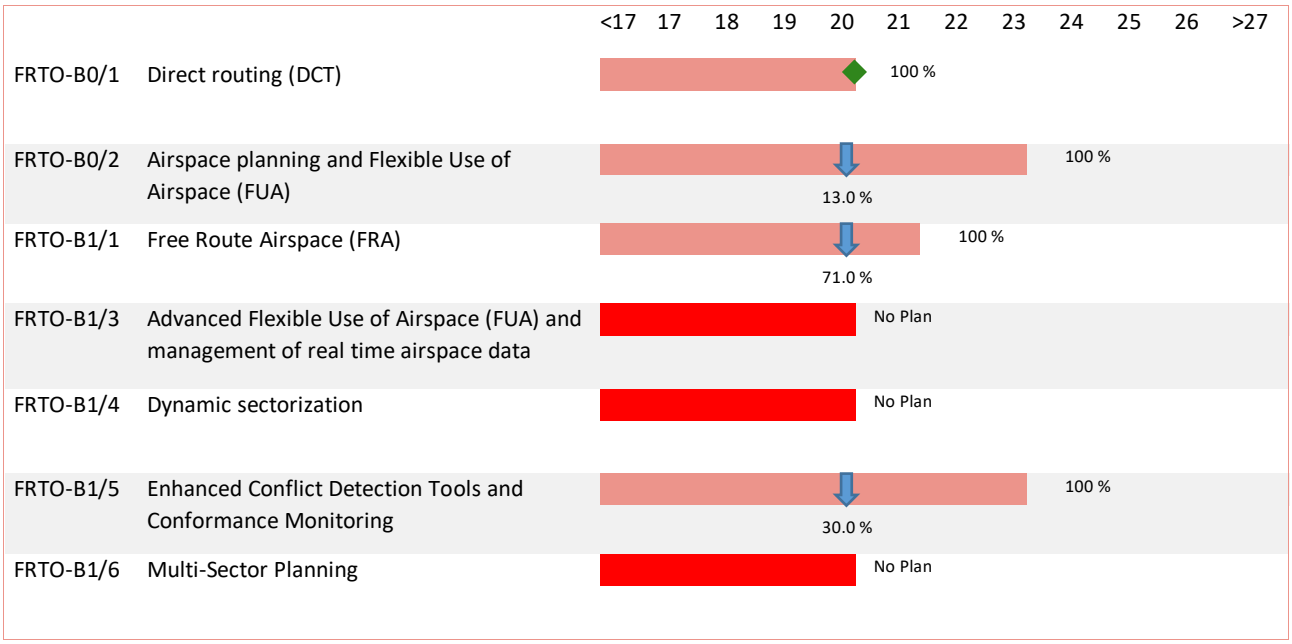
DAIM



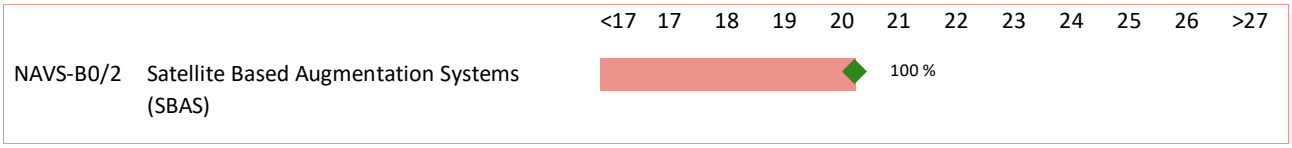
FICE



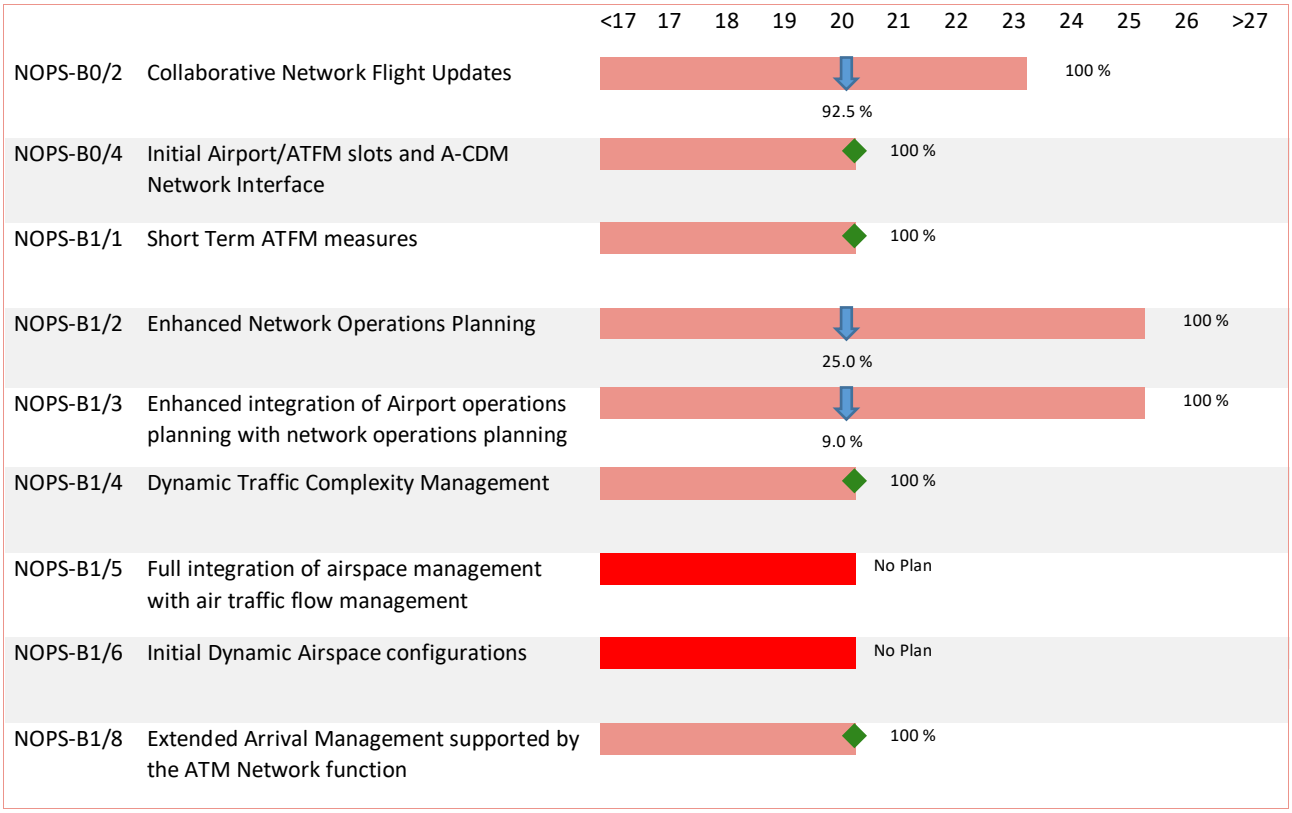
FRTO



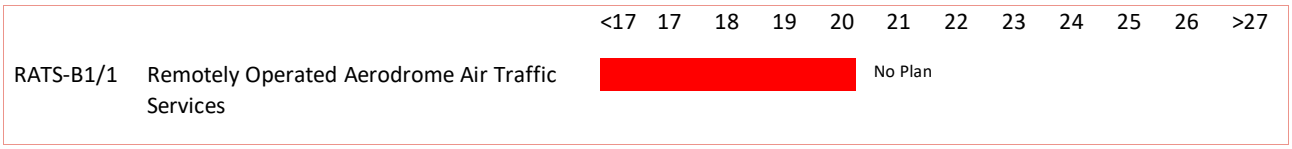
NAVS



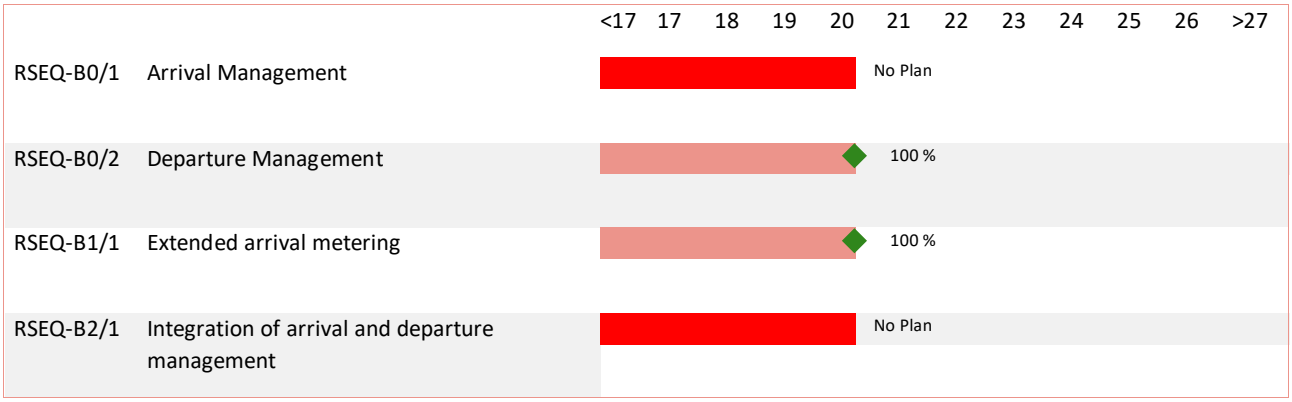
NOPS



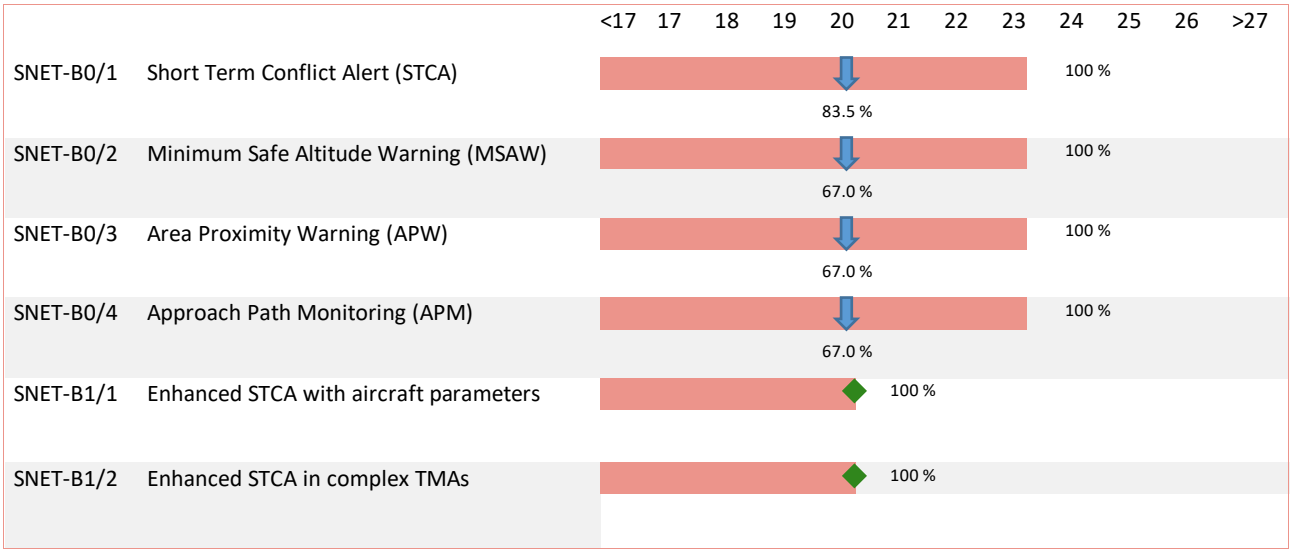
RATS



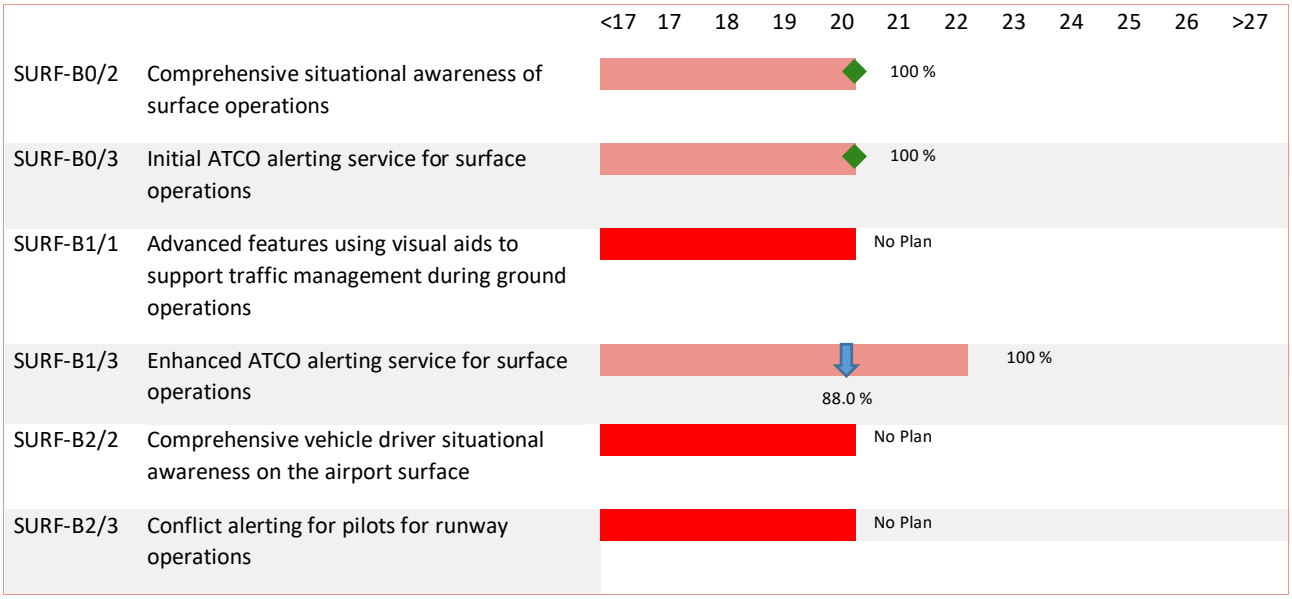
RSEQ



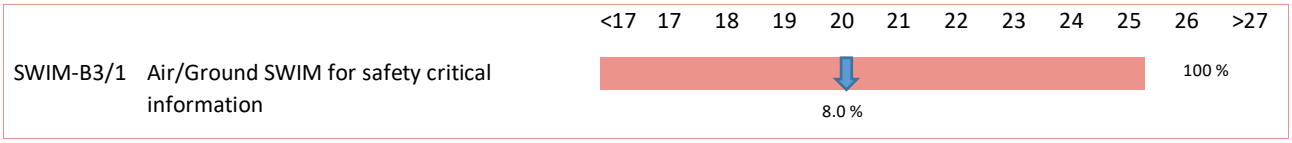
SNET



SURF



SWIM



5.4. Detailed Objectives Implementation progress

Objective/Stakeholder Progress Code:			
Completed		Not yet planned	
Ongoing		Not Applicable	
Planned		Missing Data	
Late			

Main Objectives

AOM13.1	**Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling** ***Timescales:*** Initial operational capability: 01/01/2012 Full operational capability: 31/12/2018		**100%**	**Completed**
	-			
Completed as of May 1, 2014. (establishment of integrated CIV-MIL ACC).				**31/12/2014**
REG (By:12/2018)				
MoT CR	-	-	100%	Completed 31/12/2014
MAA	-	-	100%	Completed 31/12/2012
ASP (By:12/2018)				
CZ Air Force	Completed as of May 1, 2014 (establishment of integrated CIV-MIL ACC).	-	100%	Completed 31/12/2014
ASP ANS CR	-	-	100%	Completed 31/12/2014
MIL (By:12/2018)				
CZ Air Force	-	-	100%	Completed -
MAA	-	-	100%	Completed 31/12/2012

AOM19.1	**ASM Support Tools to Support Advanced FUA (AFUA)** ***Timescales:*** Initial operational capability: 01/01/2011 Full operational capability: 01/01/2022		**13%**	**Late**
	-			
ASP: Improved ASM/ATFCM process, ASP plans the implementation of remaining SLOAs for 2021. **MoD participates on a national level of implementation of these objectives.**				**31/12/2022**
ASP (By:01/2022)				
FDD	MoD participates on a national level of implementation of these objectives.	-	10%	Late 31/12/2022
CZ Air Force	MoD participates on a national level of implementation of these objectives.	-	10%	Late 31/12/2022
ASP ANS CR	Improved ASM/ATFCM process, ASP plans the implementation of remaining SLOAs for 2021.	-	20%	Ongoing 01/01/2022

AOM19.2	**ASM Management of Real-Time Airspace Data** ***Timescales:*** Initial operational capability: 01/01/2017 Full operational capability: 01/01/2022		**0%**	**Not yet planned**
	-			
There is an intention to implement this objective, but there is no formal planning documentation.				-
ASP (By:01/2022)				
ASP ANS CR	There is an intention to implement this objective, but there is no formal planning documentation.	-	0%	Not yet planned -

AOM19.3	**Full Rolling ASM/ATFCM Process and ASM Information Sharing** ***Timescales:*** Initial operational capability: 01/01/2014 Full operational capability: 01/01/2022		**0%**	**Not yet planned**
	-			
The objective is not yet planned.				-
ASP (By:01/2022)				
ASP ANS CR	-	-	0%	Not yet planned -

AOM19.4	**Management of Pre-defined Airspace Configurations** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 01/01/2022		**0%**	**Not yet planned**
	-			
The objective is not yet planned.				-
ASP (By:01/2022)				
ASP ANS CR	-	-	0%	Not yet planned -

AOM21.2	**Free Route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2022		**71%**	**Ongoing**
		-		
Elementary FRA feasibility study was created. FRA Intermediate Concept implementation is planned for February 25, 2021.				**25/02/2021**
ASP (By:01/2022)				
ASP ANS CR	Elementary FRA feasibility study was created. FRA Intermediate Concept implementation is planned for February 25, 2021.	Airspace Task Force / DEVOPS: FABCE Development of Operational Performance and ATM Strategies (previously Project 1) / Flexible ASM and Free Route / Free Route implementation into ATM system of ANS CR	71%	Ongoing 25/02/2021

AOP04.1	**Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)** ***Timescales:*** Initial operational capability: 01/01/2007 Full operational capability: 01/01/2021		**100%**	**Completed**
		LKPR - Praha Airport		
Czech Republic has implemented the Objective. ANS CR was member of BETA research project (2000-2002) which evaluated operational impact of A-SMGCS. System NOVA 9000 (produced by Park Air Systems) is installed in Prague Ruzyne airport.				**-**
REG (By:12/2010)				
CAA CR	All actions are completed.	-	100%	Completed -
MoT CR	-	-	100%	Completed -
ASP (By:01/2021)				
ASP ANS CR	All actions are completed.	-	100%	Completed -
APO (By:01/2021)				
Prague Airport	All actions are completed.	-	100%	Completed -

AOP04.2	**Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)** ***Timescales:*** Initial operational capability: 01/01/2007 Full operational capability: 01/01/2021		**100%**	**Completed**
LKPR - Praha Airport				
Czech Republic has implemented the Objective. The implementation and operation is the responsibility of the ASP and thus the Objective is not applicable for APO.				-
ASP (By:01/2021)				
ASP ANS CR	A-SMGCS Level 2 functionality was installed in Prague/Ruzyne airport and is in full operation.	-	100%	Completed -
APO (By:01/2021)				
Prague Airport	Not required (A-SMGCS control function installed and operated by ASP).	-	0%	Not Applicable -

AOP05	**Airport Collaborative Decision Making (A-CDM)** ***Timescales:*** Initial operational capability: 01/01/2004 Full operational capability: 01/01/2021		**100%**	**Completed**
LKPR - Praha Airport				
Airport CDM at Praha/Ruzyne launched October 2009; TOBT is provided by GHA. TSAT procedure, DEP sequencing and CDM De-icing procedures launched in September 2011. FUM/DPI implemented in 2015.				**31/12/2015**
ASP (By:01/2021)				
ASP ANS CR	-	-	100%	Completed 31/12/2013
APO (By:01/2021)				
Prague Airport	Airport CDM at Praha/Ruzyne launched 6 Oct. 2009; TOBT is provided by GHA. TSAT procedure, DEP sequencing and CDM De-icing procedures implemented in September 2011. FUM/DPI implemented in September 2015.	-	100%	Completed 31/12/2015
ASP ANS CR	Airport CDM at Praha/Ruzyne launched 6 Oct. 2009; TOBT is provided by GHA. TSAT procedure, DEP sequencing and CDM De-icing procedures implemented in September 2011. FUM/DPI implemented in September 2015.	-	100%	Completed 31/12/2015

AOP10	**Time-Based Separation** ***Timescales:*** - not applicable -		**0%**	**Not Applicable**
LKPR - Praha Airport **(Outside Applicability Area)**				
Prague Ruzyne Airport (LKPR) is not in the applicability area.				-
REG (By:01/2024)				
CAA CR	-	-	0%	Not Applicable -
ASP (By:01/2024)				
ASP ANS CR	-	-	0%	Not Applicable -

AOP11	**Initial Airport Operations Plan** ***Timescales:*** Initial Operational Capability: 01/01/2015 Full Operational Capability: 01/01/2021		**9%**	**Late**
LKPR - Praha Airport				
Gap analysis in progress in relation to CDM procedures.				**31/12/2024**
ASP (By:01/2021)				
ASP ANS CR	-	-	0%	Late 31/12/2024
APO (By:01/2021)				
Prague Airport	-	-	12%	Late 31/12/2024

AOP12	**Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2021		**88%**	**Late**
LKPR - Praha Airport				
ANS CR project "Advanced Safety Nets for Prague Airport" was scheduled for years 2016 - 2021. ASMGCS system upgrade was performed and the operational use was launched in February 2021, followed by APO training.				**31/12/2021**
ASP (By:01/2021)				
ASP ANS CR	ANS CR project "Advanced Safety Nets for Prague Airport" was scheduled for years 2016 - 2021. ASMGCS system upgrade was performed and operational use was launched on February 9, 2021.	-	100%	Completed 09/02/2021
APO (By:01/2021)				
Prague Airport	-	-	50%	Late 31/12/2021

AOP13	**Automated Assistance to Controller for Surface Movement Planning and Routing** ***Timescales:*** - not applicable -		**0%**	**Not Applicable**
LKPR - Praha Airport **(Outside Applicability Area)**				
CZ (LKPR) is not in the applicability area.				**-**
REG (By:01/2024)				
ASP (By:01/2024)				
ASP ANS CR	-	-	0%	Not Applicable -

ATC02.8	**Ground-Based Safety Nets** ***Timescales:*** Initial operational capability: 01/01/2009 Full operational capability: 01/01/2022		**67%**	**Late**
	-			
The APW and MSAW functions are fully implemented for ACC/APP Prague, APP Ostrava and APP Karlovy Vary and APP Brno (since Sep 2018). APM implementation is a part of the new ATM system (planned for 2022).				**31/12/2022**
ASP (By:01/2022)				
ASP ANS CR	-	-	67%	Late 31/12/2022
CZ Air Force	-	-	100%	Completed 31/12/2015

ATC02.9	**Short Term Conflict Alert (STCA) for TMAs** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2020		**100%**	**Completed**
	-			
The STCA functions are fully implemented for ACC/APP Prague, APP Ostrava, APP Karlovy Vary and APP Brno (implemented in September 2018).				**31/12/2017**
ASP (By:12/2020)				
ASP ANS CR	The STCA functions are fully implemented for ACC/APP Prague, APP Ostrava, APP Karlovy Vary and APP Brno (implemented in September 2018).	-	100%	Completed 31/12/2017

ATC07.1	**AMAN Tools and Procedures** ***Timescales:*** Initial operational capability: 01/01/2007 Full operational capability: 01/01/2020		**0%**	**Not yet planned**
	LKPR - Praha Airport			
There is an intention to implement AMAN based on the result of feasibility study and CBA for Prague Ruzyne AMAN/DMAN. The project is currently stopped due to traffic drop related to COVID-19 crisis. Feasibility of the project will be evaluated on yearly basis.				**-**
ASP (By:01/2020)				
ASP ANS CR	There is an intention to implement AMAN based on the result of feasibility study and CBA for Prague Ruzyne AMAN/DMAN. The project is currently stopped due to traffic drop related to COVID-19 crisis. Feasibility of the project will be evaluated on yearly basis.	AMAN LOWW initial	0%	Not yet planned -

ATC12.1	**Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2022		**30%**	**Late**
	-			
Specification is part of a new ANS CR ATM System (Neopteryx) project. Full implementation is planned for 2022.				**31/12/2022**
ASP (By:01/2022)				
ASP ANS CR	Specification is part of Neopteryx project. Full implementation is planned for 2022.	-	30%	Late 31/12/2022

ATC15.1	**Information Exchange with En-route in Support of AMAN** ***Timescales:*** Initial operational capability: 01/01/2012 Full operational capability: 31/12/2019		**100%**	**Completed**
	-			
Basic algorithm of production of AMA message is implemented in our en-route system and it is in operational use with Munich and Vienna Airports.				**31/12/2017**
ASP (By:12/2019)				
ASP ANS CR	Basic algorithm of production of AMA message is implemented in our en-route system and it is in operational use with Munich and Vienna Airports.	AMAN LOWW initial	100%	Completed 31/12/2017

ATC15.2	**Arrival Management Extended to En-route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2024		**100%**	**Completed**
	-			
ANS CR has implemented procedures and system changes for support extended AMAN operation with ACC/APP Munich and Vienna.				-
ASP (By:01/2024)				
ASP ANS CR	ANS CR has implemented procedures and system changes for support extended AMAN operation with ACC/APP Munich and Vienna.	-	100%	Completed -

ATC17	**Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 01/01/2022		**44%**	**Late**
	-			
The implementation is ongoing; COF, MAS and ROF messages are in operational use. TIM message is installed but not in operational use yet. The implementation of the missing message is planned as a part of the new ATM system (2022).				**31/12/2022**
ASP (By:01/2022)				
ASP ANS CR	-	-	44%	Late 31/12/2022

COM10	**Migrate from AFTN to AMHS** ***Timescales:*** Initial operational capability: 01/12/2011 Full operational capability: 31/12/2018		**34%**	**Late**
	-			
ANS CR implemented the capability of AMHS in January 2018. **Intention of MoD is to follow ASP but implementation depends on available budget.**				**31/12/2021**
ASP (By:12/2018)				
CZ Air Force	Intention of MoD is to follow ASP but implementation depends on available budget.	-	2%	Late 31/12/2021
FDD	Intention of MoD is to follow ASP but implementation depends on available budget.	-	2%	Late 31/12/2021
ASP ANS CR	ANS CR implemented the capability of AMHS in January 2018.	-	100%	Completed 04/01/2018

COM11.1	**Voice over Internet Protocol (VoIP) in En-Route** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 01/01/2022		**67%**	**Late**
	-			
ASP: VCS VoIP gateway for inter-centre telephony is technically installed. Operational use is planned during 2021 only among ANS CR units and Military units. Further international communication trials and operational use will follow. Support for VoIP links to the ground station requires complete upgrade of VCS system, which will follow after the implementation of new main ATM system (project Neopteryx) in 2022. **MIL: Completed.**				**31/12/2024**
ASP (By:01/2022)				
CZ Air Force	-	VoIP	100%	Completed 31/12/2018
FDD	-	VoIP	100%	Completed 31/12/2018
ASP ANS CR	VCS VoIP gateway for inter-centre telephony is technically installed. Operational use is planned during 2021 only among ANS CR units and Military units. Further international communication trials and operational use will follow. Support for VoIP links to the ground station requires complete upgrade of VCS system, which will follow after the implementation of new main ATM system (project Neopteryx) in 2022.	VoIP	0%	Late 31/12/2024

COM11.2	**Voice over Internet Protocol (VoIP) in Airport/Terminal** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2023		**50%**	**Late**
	-			
VoIP A/G communication and inter-center telephony at regional TWRs are in operational use. Support for VoIP links to the ground station for APP/TWR Prague and regional APPs requires complete upgrade of VCS system planned for 2024 after the implementation of new main ATM system (project Neopteryx).				**31/12/2024**
ASP (By:12/2023)				
ASP ANS CR	VoIP A/G communication and inter-center telephony at regional TWRs are in operational use. Support for VoIP links to the ground station for APP/TWR Prague and regional APPs requires complete upgrade of VCS system planned for 2024 after the implementation of new main ATM system (project Neopteryx).	-	50%	Late 31/12/2024

COM12	**New Pan-European Network Service (NewPENS)** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability (33 ANSPs): 01/01/2025		**100%**	**Completed**
	-			
All international connections were migrated to NewPENS.				**31/12/2019**
ASP (By:01/2025)				
ASP ANS CR	All international connections were migrated to NewPENS.	-	100%	Completed 31/12/2019
APO (By:01/2025)				
Prague Airport	-	-	0%	Not Applicable -

ENV01	**Continuous Descent Operations (CDO)** ***Timescales:*** Initial operational capability: 01/07/2007 Full operational capability: 31/12/2023		**0%**	**Not yet planned**
LKPR - Praha Airport				
CDO is provided by "distance-to-go" information to A/C. Appropriate STAR changes under evaluation. Target date has not been set.				-
ASP (By:12/2023)				
ASP ANS CR	CDO is provided by "distance-to-go" information to A/C. Appropriate STAR changes under evaluation. Target date has not been set.	-	0%	Not yet planned -
APO (By:12/2023)				
Prague Airport	Implementation depends on ASP plans.	-	0%	Not Applicable -

FCM03	**Collaborative Flight Planning** ***Timescales:*** Initial operational capability: 01/01/2000 Full operational capability: 01/01/2022		**85%**	**Late**
-				
AFP messages were technically implemented, but not in operational use yet. Full implementation is expected in 2022.				**31/12/2022**
ASP (By:01/2022)				
ASP ANS CR	AFP messages were technically implemented, but not in operational use yet. Full implementation is expected in 2022.	-	85%	Late 31/12/2022

FCM04.2	**Short Term ATFCM Measures (STAM) - Phase 2** ***Timescales:*** Initial operational capability: 01/11/2017 Full operational capability: 01/01/2022		**100%**	**Completed**
-				
STAM Phase 2 is not covered by Eurocontrol tool, but by ASP tool called TCM (Traffic Complexity Manager, launched in 2018, upgraded in 2019)				**31/12/2018**
ASP (By:01/2022)				
ASP ANS CR	STAM Phase 2 requirements covered by ASP tool -TCM (Traffic Complexity Manager).	-	100%	Completed 31/12/2018

FCM05	**Interactive Rolling NOP** ***Timescales:*** Initial operational capability: 01/09/2013 Full operational capability: 01/01/2022		**25%**	**Late**
	-			
Project objectives will be accomplished by developing a national ASM tool. The national ASM tool will also be interconnected to the military ASM tool and interoperable with NM. For the military, the decision has not been taken yet, however the MIL will closely cooperate with civil side. MIL is considered as low key stakeholder. **AT FAB CE level implementation of interactive rolling NOP is planned through upgrade of the automated ASM support system with the capability of AIXM 5.1 B2B data exchange with NM and Perform an integration of the automated ASM support systems with the Network. All these projects will be fulfilled in accordance with the NM support, the guidance and the relevant provisions of the NM B2B Reference Manuals.**				**31/12/2024**
ASP (By:01/2022)				
ASP ANS CR	-	-	0%	Planned 31/12/2021
APO (By:01/2022)				
Prague Airport	-	-	50%	Late 31/12/2024

FCM06	**Traffic Complexity Assessment** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2022		**100%**	**Completed**
	-			
The objective is to provide support in the management of the traffic load over LKAA area. Support is primarily provided to Prague ACC Flow Manager position. Secondary service is provided to Prague ACC/APP control sectors.				**31/12/2019**
ASP (By:01/2022)				
ASP ANS CR	The objective is to provide support in the management of the traffic load over LKAA area. Support is primarily provided to Prague ACC Flow Manager position. Secondary service is provided to Prague ACC/APP control sectors.	Traffic Complexity Tools	100%	Completed 31/12/2019

INF07	**Electronic Terrain and Obstacle Data (eTOD)** ***Timescales:*** Initial operational capability: 01/11/2014 Full operational capability: 01/01/2019		**69%**	**Late**
		-		
Planned for 12/2019.				**31/12/2022**
REG (By:01/2019)				
MoT CR	The national policy on TOD is covered by relevant provisions of the Aviation Act No 49/1997 Coll. and by associated Ministerial Decree No 108/1997 Coll.	-	100%	Completed -
CAA CR	The current NSA processes will be used to verify implementation of the requirements at ANS providers and other stakeholders. The regulatory compliance shall be conducted in compliance with national TOD policy and Implementation program.	-	5%	Late 31/12/2022
ASP (By:01/2019)				
ASP ANS CR	ETOD is maintained by AIS ANS CR. Terrain data supplied by MIL are in conformity with requirements of ICAO Annex 15. Data supplied by airports operators do not fulfill all requirements of the Annex.	-	100%	Completed 31/12/2014
APO (By:01/2019)				
Prague Airport	-	-	70%	Late 31/12/2022

INF08.1	**Information Exchanges using the SWIM Yellow TI Profile** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 01/01/2025		**8%**	**Ongoing**
		-		
ANS CR has implemented Traffic Complexity Module in FDP system, which uses data exchange between ASP and NMOC. Further development of these services are planned.				**31/12/2024**
ASP (By:01/2025)				
ASP ANS CR	ANS CR has implemented Traffic Complexity Module in FDP system, which uses data exchange between ASP and NMOC. Further development of these services are planned.	Meteorological Information Exchange Service / Traffic Complexity Tools	8%	Ongoing 31/12/2024
MIL (By:01/2025)				
MAA	-	-	0%	Not Applicable -
APO (By:01/2025)				
Prague Airport	-	-	0%	Not Applicable -

ITY-ACID	**Aircraft Identification** ***Timescales:*** Entry into force of the Regulation: 13/12/2011 System capability: 02/01/2020		**100%**	**Completed**
	-			
The objective has been achieved by implementation of Mode S capability.				**31/12/2012**
ASP (By:01/2020)				
ASP ANS CR	All technical requirements completed. Regional airports procedures to be finalized and declared to NM this year.	-	100%	Completed 31/12/2012

ITY-ADQ	**Ensure Quality of Aeronautical Data and Aeronautical Information** ***Timescales:*** Entry into force of the regulation: 16/02/2010 Article 5(4)(a), Article 5(4)(b) and Article 6 to 13 to be implemented by: 30/06/2013 Article 4, Article5(1) and Article 5(2), Article 5(3) and Article 5(4)(c) to be implemented by: 30/06/2014 All data requirements implemented by: 30/06/2017		**30%**	**Late**
	-			
The working group at national level was established. Part of the requirements are fulfilled as a part of the standard NSA oversight process with regard to ICAO and SES legislation requirements. The objective will be completed when ANS CR provides new AIM system, which is planned for 2021. **MIL has its own system. The upgrade of MIL systems to be fully compliant with Regulation (EC) 73/2010 is planned for 2022.**				**31/12/2022**
REG (By:06/2017)				
CAA CR	The working group at national level was established and the meetings are organized on ad-hoc basis when required. Additional working group between CAA/NSA and ANS CR (ANSP) has been established with aim to report the status of the implementation of the requirements stemming from regulation 73/2010 (Reg. (EU) 2020/469).	-	53%	Late 31/12/2021
FDD	MIL has its own system. The upgrade of MIL systems to be fully compliant with Regulation (EC) 73/2010 is planned for 2022. The project with Italian IDS has been delayed due to Covid-19.	-	10%	Late 31/12/2022
MAA	The working group at national level was established. MIL has its own system. The upgrade of MIL systems to be fully compliant with Regulation (EC) 73/2010 is planned for 2022.	-	10%	Late 31/12/2022
ASP (By:06/2017)				
FDD	MIL has its own system. The upgrade of MIL systems to be fully compliant with Regulation (EC) 73/2010 is planned for 2022. The project with Italian IDS has been delayed due to Covid-19.	-	14%	Late 31/12/2022
CZ Air Force	The working group at national level was established. MIL has its own system. The upgrade of MIL systems to be fully compliant with Regulation (EC) 73/2010 is planned for 2022.	-	14%	Late 31/12/2022
ASP ANS CR	The working group at national level was established. Part of required actions are implemented; see details below. The objective will be completed when ANS CR provides new AIM system planned for 2021.	-	41%	Late 31/12/2021
APO (By:06/2017)				
Prague Airport	The working group at national level was established and all required actions including time schedule are in preparation. APO is in process of SW procurement to meet the requirements.	-	34%	Late 31/12/2022

ITY-AGDL	**Initial ATC Air-Ground Data Link Services** ***Timescales:*** Entry into force: 06/02/2009 ATS unit operational capability: 05/02/2018 Aircraft capability: 05/02/2020		**100%**	**Completed**
	-			
ANS CR implemented A/G data link services on February 6, 2017. **MIL has completed for state transport aircraft able to fly at or above FL 285 in compliance with EU regulation.**				**06/02/2017**
REG (By:02/2018)				
MoT CR	-	-	100%	Completed 31/12/2016
CAA CR	CAA CR acts accordingly based upon the ASPs implementation plans in line with established procedures.	-	100%	Completed 31/12/2016
ASP (By:02/2018)				
ASP ANS CR	ANS CR implemented A/G data link services on February 6, 2017.	-	100%	Completed 06/02/2017
MIL (By:01/2019)				
FDD	Completed for state transport aircraft able to fly at or above FL 285 in compliance with EU regulation.	-	100%	Completed 31/12/2014

ITY-AGVCS2	**8,33 kHz Air-Ground Voice Channel Spacing below FL195** ***Timescales:*** Entry into force: 07/12/2012 New and upgraded radio equipment: 17/11/2013 New or upgraded radios on State aircraft: 01/01/2014 Interim target for freq. conversions: 31/12/2014 All radio equipment: 31/12/2017 All frequencies converted: 31/12/2018 State aircraft equipped, except those notified to EC: 31/12/2018 State aircraft equipped, except those exempted [Art 9(11)]: 31/12/2020		**100%**	**Completed**
	-			
NSA has enforced the requirements for voice channels spacing for new introduced radios since 2013. The safety oversight of changes in ATM will be performed as a standard procedure in terms defined by AIC C 02/13 with regard to Implementing Regulation (EU) No 1079/2012. According to AIC A 8/15, the conversion of Frequency Plan was scheduled in 3 steps (from November 2016 to November 2017).				**31/12/2017**
REG (By:12/2018)				
MoT CR	According to AIC 8/15, the conversion of Frequency Plan was scheduled in 3 steps (from November 2016 to November 2017).	-	100%	Completed -
FDD	-	-	100%	Completed 31/12/2017
MAA	-	-	100%	Completed 31/12/2017
ASP (By:12/2018)				
MAA	According to AIC 8/15, the conversion of the frequency was scheduled in 3 steps (from November 2016 to November 2017).	-	100%	Completed 31/12/2017
ASP ANS CR	According to AIC A 8/15, the conversion of Frequency Plan was scheduled in 3 steps (from November 2016 to November 2017). ASP followed the Transition plan developed by MoT. RCOM system was upgraded in 2017.	-	100%	Completed 31/12/2017
FDD	According to AIC 8/15, the conversion of Frequency Plan was scheduled in 3 steps (from November 2016 to November 2017).	-	100%	Completed 31/12/2017
CZ Air Force	According to AIC 8/15, the conversion of the frequency was scheduled in 3 steps (from November 2016 to November 2017).	-	100%	Completed 31/12/2017
MIL (By:12/2020)				
CZ Air Force	MIL follows the national plan established by MoT with agreement of MoD.	-	100%	Completed 31/12/2017
FDD	MIL follows the national plan established by MoT with agreement of MoD.	-	100%	Completed 31/12/2017
APO (By:12/2018)				
CZ Air Force	-	-	100%	Completed 31/12/2017
ASP ANS CR	-	-	100%	Completed 31/12/2017
Prague Airport	-	-	0%	Not Applicable -

ITY-FMTP	**Common Flight Message Transfer Protocol (FMTP)** ***Timescales:*** Entry into force of regulation: 28/06/2007 All EATMN systems put into service after 01/01/09: 01/01/2009 All EATMN systems in operation by 20/04/11: 20/04/2011 Transitional arrangements: 31/12/2012 Transitional arrangements when bilaterally agreed between ANSPs: 31/12/2014		**100%**	**Completed**
	-			
FMTP has already been implemented and is already operationally used internally (ANS CR, MIL, regional airports) and externally with exception of PL.				**31/12/2014**
ASP (By:12/2014)				
CZ Air Force	For MIL, all actions are completed. IPv4 protocol is used internally. There is a translation device for conversion from IPv4 to IPv6 on communication interface with ANS CR.	-	100%	Completed 31/12/2014
FDD	For MIL all actions are completed. IPv4 protocol is used internally. There is a translation device for conversion from IPv4 to IPv6 on communication interface with ANS CR.	-	100%	Completed 31/12/2014
ASP ANS CR	For ANS CR, all actions are completed. FMTP implemented with neighbors except PL. IPv4 protocol is used internally. There is a translation device for conversion from IPv4 to IPv6 on communication interface with neighboring States.	-	100%	Completed 31/12/2014
MIL (By:12/2014)				
FDD	Completed	-	100%	Completed 31/12/2014
CZ Air Force	Completed	-	100%	Completed 31/12/2014

ITY-SPI	**Surveillance Performance and Interoperability** ***Timescales:*** Entry into force of regulation: 13/12/2011 ATS unit operational capability: 12/12/2013 EHS and ADS-B Out in transport-type State aircraft : 07/12/2020 ELS in transport-type State aircraft : 07/12/2020 Ensure training of MIL personnel: 07/12/2020 Retrofit aircraft capability: 07/12/2020		**83%**	**Late**
	-			
ASP and REG completed. MIL ongoing.				**01/01/2024**
REG (By:02/2015)				
CAA CR	The oversight of this objective's implementation falls into the CAA CR Annual Safety and Regulatory Oversight Program.	-	100%	Completed 31/12/2013
ASP (By:02/2015)				
ASP ANS CR	-	-	100%	Completed 31/12/2013
MIL (By:12/2020)				
CZ Air Force	The most of MIL transport aircraft have been equipped by EHS and ADS-B out. Further development is planned, but depends on MIL budget limitations. The exceptions (until 01/01/2024) have been notified to the EC.	-	53%	Late 01/01/2024
FDD	The most of MIL transport aircraft have been equipped by EHS and ADS-B out. Further development is planned, but depends on MIL budget limitations.	-	53%	Late 01/01/2024

NAV03.1	**RNAV 1 in TMA Operations** ***Timescales:*** Initial operational capability: 01/01/2001 One SID and STAR per instrument RWY, where established: 25/01/2024 All SIDs and STARs per instrument RWY, where established: 06/06/2030		**100%**	**Completed**
-				
RNAV1 procedures implemented in TMA Prague in 2010. Transition plan for PBN in ANS provision (NAV03.1-ASP12) is currently under development, but it will not affect the implementation of the objective				**31/12/2020**
REG (By:06/2030)				
CAA CR	The transition plan was developed and verified by CAA/NSA on 4 Dec 2020. Nevertheless, the procedures for RNAV1 were already implemented for all IFR civilian airports.	-	100%	Completed 31/12/2020
ASP (By:06/2030)				
ASP ANS CR	RNAV1 procedures implemented in TMA Prague in 2010. Transition plan for PBN in ANS provision (NAV03.1-ASP12) is currently under development, but it will not affect the implementation of the objective.	-	100%	Completed 31/12/2010

NAV03.2	**RNP 1 in TMA Operations** ***Timescales:*** Start: 07/08/2018 All SIDs and STARs per instrument RWY, at PCP airports: 25/01/2024 One SID and STAR per instrument RWY, where established: 25/01/2024 All SIDs and STARs per instrument RWY, where established: 06/06/2030		**25%**	**Not yet planned**
-				
The Transition plan was developed and verified by CAA/NSA on 4 Dec 2020, but the implementation date is still unknown. **RNP-1 procedures with Radius to FiX are not currently necessary at Czech airports, all procedures are based on RNAV-1.**				**-**
REG (By:06/2030)				
CAA CR	The transition plan was developed and verified by CAA/NSA on the 4th Dec 2020	-	100%	Completed 31/12/2020
ASP (By:06/2030)				
ASP ANS CR	RNP-1 procedures with Radius to FiX are not currently necessary at Czech airports, all procedures are based on RNAV-1.	-	14%	Not yet planned -

NAV10	**RNP Approach Procedures to instrument RWY** ***Timescales:*** Initial operational capability: 01/06/2011 Instrument RWY ends without precision approach in EU SES States, at Non-PCP airports: 03/12/2020 Instrument RWY ends served by precision approach (including PCP airports): 25/01/2024 Instrument RWY ends without precision approach in EU SES States, at PCP airports: 25/01/2024		**100%**	**Completed**
-				
RNP approach procedures to all minima lines are implemented to all IFR RWY ends in the Czech Republic. **The objective has been reopened due to the implementation plan.**				**31/12/2020**
REG (By:01/2024)				
CAA CR	-	-	100%	Completed 31/12/2020
ASP (By:01/2024)				
ASP ANS CR	RNP approach procedures to all minima lines are implemented to all IFR RWY ends in the Czech Republic.	-	100%	Completed 31/12/2014

NAV12	**ATS IFR Routes for Rotorcraft Operations** ***Timescales:*** Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes above FL150, where established.: 03/12/2020 One rotorcraft RNP0.3, RNP01 or RNAV1 SID and STAR per instrument RWY, where established.: 25/01/2024 Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes below FL150, where established.: 25/01/2024 All rotorcraft RNP0.3, RNP01 or RNAV1 SIDs and STARs per instrument RWY, where established.: 06/06/2030		**0%**	**Not yet planned**
-				
We have currently Trial procedure – Instrument Approach for helicopters to Praha 5 – Motol (LK8036) heliport (see AIP SUP 2/20), but there is no plan for future development of these procedures due to lack of interest from helicopters operators.				**-**
REG (By:06/2030)				
ASP (By:06/2030)				
ASP ANS CR	-	-	0%	Not yet planned -

SAF11	**Improve Runway Safety by Preventing Runway Excursions** ***Timescales:*** Initial operational capability: 01/09/2013 Full operational capability: 31/01/2018		**23%**	**Late**
	-			
Implementation of SAF 11 is planned. Runway Safety Team was established during implementation of Runway Incursion Program so general requirements (Part 3.1) are already implemented. **Runway Safety Program for the Czech Republic was published on 27.10.2016 in AIC 25/16.**				**31/12/2021**
REG (By:01/2018)				
CAA CR	Documentation for the European Action Plan for the Prevention of Runway Excursions was published in 2016. Subsequent steps will follow.	-	25%	Late 31/12/2021
ASP (By:12/2014)				
ASP ANS CR	-	-	20%	Late 31/12/2021
CZ Air Force	Only MIL airport Pardubice has been considered for implementing the objective in accordance with EAPPRE; MoD uses own system on other airports.	-	10%	Late 31/12/2021
APO (By:12/2014)				
Prague Airport	-	-	100%	Completed -
CZ Air Force	Only MIL airport Pardubice has been considered for implementing the objective in accordance with EAPPRE; MoD uses own system on other airports.	-	10%	Late 31/12/2021
MAA	Only MIL airport Pardubice has been considered for implementing the objective in accordance with EAPPRE; MoD uses own system on other airports.	-	10%	Late 31/12/2021

Additional Objectives for ICAO ASBU Monitoring

AOM21.1	**Direct Routing** ***Timescales:*** Initial Operational Capability: 01/01/2015 Full Operational Capability: 31/12/2017		**100%**	**Completed**
	-			
Direct routing has been implemented since February 5, 2015.				**05/02/2015**
ASP (By:12/2017)				
ASP ANS CR	Direct routing has been implemented since February 5, 2015.	-	100%	Completed 05/02/2015

ATC02.2	**Implement ground based safety nets - Short Term Conflict Alert (STCA) - level 2 for en-route operations** ***Timescales:*** Initial operational capability: 01/01/2008 Full operational capability: 31/01/2013		**100%**	**Completed**
	-			
STCA function is fully implemented for ACC/APP Prague, APP Ostrava, APP Karlovy Vary and APP Brno (9/2018). **The system is implemented also by MIL and upgrade to OAT traffic specifications and validation was done in 2012.**				**31/12/2012**
ASP (By:01/2013)				
CZ Air Force	Military system is also equipped with the STCA functionality, which was successfully tested. An upgrade regarding to MIL traffic specification (OAT) and validation was done.	-	100%	Completed 31/12/2012
ASP ANS CR	STCA function is fully implemented for ACC/APP Prague, APP Ostrava, APP Karlovy Vary and APP Brno (9/2018).	-	100%	Completed -

ATC16	**Implement ACAS II compliant with TCAS II change 7.1** ***Timescales:*** Initial operational capability: 01/03/2012 Full operational capability: 31/12/2015		**100%**	**Completed**
	-			
ASP has completed in 03/2012. **MIL completed for VIP transport a/c only (type Airbus 319-115 and Challenger CL 601-3A).**				**31/12/2015**
REG (By:12/2015)				
CAA CR	-	-	100%	Completed 31/12/2015
ASP (By:03/2012)				
ASP ANS CR	-	-	100%	Completed 31/03/2012
MIL (By:12/2015)				
FDD	MIL completed for VIP transport a/c only (type Airbus 319-115 and Challenger CL 601-3A).	-	100%	Completed 31/12/2015
CZ Air Force	MIL completed for VIP transport a/c only (type Airbus 319-115 and Challenger CL 601-3A).	-	100%	Completed 31/12/2015

FCM01	**Implement enhanced tactical flow management services** ***Timescales:*** Initial operational capability: 01/08/2001 Full operational capability: 31/12/2006		**100%**	**Completed**
	-			
The implementation is completed. Some SLoAs are considered as not applicable. Military system receives and processes ATFM data via ANS CR.				**31/12/2014**
ASP (By:07/2014)				
ASP ANS CR	ANS CR has already implemented processing of CPR and FSA messages for ATFM purposes. Processing of FSA in case of rerouting inside FDPA and in case of aircraft holding is considered as not applicable in terms of cost/benefit ratio. Processing of DPI is part of A-CDM Project.	-	100%	Completed 31/12/2014
MIL ASP	Military system receives and processes ATFM data via ANS CR.	-	100%	Completed 31/12/2014

ITY-COTR	**Implementation of ground-ground automated co-ordination processes** ***Timescales:*** Entry into force of Regulation: 27/07/2006 For putting into service of EATMN systems in respect of notification and initial coordination processes: 27/07/2006 For putting into service of EATMN systems in respect of Revision of Coordination, Abrogation of Coordination, Basic Flight Data and Change to Basic Flight Data: 01/01/2009 To all EATMN systems in operation by 12/2012: 31/12/2012		**100%**	**Completed**
	-			
All mandatory requirements of IR COTR are implemented.				**31/12/2014**
ASP (By:12/2012)				
ASP ANS CR	All mandatory requirements of IR COTR are implemented. Implementation of "Logon Forward" (ASP08) and "Next Authority Notified" (ASP09) processes is planned in frame of A/G Datalink implementation with the implementation date in 2017.	-	100%	Completed -
MIL (By:12/2012)				
FDD	-	-	100%	Completed 31/12/2014
CZ Air Force	Completed	-	100%	Completed 31/12/2014

Local Objectives

Note: Local Objectives are addressing solutions that are considered beneficial for specific operating environments, therefore for which a clear widespread commitment has not been expressed yet. They are characterised with no deadline and voluntary applicability area.

AOP14	**Remote Tower Services** ***Applicability and timescale: Local***	**0%**	**Not yet planned**
LKPR - Praha Airport			
There is currently no plan to implement Remote Tower Services in the Czech Republic.			**-**

AOP15	**Enhanced traffic situational awareness and airport safety nets for the vehicle drivers** ***Applicability and timescale: Local***	**0%**	**Not yet planned**
LKPR - Praha Airport			
There is not a plan for implementation yet.			**-**

AOP16	**Guidance assistance through airfield ground lighting** ***Applicability and timescale: Local***	**0%**	**Not yet planned**
LKPR - Praha Airport			
There is not a plan for implementation yet.			**-**

AOP17	**Provision/integration of departure planning information to NMOC** ***Applicability and timescale: Local***	**0%**	**Not Applicable**
LKPR - Praha Airport			
LKPR has already deployed A-CDM, there is currently no plan for regional airports.			**-**

AOP18	**Runway Status Lights (RWSL)** ***Applicability and timescale: Local***	**0%**	**Not yet planned**
LKPR - Praha Airport			
Comments from CAA: **With regards to Airport Provider´s supervision, the system RWSL is not actually used on the IFR airports because it is not required by ICAO or EASA Regulation. Possibility of future implementation is under consideration.**			**-**

ATC18	**Multi-Sector Planning En-route - 1P2T** ***Applicability and timescale: Local***	**0%**	**Not yet planned**
-			
There is currently no plan for the implementation.			**-**

ATC19	**Enhanced AMAN-DMAN integration** ***Applicability and timescale: Local***	**0%**	**Not yet planned**
-			
AMAN is still under development, DMAN is no implemented yet. Therefore, the AMAN/DMAN integration for LKPR is currently not planned.			**-**

ATC20	**Enhanced STCA with down-linked parameters via Mode S EHS** ***Applicability and timescale: Local***	**100%**	**Completed**
-			
STCA function for ACC Praha works also based on on-board downlink data via Mode S EHS protocol.			**-**

ENV02	Airport Collaborative Environmental Management *Applicability and timescale: Local*	100%	Completed
LKPR - Praha Airport			
CEM was officially launched in June 2010. Meetings are organized twice a year and on demand. Agreements on the care for the environment and environmental impacts if the APO operations were signed with subjects concerned.			31/12/2012

ENV03	Continuous Climb Operations (CCO) *Applicability and timescale: Local*	0%	Not yet planned
LKPR - Praha Airport			
There is no plan at the moment for application of CCO due to high traffic complexity. Future implementation of CCO is intended, but the target date has not been set.			-

6. Annexes

A. Specialists involved in the ATM implementation reporting for Czech Republic

LSSIP Co-ordination

LSSIP Focal Points	Organisation	Name
LSSIP National Focal Point for Czech Republic	ANS CR	Tomáš TRŽICKÝ
LSSIP Focal Point for NSA/CAA	CAA	Jaroslav PEKÁREK
LSSIP Focal Point for ANSP	ANS CR	Martin LINDNER
LSSIP Focal Point for Airport	Prague Airport	Vít VOJTĚCH
LSSIP Focal Point for Military	MoD	Miloslav BENEŠ

Focal Point for NETSYS	ANS CR	Vladimir CIZEK
Focal Point for SUR	ANS CR	Ivan UHLIR

B. National stakeholders organisation charts

CZECH REPUBLIC AVIATION ORGANISATIONAL STRUCTURE

The overall organisational structure of the aviation regulation in the Czech Republic is represented in the following chart.

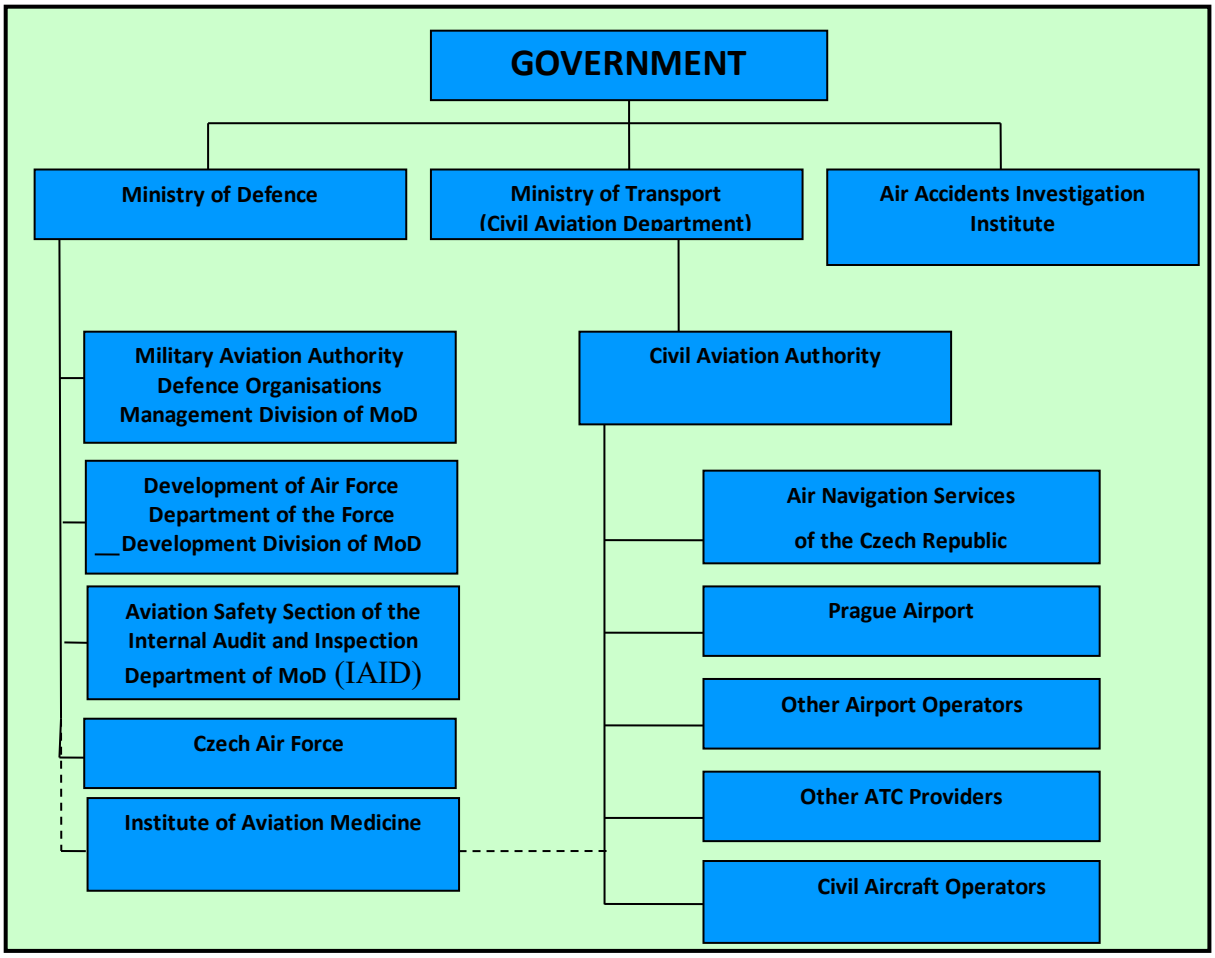
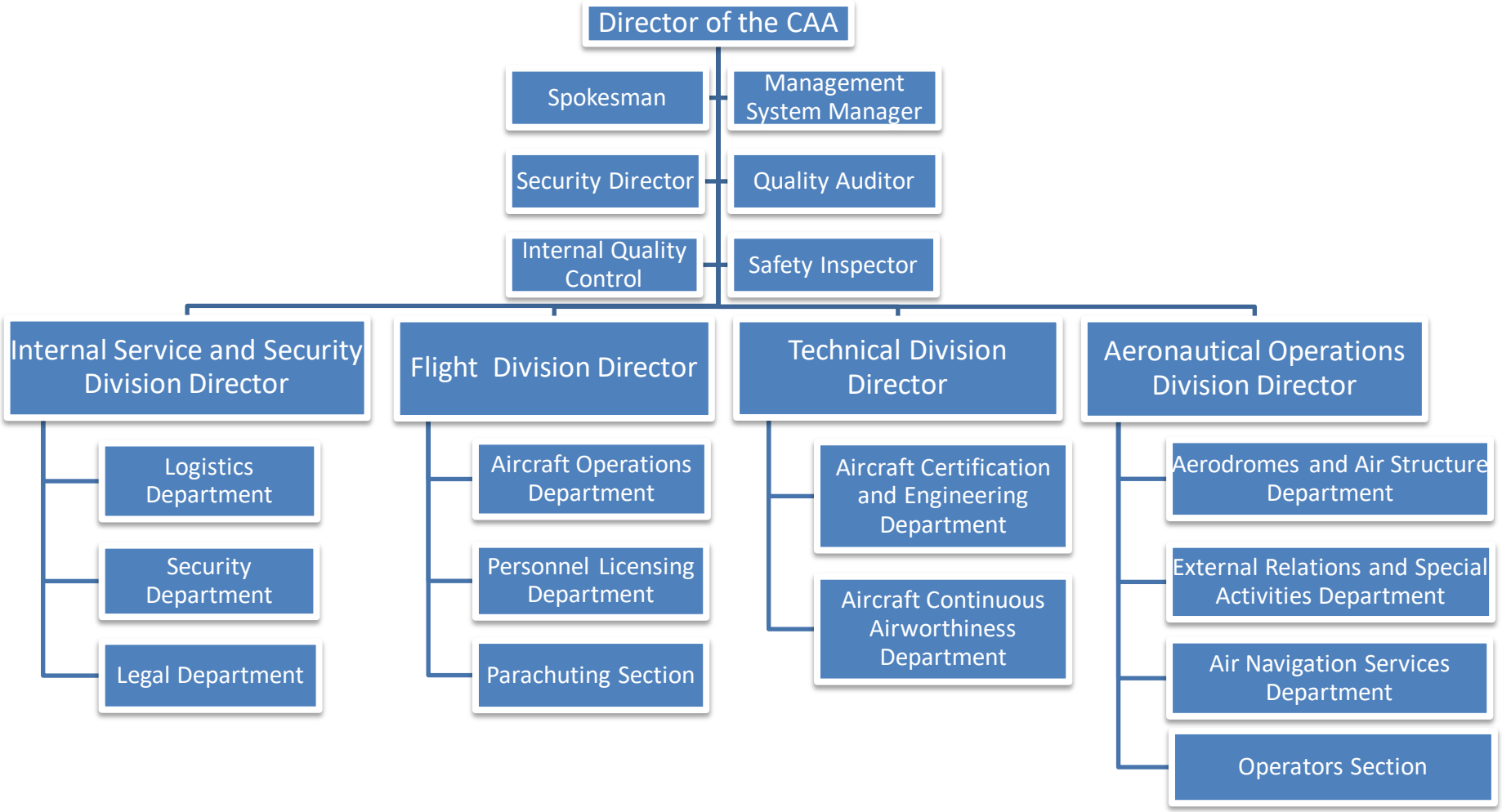


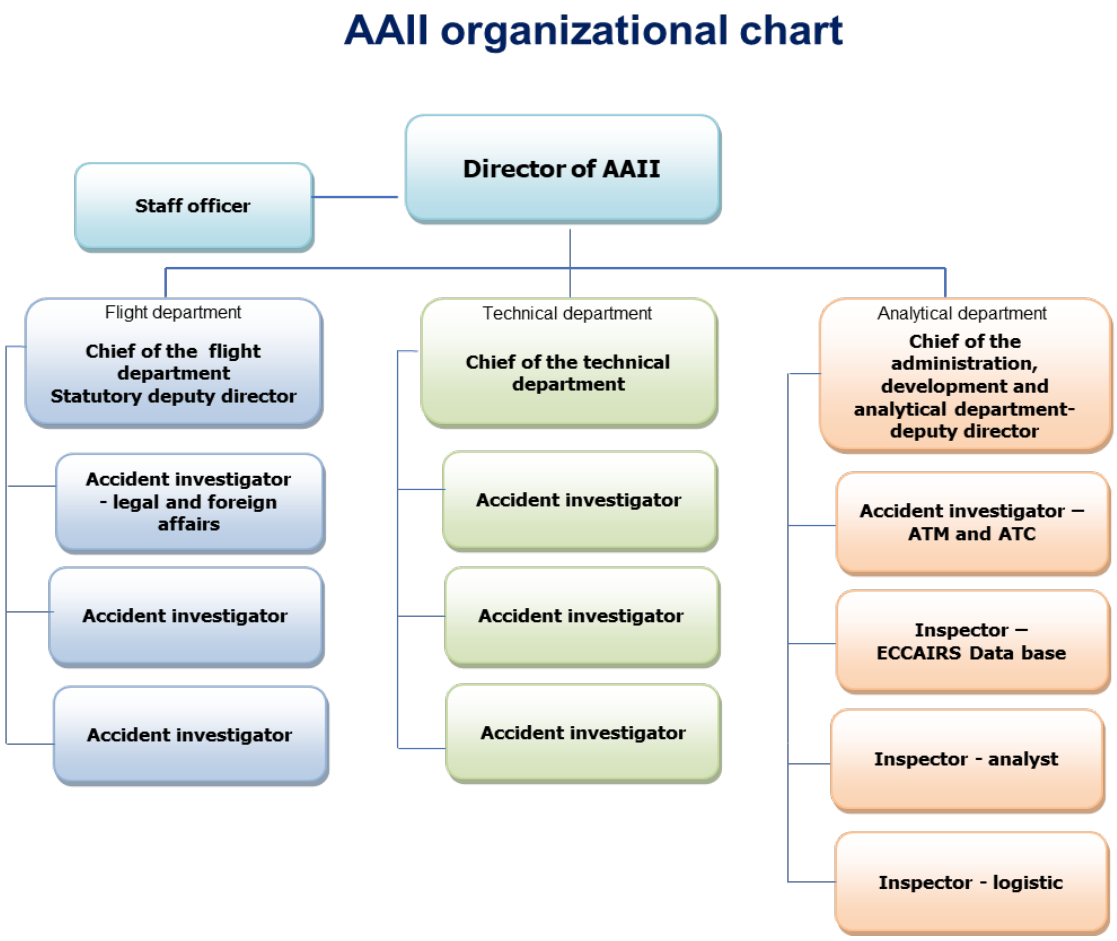
Figure: Organisational structure of the Czech Republic Aviation Regulation

CAA CR ESTABLISHMENT

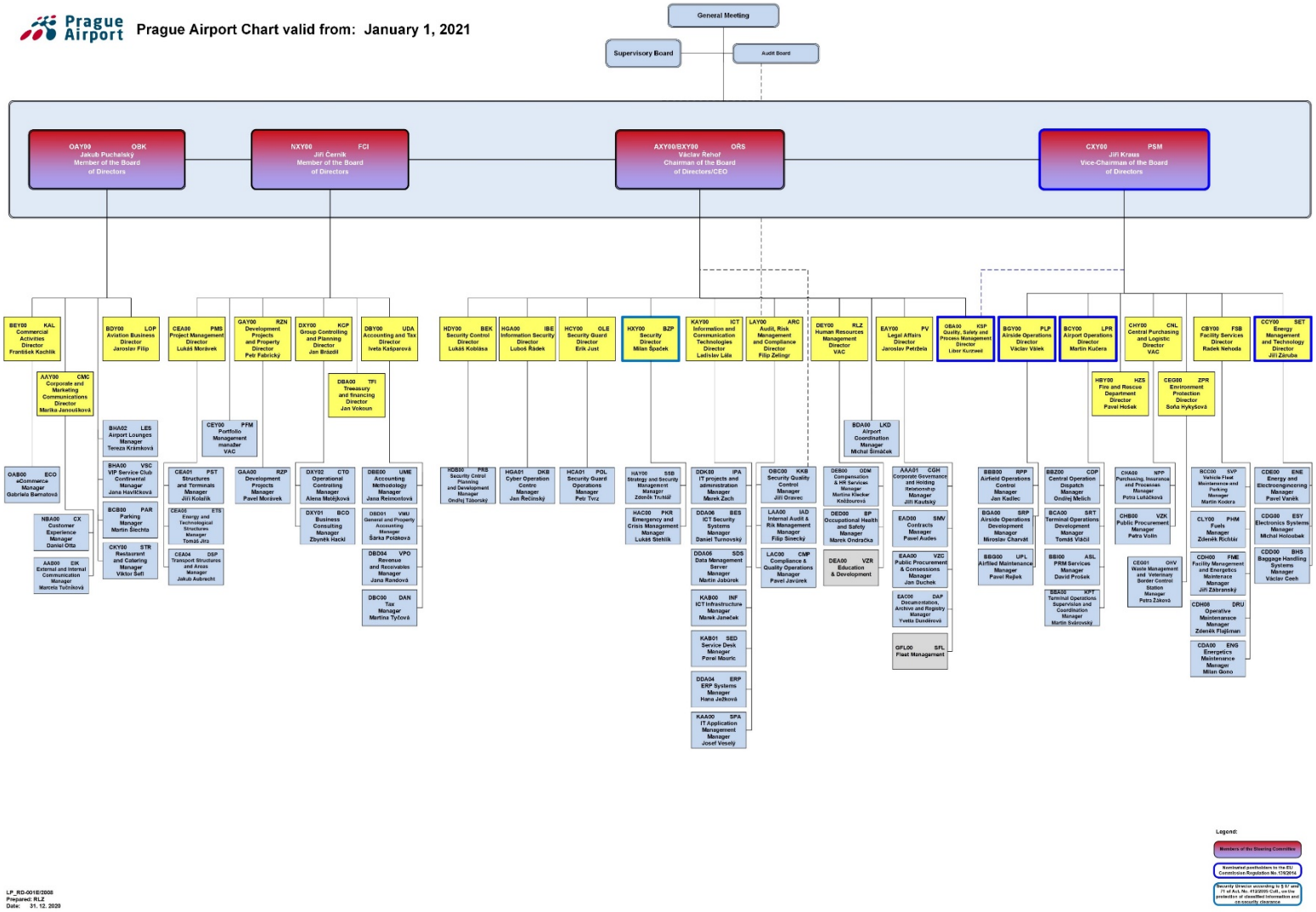
The Civil Aviation Authority of the Czech Republic was established by the Czech Civil Aviation Act as a government agency in charge of civil aviation. It is subordinate to the Ministry of Transport. See also current detailed organizational structure at: https://www.caa.cz/en/authority/organisational-structure/. Simplified CAA CR organizational structure:



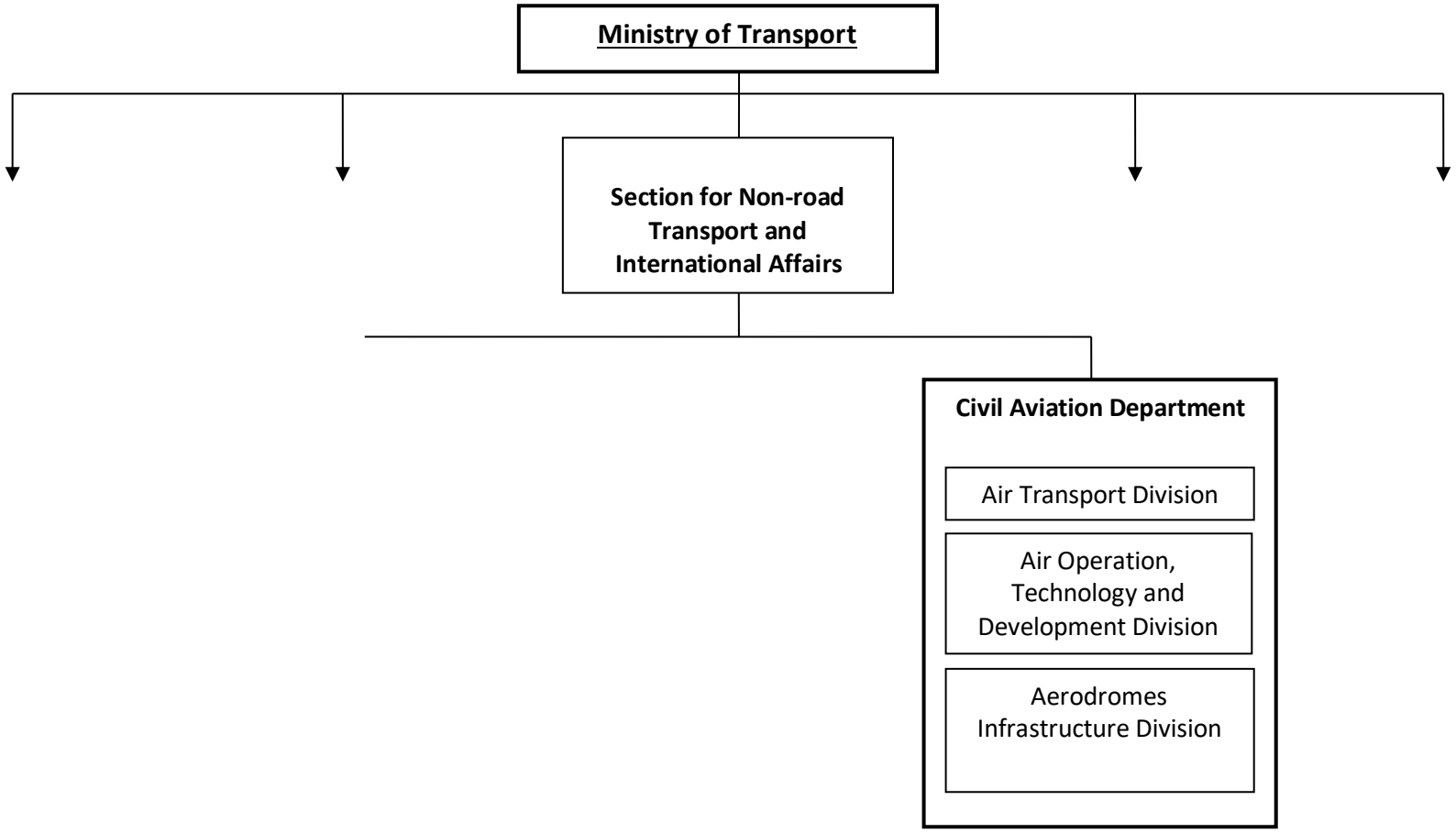
The overall organisational chart of the AAII is shown in Figure below:



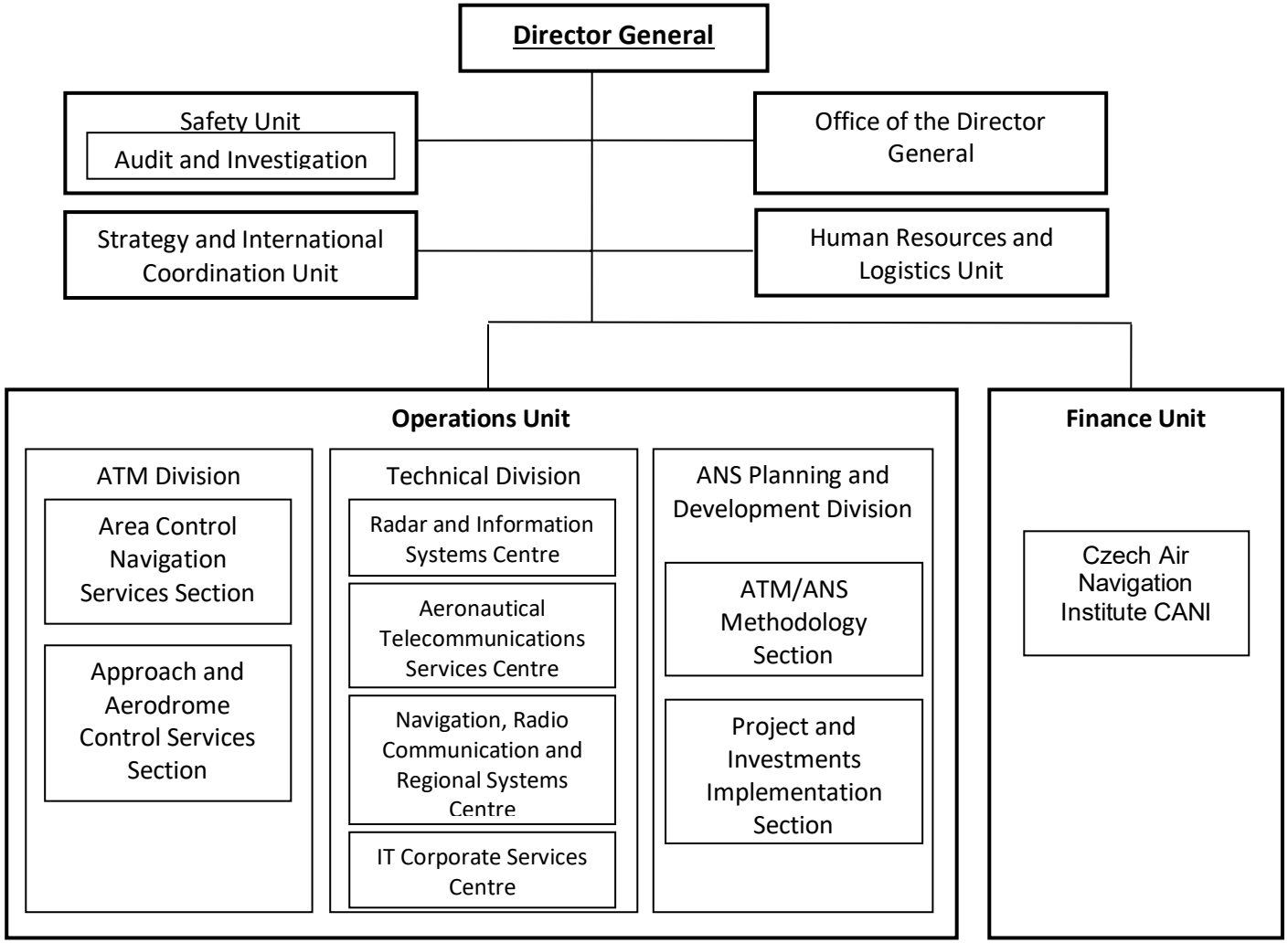
Prague Airport Organisational Chart



SIMPLIFIED ORGANISATIONAL CHART OF THE MINISTRY OF TRANSPORT



SIMPLIFIED ORGANISATIONAL CHART OF ANS CR (as of January 1, 2021)



C. Implementation Objectives' links with other plans

The table below (extracted from the MPL3 Progress Plan 2020) shows for each implementation objective, the mapping of the L3 implementation Objectives to the corresponding SESAR Essential Operational Changes, the SESAR Solutions, the Deployment Program families, the ICAO ASBU, the EASA EPAS, the Network Strategy Plan, the Airspace Architecture Study Transition Plan (AAS TP) Milestones and the SESAR Key Features.

EOC	Level 3 Implementation Objectives	SESAR Sol.	DP family	ICAO ASBUs	EPAS	NSP	AAS TP	KF
CNS	ATC21-Composite surveillance ADS-B/WAM	#114	-	ASUR-B0/1 ASUR-B0/2	RMT.0679 RMT.0519	SO8/3 SO8/4	-	EAI
	COM10 - Migration from AFTN to AMHS	-	-	COMI B0/7	-	-	-	EAI
	COM11.1 - Voice over Internet Protocol (VoIP) in En-Route	-	3.1.4 3.2.1	COMI B2/1	-	SO8/4	AM-1.3	EAI
	COM11.2 - Voice over Internet Protocol (VoIP) in Airport/Terminal	-	-	COMI B2/1	-	SO8/4	-	EAI
	ITY-ACID - Aircraft identification	-	-	-	-	SO8/2	-	EAI
	ITY-AGDL - Initial ATC air-ground data link services	-	6.1.1 6.1.3 6.1.4	COMI B0/4 COMI B1/2	RMT.0524	SO4/1 SO8/3	AM-1.1	EAI
	ITY-AGVCS2 – 8.33 kHz Air-Ground Voice Channel Spacing below FL195	-	-	-	-	SO8/1	-	EAI
	ITY-SPI - Surveillance performance and interoperability	-	-	ASUR B0/1 ASUR B0/3	RMT.0679 RMT.0519	SO8/3 SO8/4	-	EAI
	NAV10 - RNP Approach Procedures to instrument RWY	#103	1.2.1 1.2.2	APTA B0/1 APTA B1/1 NAVS B0/2	RMT.0639 RMT.0445	SO6/5	-	AATS
	NAV11 - Precision Approach using GBAS CAT II/III based on GPS L1	#55	-	NAVS B1/1	-	-	-	HPO
iN	AOM13.1 - Harmonise OAT and GAT handling	-	-	-	-	SO6/2	-	OANS
	AOP11 - Initial Airport Operations Plan	#21	2.1.4	NOPS B1/3	-	SO6/2	-	HPAO

	AOP17 – Provision/integration of DPI to NMOC	#61	-	NOPS B0/4	-	-	-	HPAO
	COM12 - NewPENS	-	5.1.2 5.2.1	COMI B1/1	-	SO2/3 SO2/4 SO8/3 SO8/4	-	EAI
	FCM03 - Collaborative flight planning	-	4.2.3	NOPS B0/2	-	SO4/2 SO5/1 SO5/6	AM-1.14	OANS
	FCM04.2 - STAM phase 2	#17	4.1.2	NOPS B1/1	-	SO4/3 SO5/4	AM-1.11	OANS
	FCM05 - Interactive rolling NOP	#20, #21	4.2.2 4.2.4	NOPS B1/2	-	SO2/1 SO2/2 SO2/3 SO2/4	AM-1.12	OANS
	FCM06 - Traffic Complexity Assessment	#19	4.4.2	NOPS B1/4	-	SO4/3 SO5/4	AM-1.13	OANS
	FCM09 - Enhanced ATFM Slot swapping	#56	-	NOPS B1/7	-	SO6/1	-	OANS
	INF08.1 - Information Exchanges using the SWIM Yellow TI Profile	#35, #46	5.1.3, 5.1.4, 5.2.1, 5.2.2, 5.2.3, 5.3.1, 5.4.1, 5.5.1, 5.6.1	AMET B2/4 DAIM B2/1 SWIM B3/1	-	SO2/4 SO2/5 SO5/2 SO5/5	AM-1.5	EAI
	INF08.2 - Information Exchanges using the SWIM Blue TI Profile	#28, #46	5.1.3, 5.1.4, 5.2.1, 5.2.2, 5.2.3, 5.6.2	SWIM B3/1, TBO B3/1	-	SO5/2SO5/5	AM-9.1	EAI
dS	INF07 - Electronic Terrain and Obstacle Data (e-TOD)	-	1.2.2	DAIM B1/4 DAIM B1/4	RMT.0703 RMT.0722	SO2/5	-	EAI
	INF09 - Digital Integrated Briefing	#34		DAIM B1/7, AMET B1/4	-	SO2/5	-	EAI
	ITY-ADQ - Ensure quality of aeronautical data and aeronautical information	-	1.2.2	-	RMT.0722 RMT.0477	SO2/5	-	EAI
U-S	-	-	-	-	-	-	-	-

vS	AOP14 – Remote Tower Services	#12, #71, #52, #13	-	RATS B1/1	RMT.0624	-	-	HPAO
ATp	AOP04.1 - A-SMGCS Surveillance (former Level 1)	#70	2.2.1	SURF B0/2	MST.029	SO6/6	-	HPAO
	AOP04.2 - A-SMGCS RMCA (former Level 2)	-	2.2.1	SURF B0/3	MST.029	SO6/6	-	HPAO
	AOP05 - Airport CDM	#106	2.1.1 2.1.3	ACDM B0/2 NOPS B0/4 RSEQ B0/2	-	SO6/4	-	HPAO
	AOP10 - Time Based Separation	#64	2.3.1	WAKE B2/7	-	SO6/5	-	HPAO
	AOP12 - Improve RWY and Airfield safety with CATC detection and CMAC	#02	2.1.2 2.5.1	SURF B1/3	MST.029	SP6/6	-	HPAO
	AOP13 - Automated assistance to Controller for Surface Movement planning and routing	#22 #53	2.4.1	SURF B1/4	MST.029	SO6/6	-	HPAO
	AOP15 - Safety Nets for vehicle drivers	#04	-	SURF B2/2	MST.029	-	-	HPAO
	AOP16 - Guidance assistance through airfield lighting	#47	-	SURF B1/1	MST.029	-	-	HPAO
	AOP18 - Runway Status Lights	#01	-	SURF B2/2	MST.029	-	-	HPAO
	ATC07.1 - Arrival management tools	-	1.1.1	RSEQ B0/1	-	SO4/1	-	AATS
	ATC19 - Enhanced AMAN-DMAN integration	#54	-	RSEQ B2/1	-	SO6/5 SO4/1	-	AATS
	ENV01 – Continuous Descent Operations	-	-	APTA B0/4	-	SO6/5	-	AATS
	ENV02 – Airport Collaborative Environmental Management	-	-	-	-	-	-	HPAO
	ENV03 – Continuous Climb Operations	-	-	APTA B0/5	-	SO6/5	-	AATS
	NAV03.1 – RNAV1 in TMA Operations	#62	-	APTA B0/2	RMT.0639 RMT.0445	SO6/5	-	AATS

	NAV03.2 – RNP1 in TMA Operations	#09, #51	1.2.3 1.2.4	APTA B1/2	RMT.0639 RMT.0445	SO6/5	-	AATS
	SAF11 - Improve runway safety by preventing runway excursions	-	-	-	MST.007 RMT.0570 RMT.0703	-	-	HPAO
dA	AOM19.1 - ASM tools to support A-FUA	#31	3.1.1	FRTO B0/2	-	SO3/2 SO3/3	AM-1.8	OANS
	AOM19.2 - ASM management of real-time airspace data	#31	3.1.2	FRTO B1/3 NOPS B1/5	-	SO3/2 SO3/3	AM-1.8	OANS
	AOM19.3 - Full rolling ASM/ATFCM process and ASM information sharing	#31	3.1.3	NOPS B1/5 FRTO B1/3	-	SO3/2 SO3/3	AM-1.8	OANS
	AOM19.4 – Management of Pre-defined Airspace Configurations	#31	3.1.4	NOPS B1/6 FRTO B1/4	-	SO3/2 SO3/3	-	OANS
	AOM21.2 - Free Route Airspace	#33, #66	3.2.1 3.2.4	FRTO B1/1	-	SO3/1 SO3/4	AM-1.6 AM-1.10 AM-5.1	AATS
	ATC12.1 - MONA, TCT and MTCD	#27, #104	3.2.1	FRTO B1/5	-	SO3/1 SO4/1	AM-1.15 AM-5.1	AATS
	ATC15.1 - Initial extension of AMAN to En-route	-	1.1.2	-	-	SO4/1	-	AATS
	ATC15.2 - Extension of AMAN to En-route	#05	1.1.2	RSEQ B1/1 NOPS B1/8	-	SO4/1	AM-1.3	AATS
	ATC17 - Electronic Dialog supporting COTR	-	3.2.1	-	-	SO3/1 SO4/1	AM-1.3	AATS
	ATC18 - Multi Sector Planning En-route – 1P2T	#63	-	FRTO B1/6	-	SO4/1	AM-4.3 AM-5.1	AATS
	ITY-FMTP - Apply a common flight message transfer protocol (FMTP)	-	-	-	-	SO8/3	AM-1.3	EAI
TBO	ATC02.8 - Ground based safety nets	-	3.2.1	SNET B0/1 SNET B0/2 SNET B0/3 SNET B0/4	-	SO4/1	-	AATS
	ATC02.9 - Enhanced STCA for TMAs	#60	-	SNET B1/2	MST.030	SO4/1	-	AATS

	ATC20 – Enhanced STCA with DAP via Mode S EHS	#60	-	SNET B1/1	-	SO7/2	-	AATS
M3	NAV12 – ATS IFR Routes for Rotorcraft Operations	#113	-	APTA B0/6	MST.031	SO6/5	-	AATS

D. SESAR Solutions implemented in a voluntary way[3]

These SESAR Solutions are not included yet in the ATM MP L3 Plan.

EUROCONTROL is tasked by the SJU to identify the implementation progress of functionalities corresponding to validated SESAR Solutions published in the SJU Solutions Catalogue (https://www.sesarju.eu/newsroom/brochures-publications/sesar-solutions-catalogue), for which there is no implementation Objective (yet) in the ATM MP L3 Plan. This will allow to identify early movers and to gauge the interest generated by some of these functionalities, with the view of potentially addressing them with new Implementation Objectives in the ATM MPL3 Plan.

The specific description of the new 34 SESAR Solutions implemented in a voluntary way introduced in 2020 are hosted on the LSSIP SharePoint : New SESAR Solutions non-committed - Description

A facilitated questionnaire using the existing ATM MP L3 / LSSIP methodology is added to capture information on non-committed SESAR solutions. For practical reasons, since the LSSIP 2017 cycle the questionnaire is included in the LSSIP Annex.

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
CNS CNS infrastructure and services				
#55	Precision approach using GBAS Category II/III	GBAS has limited (GBAS Local Object Consideration Areas) or no protection areas, usually located outside aircraft movement areas. This allows the reduction of runway occupancy times in LVP, reducing spacing between arrival aircraft. Use of GBAS Cat II/III eliminates ILS critical zones, enables flexible approaches, offers PA where ILS cannot due to geography and signal stability (immune to signal bends inherent in ILS), complements ILS at airports with multiple RWYs during LVP, the rationalization of some ILS thus reducing operation and maintenance costs and optimizing spectrum; offers PA at aerodromes without SBAS coverage or where PA performances cannot be achieved with SBAS. GBAS CATII/II improves resilience of airport capacity with fewer flight cancellations due to LVP in force. GBAS CATII/III will enable runway ends that are not ILS CATII/III equipped to be used for CATII/III operations as long as the runway is CATII/III qualified.	No	No

[3] Referred as 'Non-committed' SESAR solutions in the MP L3 Report.

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
#102	Aeronautical mobile airport communi-cation system (AeroMACS)	The aeronautical mobile airport communication system (AeroMACS) offers a solution to offload the saturated VHF datalink communications in the airport environment and support new services. The technical solution AeroMACS is based on commercial 4G technology and uses the IEEE 802.16 (WiMAX) standard. Designed to operate in reserved (aeronautical) frequency bands, AeroMACS can be used for ANSPs, airspace users and airport authority communications, in compliance with SESAR's future communication infrastructure (FCI) concept. AeroMACS is an international standard and supports globally harmonised and available capabilities according to ICAO Global Air Navigation Plan (GANP).	No	No
#109	Air traffic services (ATS) datalink using Iris Precursor	The Iris Precursor offers a viable option for ATS datalink using existing satellite technology systems to support initial four-dimensional (i4D) datalink capability. The technology can be used to provide end-to-end air–ground communications for i4D operations, connecting aircraft and air traffic management ground systems.	No	No
#110	ADS-B surveillance of aircraft in flight and on the surface	The SESAR solution consists of the ADS-B ground station and the surveillance data processing and distribution (SDPD) functionality. The solution also offers mitigation techniques against deliberate spoofing of the ground system by outside agents. These techniques can also be used to cope with malfunctioning of avionics equipment. SESAR has contributed to the relevant standards, such as EUROCAE technical specifications, incorporating new functionalities developed for the ADS-B ground station, ASTERIX interface specifications as well as to the SDPD specifications.	No	No
#114	Composite Surveillance ADS-B / WAM	By allowing the use of ADS-B data that has been validated against data derived in parallel by a WAM system, the system can help to reduce the number of interrogations and number of replies and therefore reduce the 1030/1090 MHz RF load and improve spectrum efficiency. It achieves this through the integration of validated data items into the WAM channel, thereby preventing a need to re-interrogate the data item. Since the two surveillance layers share hardware components, the system offers improved cost efficiency. Furthermore, the use of the system contributes to an improved security by successfully mitigating associated ADS-B threats.	No	Yes 2021

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		SESAR has contributed to the relevant standards, such as EUROCAE technical specifications for WAM and ADS-B that are implementing this "composite" concept.		
PJ.14-02-06	AeroMACs integrated with ATN, Digital Voice and Multilink	The SESAR Solution PJ14.02.06 ("AeroMACS integrated with ATN, Digital Voice and Multilink") builds upon Solution #102 (AeroMACS) published in the SESAR 1 catalogue. AeroMACS is part of the Future Communication Infrastructure supporting the Airport Surface Component and is reflected within the ICAO Global Air Navigation Plan (GANP) and the ICAO Communication Roadmap in the GANP.	No	No
PJ.14-03-04	RNP1 reversion based on DME-DME	Alternative-Position, Navigation and Timing (A-PNT) is the technological enabler related with the need to introduce ground and airborne systems that can support currently defined and standardized PBN and other CNS-based operations and provide a backup with the required level of performance in case of degradation and absence/loss of GNSS. According to the existing regulations, RNP1 navigation integrity requires the use of GNSS positioning. Therefore, the GNSS loss may become a critical issue for the design of TMA airspace complying with PBN-IR.	No	No

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#18	Calculated take-off time (CTOT) and target time of arrival (TTA)	Target times (TT) shall be applied to selected flights for ATFCM purposes to manage ATFCM at the point of congestion rather than only at departure. Where available, the target times of arrival (TTA) shall be derived from the airport operations plan (AOP). TTAs shall be used to support airport arrival sequencing processes in the en-route phase. NM's systems shall be able to adjust CTOTs based on refined and agreed TTAs at the destination airport; TTAs shall be integrated into the AOP for subsequent refinement of the NOP. Flight data processing systems may need to be adapted in order to process downlinked trajectory data (ADS-C EPP). In a first step, NM system will transmit calculated target times (TT) at the most penalising regulation reference point in addition to CTOT to all concerned users. Those users should manage this new feature so potential system upgrades should be foreseen.	No	No
#57	User-driven prioritisation process (UDPP) departure	Airspace Users are allowed to change among themselves (via the pre-departure management process in CDM airports) the priority order of flights in the pre-departure sequence. The departure time will be automatically communicated/coordinated with the Network Management Function (NMF) via the DPI message as described in the A-CDM concept.	No	No
#67	AOC data increasing trajectory prediction accuracy	Europe's vision to achieve high-performing aviation by 2035 builds on the idea of trajectory-based operations – meaning that aircraft can fly their preferred trajectory while minimising constraints due to airspace and service configurations. SESAR has introduced an early version, which makes use of flight planning data sourced from airline operational control (AOC) to help controllers optimise aircraft flight paths. This solution represents an initial step towards the extended flight plan solution and flight and flow information for a collaborative environment (FF-ICE).	No	No
PJ.09-03-02	Collaborative network management functions	Some elements of AOP/NOP information are important to consider in AU flight planning in order to better align AU and NM trajectories, improve AU fuel prediction and support target times management. These elements are: • The departure taxi time • The planned departure runways • The planned SID. With the implementation of airport CDM procedures, NM receives from most of the	DPI message impleneted in LKPR	

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		major airports up-to-date and reliable information in DPI messages and updates much more dynamically than the FOC this information in its planned trajectory thanks to live information received from airports. Therefore, this solution defines new information flows for AUs to consider same information as NM related to the departure phase of the flight.		
PJ.15-01	Sub-regional Demand Capacity Balancing Service	The purpose of the Sub-regional Demand Capacity Balancing (DCB) Service (Supporting the DCB capability within the ICAO Global Concept) is to facilitate an improved usage of the airspace at the sub-regional level, through enhanced planning and consequently more appropriate tactical intervention in support of AU and AO operations.	No	No
PJ.17-01	SWIM TI purple profile for airground advisory information sharing	The SWIM-TI Purple Profile (PP) consists of open standards based on reliable and secure SWIM technical infrastructure enabling the integration of the aircraft into the SWIM network, thus giving it access to air/ground SWIM services (e.g. uplink and downlink of meteorological and aeronautical information). It will enable operational applications to uplink meteorological and aeronautical information using SWIM, as well as downlink (e.g. aircraft provided meteorological observations) of information using SWIM.	No	No
		dS Digital AIM and MET services		
#34	Digital integrated briefing	This objective provides digital AIS data, in particular Digital NOTAM (encoded as "events" in AIXM format), and digital MET data (METAR, TAF, SIGMET in the ICAO iWXXM format) to pilots and dispatchers in the form of digital briefing products and services, which are merged (joint) with the geographical and planned flight trajectory information, and presented (visualised) in a graphical way. The digital integrated briefing is currently targeted for ground use (FOC/WOC, pre-flight briefing rooms and ARO offices). Some enablers (Digital NOTAM and digital MET data) support the use in the cockpit, in all phases of flight, while enablers for transmission into the cockpit are not yet mature (see IS-0206 Digital Integrated Briefing during flight execution phase).	No	Planned 2027

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PJ.15-10	Static aeronautical data service	The Common Service for Aeronautical Information Management significantly reduces the overall cost of providing AIM services by using a common, managed service instead of operating numerous individual national systems. Instead of duplicating aeronautical information and manually updating the aeronautical information in different Ground Systems, the Common Service for Aeronautical Information Management offers a means of maintaining and validating the aeronautical information once and centrally. The ground systems will have to replace their legacy data storage by an interface based on SWIM allowing direct access to quality assured and consistent aeronautical information.	No	No
PJ.15-11	Aeronautical digital map service	The Aeronautical Digital Map Common Service (COSER) provides users the capability to retrieve graphical representation of aeronautical data/information. The output is a standardized/harmonised graphic information that can be retrieved by individual requests demanding specific geographical areas. The retrieval can be performed using regular internet protocols or through SWIM services. Instead of having to perform the rendering of aeronautical information as a visualisation in a GIS viewer or aeronautical map over and over again for different systems, generating tremendous development efforts and potentially diverging and unharmonized representations that could potentially lead to safety risks, a harmonized visualisation for different use-cases can be provided centrally.	No	No
PJ.18-04a	Aeronautical information management (AIM) information	The Aeronautical Dataset Service supports the provision of the aeronautical information product digital data set as defined by ICAO Annex 15: AIP data set, Obstacle data set, Terrain data set, Airport mapping data set, Instrument flight procedure data set. Providing dataset in digital format will improve the consistency and quality of the data and enhance the exchange of information. The Aeronautical Dataset Service will also help service providers meet the requirements for the provision of digital dataset information required by ICAO. The service is created fully in line with the requirements and guidelines defined in the EUROCONTROL SWIM Specifications.	No	No

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PJ.18-04b-01	Meteorological (MET) information-GWMS	This solution addresses the provision of local MET information to airports and considers the use of existing sensors and MET capabilities for the measurement and generation of MET data. The Glide Wind Profile has been developed as the provider of glide wind data to the Ground Weather Management System (GWMS) using mature sources like Radar and Lidar sensors. The purpose is to enhance separation procedures based on the collected wind data. The METForTAM is an information service that provides enhanced local MET information (e.g. METEO forecasts and observations) to a specific airport (airport operational centre, APOC). The developed capability and information service aim at enhancing MET data provision capabilities in order to improve the accuracy and timely delivery of expected Meteorological conditions at an airport.	No	No
PJ.18-04b-02	Meteorological information (MET) services-Cb-global	Cb-global capability uses data from geostationary satellites to detect, track, and nowcast thunderstorms in order to provide pilots an overview of the current weather hazard situation beyond the limited view of the on-board radar. It is relevant for the upper airspace en-route and enables a pilot to strategically plan a safe and smart flight route around the thunderstorms well ahead in time instead of flying tactical manoeuvres and searching for gaps between the thunder cells.	No	No
ATp Airport and TMA performance				
#11	Continuous descent operations (CDO) using point merge	Progressive implementation of procedures for Continuous Descent Operations (CDO) and Continuous Climb Operations (CCO) in higher density traffic or to higher levels, optimised for each airport arrival/departure procedure	No	No
#23	D-TAXI service for controller-pilot datalink communications (CPDLC) application	Use of data link communications between the Tower Controllers and the flight crew during surface movement. It is based on the D-TAXI service from the CPDLC application, as standardised by RTCA SC214/EUROCAE WG78 (DO-350 & DO-351). It also includes the access to this service for end users, through the Tower CWP for the ATCO and through the aircraft DCDU for the flight crew.	No	No
#48	Virtual block control in low visibility	In low visibility conditions, the tower controller working positions are provided with Virtual Stop Bars (VSB) to improve low visibility operations and enhance controllers' situational	No	No

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	procedures (LVPs)	awareness. Virtual Stop Bars can be used by the controller to reduce block-sizes once procedural control applies. Additional controller safety nets will be available to indicate violations of Stop Bars (including Virtual Stop Bars) and to monitor aircraft for any kind of unauthorised movement (Watch Dog).		
#107	Point merge in complex terminal airspace	This new procedure design builds upon precision navigation technology (P-RNAV concept) for merging traffic into a single entry point, which allows efficient integration and sequencing of inbound traffic together with Continuous Descent Approaches (CDA).	No	No
#108	Arrival Management (AMAN) and Point Merge	Point Merge in high density environment and complex Extended TMA (E-TMA) sectors replaces radar vectoring with a more efficient and simplified traffic synchronisation mechanism that reduces communication workload and increases collective traffic predictability.	No	No
#116	De-icing management tool	The solution increases the accuracy of information related to when the procedure is going to take place, how long it will take and when the aircraft will be ready to taxi for departure, which is currently calculated by predetermined estimates. The solution means that air traffic controllers no longer need to work without situational awareness of de-icing activities and needing to make their own estimates of when aircraft are ready for departure. The solution envisages that de-icing operations are no longer characterised by the A-CDM concept as 'adverse conditions', i.e. a state that is in need of collaborative recovery procedures, but rather a part of normal operations in the winter period. The DIMT allows for the scheduling and monitoring of de-icing operations. It is an internet browser-based tool that addresses three distinct procedures for de-icing: - Remote de-icing, which occurs at a specific location on the airport away from the parking stand; - On-stand de-icing, which occurs just before the aircraft leaves its stand; and - After-push de-icing, which occurs after the aircraft has pushed back from the stand and is positioned to start taxiing after de-icing.	No	Yes
#117	Reducing Landing Minima in Low Visibility Conditions using	The SESAR Solution "Reducing landing minima in low visibility conditions using enhanced Flight vision systems (EFVS)" is intended for flight crews, and corresponds to the use of EFVS visual based technologies displayed in HUD or an equivalent display system. The objective is to	No	No

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	Enhanced Flight Vision Systems (EFVS)	provide operational credit in approach as permitted per EASA EU 965/2012 and its coming amendments (NPA 2018-06 AWO) to face to Low visibility conditions. Enabling EFVS operations with operational credits provides a greater availability of suitable destination and alternate aerodromes during periods of reduced visibility. This effectively reduces the number of weather-related delays, cancellations or diversions of flights to CAT II/III aerodromes, permits shorter routings and reduced fuel costs, a faster return to scheduled operations, and less passenger inconveniences. A unique advantage of the EFVS on board solution is that it is mainly supported by the aircraft system instead of airports and the need of complex and costly ground infrastructures as those implemented in CATII/III airports. From a global ATM network standpoint, the EFVS operation allows to retain traffic at most of secondary aerodromes by providing operational credit at most of runway ends with precision or non-precision landing minima (LPV, LNAV/ VNAV, ILS CAT1, etc.). The operational credit provided by EFVS is particularly important regarding secondary aerodromes because they usually have CAT1 or higher than CAT 1 RVR - DA/DH minima and are therefore potentially more frequently impacted by adverse weather conditions. In addition, EFVS capability is a key operational advantage more especially for the business aviation community that is mainly composed of small/ medium operators with limited resources and operating frequently at small/ medium airports. Beyond operational credit, the Vision Systems such as the EFVS improves situational awareness in all weather conditions for all operators at all airports contributing supporting decision-making and increasing safety margin all the time.		
PJ.02-01-01	Optimised Runway Delivery on Final Approach	Optimised Runway Delivery (ORD) tool is the ATC support tool to enable safe, consistent and efficient delivery of the required separation or spacing between arrival pairs on final approach to the runway-landing threshold. The ORD tool can be used to support the application of Distance Based and Time Based wake separation rules e.g. ICAO, RECAT-EU, PWS-A and WDS-A wake separation schemes, and aims at consistently and efficiently managing the spacing compression that occurs on short final	No	No

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		from the lead aircraft crossing the deceleration fix.		
PJ.02-01-02	Optimised Separation Delivery for Departure	"Optimised Separation Delivery for Departure" (OSD) is the ATC support to enable safe, consistent and efficient delivery of the required separation or spacing between departure pairs from the follower aircraft becoming airborne. Different variants of the tool have been developed in SESAR 2020 Wave 1. These variants include an automatic wake count down timer and a distance indicator displayed on the tower controller's radar screen. The OSD tools can be used to support the tower controllers in the delivery of time or distance separations. This includes the departure wake separations of ICAO, RECAT-EU, PWS-D and WDS-D as well as departure route separations such as the SID separations and MDIs and ADIs. In airports that require support for both TB and DB separation and spacing rules a combined TBS / DBS variant of the OSD tool may be necessary.	No	No
PJ.02-01-03	Weather-Dependent Reductions of Wake Turbulence Separations for Departures	Weather Dependent Separations (WDS) for departures is the conditional reduction or suspension of wake separation minima on path of departures over the straight-out initial departure path, applicable under pre-defined wind conditions, so as, to enable runway throughput increase compared to the applicable standard weather independent wake separation minima. This is on the basis that under the pre-defined wind conditions the wake turbulence generated by the lead aircraft is either wind transported out of the path of the follower aircraft on final approach or has decayed sufficiently to be acceptable to be encountered by the follower aircraft. The solution covers WDS cross wind concept for departures in segregated mode runway operations.	No	No
PJ.02-01-04	Wake Turbulence Separations (for Arrivals) based on Static Aircraft Characteri-stics	Static PairWise Separation for arrivals (S-PWS-A) is the efficient aircraft type pairwise wake separation rules for final approach consisting of both the 96 x 96 aircraft type based wake separation minima (for the most common aircraft in ECAC area) and the twenty wake category (20-CAT) based wake separation minima for arrival pairs involving all the remaining aircraft types. The S-PWS are applied using a separation delivery tool; the pairwise separations will be used as input into the separation delivery tool.	No	No
PJ.02-01-05	Weather-Dependent Reductions of	"Weather-Dependent Reductions of Wake Turbulence Separations for Final Approach" aims at the optimisation of the ICAO wake	No	No

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	Wake Turbulence Separations for Final Approach	turbulence separation by use of weather-dependent separation minima on arrivals (WDS-A), applicable under given wind conditions. This allows conditional reduction or suspension of separation minima for most aircraft pairs, enabling runway throughput increase compared to ICAO scheme, whilst maintaining acceptable levels of safety. This is on the basis that under the pre-defined wind conditions the wake turbulence generated by the lead aircraft is either wind transported out of the path of the follower aircraft on final approach or has decayed sufficiently to be acceptable to be encountered by the follower aircraft.		
PJ.02-01-06	Wake Turbulence Separations (for Departures) based on Static Aircraft Characteri-stics	The Static PairWise Separation for Departures (S-PWS-D) concept optimises wake separations between departures on the initial departure path by moving from schemes defined by a small number of wake categories (4 to 7 wake categories) to a scheme defined between aircraft type pairs for the 96 aircraft types frequently at European major airports, together with a scheme defined by a larger number of wake categories (20-CAT (6-CAT + 14-CAT)) for other aircraft type combinations. S-PWS for departures are applied using the OSD tool; the pairwise separations will be used as input into the OSD tool.	No	No
PJ.02-01-07	Wake Vortex Decay Enhancing Devices	PJ.02-01-07 is a technological solution reducing the Wake Turbulence Risk via positioning of decay enhancing devices that accelerate the Wake Vortex Decay in Ground Proximity. Wake Vortex Decay Enhancing Devices, so-called plate lines, can be installed at any major European airport in order to increase safety by reducing the risk of low-altitude wake encounters.	No	No
PJ.02-03	Minimum-pair separations based on required surveillance performance (RSP)	This solution has a technical aspect and an operational aspect. On the technical aspect, the solution has validated to V3 that the application of 2NM minimum radar separation (MRS) between two aircraft established on the final approach course to the same runway sufficiently mitigates the risk of collision between them, provided the required surveillance performance (RSP) are complied with. In addition to the MRS, runway occupancy time and wake separation constraints need to be considered when determining the minimum separation or spacing required to be applied between two aircraft (the largest of the constraints will need to be applied).	No	No

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		The routine application of the 2NM minimum on final approach may require an increased consistency and accuracy in the separation delivery service on final approach. More specifically, the maximum acceptable rate of under-separated pairs on final approach may be lower if the minimum radar separation that is applied is 2NM than if it were to be 2.5 NM, because the consequences of an under-separation event are potentially more severe. For ATC facilities with a separation monitoring function (SMF) that alerts the supervisor, and also possibly the final approach controller, of a significant separation infringement on final approach, where there is currently a spacing minimum margin of 0.5 NM before the alert is triggered, consideration should be given to reducing this margin, e.g. to 0.2NM.		
PJ.02-08-01	Trajectory based Integrated Runway Sequence	Trajectory based Integrated RWY Sequence function establishes an integrated arrival and departure sequence by providing accurate Target Take off Times (TTOTs) and Target Landing Times (TLDTs), including dynamic balancing of arrivals and departures while optimising the runway throughput. It supports TWR and APP ATCOs. The look ahead Time Horizon is the time at which flights become eligible for the integrated sequence. The Stable Sequence Time Horizon is the time horizon within which no automatic swapping of flights in the sequence will occur, but landing and departure time will still be updated. The value of these time horizons is determined by the local implementation and they are not necessarily the same for arrivals and departures. The Integrated Runway Sequence is planned before Arrival flights top of decent and linked with Airport CDM procedures for departures.	No	No
PJ.02-08-02	Runway Manager	Runway Manager (RMAN), is a support tool for the Tower Supervisor to determine the optimal runway configuration and distribution of demand according to capacity and local constraints. During the Planning Phase, the RMAN checks the intentional demand versus the available capacity and it is capable of forecasting imbalances, raising alarms and alerts based on the indicators provided. In the Execution Phase, the RMAN monitors departure, arrival and overall delay and punctuality, in addition to the capacity shortage proposing changes if necessary.	No	No

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		RMAN continuously computes the optimal runway configuration and the associated Forecasted Landing (FLDT) and Take Off (FTOT) Times of arrival and departures flights that maximises the runway throughput. The Forecasted Times calculated by the RMAN are provided to the Integrated Runway Sequence using them to calculate the final Target Times. As a conclusion TLDT and TTOT calculated by the Integrated Sequence, follow the Runway DCB Plan allowing the feedback to the RMAN to monitor the status of the Runway and to detect possible imbalances.		
PJ.02-08-03	Increased Runway Throughput based on local ROT characterization (ROCAT)	The intention is to reduce the in-trail separation on final approach by taking into account the Runway Occupancy Time (ROT). A new separation minimum is computed based on the prediction of the ROT, the MRS and WTC separation. ROCAT defines separation sub-categories based on ROT, wake minima from RECAT and reduced radar separation based on ICAO approved minima. The solution consists on developing the runway occupancy minima through big data analytics to identify a ROT per aircraft type using machine learning techniques and historical data. A change in the separation minima used by ATCO for the aircraft on final approach is supported by decision support tool called LORD (Leading Optimised Runway Delivery). ROCAT can increase runway throughput where the traffic is predominantly medium aircraft, especially where RECAT is inefficient due to the lack of wide-body aircraft types.	No	No
PJ.03a-04	Enhanced visual operations	"Enhanced Visual Operations" are enabled by enhanced vision systems (EVS), synthetic vision systems (SVS), which make more aircraft capable of LVC operations and enable more efficient approach, landing and taxi and operations in LVC. This is applicable to all platforms, even if the main airline platforms have auto land capabilities to facilitate approaches in LVC. The solution consists of 3 activities focusing on: • HMD fitted with taxi routing and traffic information for easing taxi operation in degraded weather conditions. • HMD equipment as an alternative to HUD equipment for EFVS operations using legacy EFVS sensors. • Use of active sensor with improved performance to overcome the observed limitation of EVS legacy sensors.	No	No

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		The Vision based System is an on board alternative solution to heavy and expensive ground infrastructures for approach in LVC.		
PJ.03b-05	Traffic alerts for pilots for airport operations	Although TCAS has been in use since long time ago, there is currently no aircraft system to prevent runway collisions. "Traffic alerts for pilots for airport operations" improves safety during airport operations. The flight crew is provided with alert when the on-board system detects a risk of collision with an aircraft on runway or taxiways. The improvement is further split into 2 implementations: • The mainline aircraft implementation consists of an on-board system, which detects risk of collision with other traffic during runway operations and provides the Flight Crew with aural alerts (mostly 'warning' alert level). • The business aircraft implementation consists of an on-board system, which detects potential and actual risk of collision with other traffic during runway and taxiway operations and provides the Flight Crew with visual and aural alerts (indication, caution and warning alert levels).	No	No
PJ.15-02	E-AMAN Service	The E-AMAN Common Service provides functions necessary to operate Arrival Management with an extended horizon in an environment where multiple actors are involved e.g. multiple Airports, AMANs, ACCs, UACs and other interested parties, e.g. NM (i.e. Cross Boarder Arrival Management). The capability provided by the E-AMAN Federation Common Service is the capability of harmonising the output of local E-AMAN technical capabilities on different geographic or organisational levels (ECAC, FAB, however any other scaling could be considered in principle). The output of the Common Service is delivered to the end-users (e.g. adjacent ACCs / UACs). By this, relocation of functions between stakeholders is performed.	No	No
dA Fully dynamic and optimised airspace				
#10	Optimised route network using advanced RNP	Based on Advanced-RNP navigation specification, design of optimised routes e.g. spaced parallel routes, Fixed Radius Transition (FRT) and Tactical Parallel Offset (TPO) further enhanced by on board performance monitoring	No	No

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		and alerting and the execution of more predictable aircraft behaviour		
#118	Basic EAP (Extended ATC Planning) function	The basic Extended ATC Planner aims at bridging the gap between Air Traffic Flow and Capacity Management (ATFCM) and Air Traffic Control (ATC) providing real-time and fine-tuning measures to solve ATFCM hotspots, and to perform early measures to alleviate complexity closest to ATC activities. The solution consists of an automated tool and associated procedures supporting the basic communication between the Local DCB position and the Controllers' Work Positions allowing the EAP and the ATC team in identifying, assessing and resolving local complexity situations. The basic EAP relies on a real time integrated process for managing the complexity of the traffic with capability to reduce traffic peaks through early implementation of fine-tuned solutions to solve workload imbalances at the local level, compatible with the short-term timeframe of execution phase of the flights.	No	No
PJ.06-01	Optimised traffic management to enable free routing in high and very high complexity environments	"Optimized traffic management to enable Free Routing in high and very high complexity environment" supports the implementation of FRA across ACC/FIR borders by contributing to the improvement of ATM at local level. More precisely, it focuses on the improvement of Separation Provision to enable Free Routing operations within high and very high complexity cross-border environments in Upper En Route airspace. The Solution is not targeting unrestricted free routing operations, but aims at enabling safe and efficient operations in FRA with minimum structural limits to manage airspace and demand complexity. The Solution also relies on the Network Management (NM) function to cope with any Demand and Capacity imbalances created from changes in dominant traffic flows in FRA through the monitoring of the traffic complexity levels together with the level of the traffic demand.	No	Cross-border FRA implementation is planned for 2025
PJ.10-01a1	High Productivity Controller Team Organisation in En-Route (including eTMA) (1PC – 2ECs)	"High Productivity Controller Team Organisation in En-Route (including eTMA)" consists of developing new concepts of operation and identifying the nature of system support required for operating in team structures that are not the usual Planner/Executive (1PC – 1EC) two-person ATC sector team. In particular, the Multi-Sector Planner (MSP) where a Planner Controller has	No	No

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		responsibility for the airspace under the executive control of two independent Executive Controllers (1PC – 2ECs). The SESAR Solution "High Productivity Controller Team Organisation in En-Route (including eTMA)" focused on the typical one Planner Controller to 2 Executive Controllers MSP organization and team organisation in eTMA (lower En Route sectors) as well as in En Route.		
		TBO Trajectory -based operations		
#06	Controlled time of arrival (CTA) in medium-density/ medium-complexity environments	The CTA (Controlled Time of Arrival) is an ATM imposed time constraint on a defined point associated with an arrival runway, using airborne capabilities to improve arrival management. When a time constraint is needed for a flight, the ground system may calculate a CTA as part of the arrival management process, and then it may be proposed to the flight for achievement by avionics within required accuracy. Airborne information may be used by the ground system in determining the CTA (e.g. ETA min/max) and in monitoring the implementation of the CTA.	No	No
#08	Arrival management into multiple airports	The system provides support to coordination of traffic flows into multiple airports to enable a smooth delivery to the runways. The 'Center Manager' (CMAN) which accompanies the AMANs of the airports generates a combined planning for several arrival streams into different airports by calculating the sequence of aircraft flying towards an area where their routes intersect. By imposing an adequate spacing of the aircraft in that area, a Time To Lose (TTL) for the appropriate upstream E-TMA sector is calculated to meet this constraint. Both AMAN-TTL for the runway and TTL for the E-TMA sector are superimposed and presented to the upstream en-route sector controllers.	No	No
#100	ACAS Ground Monitoring and Presentation System	The ACAS provides resolution advisories (RAs) to pilots in order to avoid collisions. Controllers rely on pilots to report RAs by radio as they occur in accordance with ICAO regulations. However these reports can come late, incomplete or are, absent in some instances. This solution consists of a set of monitoring stations and a server system, which enable the continuous monitoring and analysis of ACAS RAs	Yes – RE information is displayed on CWP	

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		and coordination messages between airborne units from the ground.		
#101	Extended hybrid surveillance	This solution consists of an enhanced TCAS capability, adding passive surveillance methods and reducing the need for active Mode-S interrogations. By making fewer active interrogations, this solution allows the aircraft to significantly reduce the usage of the 1090 MHz frequency.	N	N
PJ.07-01-01	AU Processes for Trajectory Definition	The Flight Delay Criticality Indicator (FDCI) information, for a flight having an ATFCM delay, is provided by the Airspace User to both NM and FMPs to indicate that the concerned flight is critical for his business and that he requested that the flight progresses and arrives as much as possible on time. • The resolution of an FDCI request is NMOC driven upon the reception of the FDCI improvement request and when more than one regulation is affecting the flight, alternatively in the case there is only one regulation affecting the flight the local FMP can requests the resolution to NMOC. • The resolution is mostly a regulation exclusion or delay reduction (force slot) by NMOC. In this, the focus is put on reactive FDCI that means the FDC flight has an ATFCM delay and slot issued.	No	No
PJ.10-02a1	Integrated tactical and medium Conflict Detection & Resolution (CD&R) services and Conformance Monitoring tools for En-Route and TMA	Integrated tactical and medium conflict detection & resolution (CD&R) services and conformance monitoring tools for En-Route and TMA aims at improving the separation (tactical layer) in the En-Route and TMA (but not APP) operational environments through improved ground trajectory prediction. This is achieved using existing information on lateral and vertical clearances that are known by the ground system and airborne information such as Mode S data. This solution is built on SESAR 1 Sol. #27. New features and enhancement brought by PJ10.02a1 are : • Extension of TCT to all environments : TMA & ER • Improvement of the MTCD to handle level segments • Enhanced resolution features for MTCD & TCT including what-if and what-else probes. • Conformance monitoring tool, based on improved ground trajectory prediction and enriched with	No	No

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		additional alerts, such as rate monitoring.		
PJ.18-02c	eFPL supporting SBT transition to RBT	This solution addresses the technical enablers supporting the distribution of eFPL information to ATC systems in order to improve the ATC prediction with additional information to better assess the expected sector load and to reduce the number of false conflict detections, as well as to provide the ATCO with better knowledge of airline intentions thanks to a more accurate profile and additional elements such as ToC or ToD. The main actors are the Network Manager that provides the eFPL distribution service, and the ATS service providers that integrate and use the information in the ATC systems.	No	No
VS Virtualisation of service provision				
PJ.05-02	Multiple remote tower module	The main driver for MRTM (multiple remote tower module) is increased cost efficiency. The objective is to implement a MRTM that allows the ATCO to maintain situational awareness for 2 or 3 airports simultaneously (including traffic mix of IFR and VFR, as well as aerodrome vehicles). MRTM requires advanced features of the visual reproduction as well as additional voice services. It is assumed that an ATCO can hold endorsements for up to 3 (single) different airports. There is a fixed allocation of airports to a set of MRTMs. However, in case of high workload, due to e.g. emergency, high traffic volumes or degraded mode, the ATCO can split one airport into a spare MRTM if required. The prerequisite for multiple remote tower operations is the single remote tower operations.	No	No
PJ.16-03	Enabling rationalisation of infrastructure using virtual centre based technology	This solution enables the separation of the data centre where the data is produced (the ATM Data Service Provider - ADSP) from the ATCOs location (the Virtual Centre ATSU). Virtual Centre is a grouping of Air Traffic Service Units (ATSU), possibly geographically separated, sharing ATC operations amongst themselves using data services provided by one or more	No	No

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		ADSPs through interfaces defined in Service Level Agreements, in a safe and secure manner. This decoupling delivers the flexibility and performance aspects of the services to ensure the ability of the virtual centre solution to at least support or to improve the operational performance.		
				
PJ.02-05	Independent rotorcraft operations at the airports	This solution refers to simultaneous and non-interfering operations through SBAS (and GBAS as an optional enabler) approach/departure procedures independent from the main runway and dedicated only to rotorcraft operations. The aim is to move rotorcraft operations from the active runway to facilitate fixed wing aircraft. Specific PBN RNP0.3 IFR procedures to/from an existing VFR FATO shall be deployed to reach a point-in-space (PinS) to access FATO. The solution targets, in particular, relatively large and very large airports and high complexity airspaces.	No	No
PJ.01-06	Enhanced rotorcraft operations and GA operations in the TMA	"Enhanced Rotorcraft operations in the TMA" integrate pilot support of both EVS (enhanced vision systems) including visual segments and automated flight path following by autopilot system. Advanced Point-In-Space RNP approaches and departures to/from FATO are based on SBAS navigation. The corresponding rotorcraft specific contingency procedures in case of loss of communication are defined. The pilot is supported during these operations by dedicated symbology presented on a Head Mounted Display system.	No	No

E. Surveillance (SUR)

European ATM Surveillance data are captured to enable Network performance improvements and ensure global interoperability.
This Annex includes Surveillance implementation information related to projects, sensors and data integration.
The objective for the inclusion of this information in LSSIP is to consolidate the data collection process and increase efficiency by avoiding parallel surveys.
The corresponding tables have been prefilled with information already available from recent surveys within the surveillance area.

For practical reasons to harmonize the reporting, since the LSSIP 2020 cycle the questionnaire is included in the LSSIP Annex.

Surveillance Projects

This section includes Surveillance system projects covering the full chain from Sensor to Surveillance data integration into SDPS and CWP.

Activity Description Area / Airspace	System Description	Expected contribution to the Key Performance[4] Areas	Schedule
Area/Name: Prague (LKPR) **Objective:** SUR Coverage **Airspace**: CTR/TMA/ENR **Service**: ATC, separation 3NM TMA and 5NM ENR **Density**: High (TMA and ENR) **Traffic**: General	**WAM with ADS-B capability** **Sensor/Sites**: 1 system (P3D-WS) 16 RXS WAM Prague +3 RXS from other WAM, 2 RMTR, 2 TXS **Provider**: ERA **Coverage:** WAM 120NM	**Capacity:** ELS operation, Interrogation by A/C only with minimum PRF (mode 1 and 2 are not displayed on civil workstations) **Operational-Efficiency:** **Safety:** new HW and SW cyber protection **Security:** **Environment:** **RF/Spectrum:** Interrogation 1/2/ A/C only **Cost-Efficiency:**	**Sensor installation date:** 2006 **Operational date:** 2008 **ADS-B operational integration date (ATCO CWP) where applicable:** 2020 (end) ADS-B operational in multi-processing with PSR and MSSR **Estimated End of Life:** 2025-2027 WAM replacement 2017 Upgrade and extension by additional receivers and new SW version 2019 installation SW for cyber security 2021 ADS-B operational in multi-processing with PSR and MSSR 2025-2028 WAM/ADS-B replacement

[4] Check NOP for better KPI and link to performance improvements.

Activity Description Area / Airspace	System Description	Expected contribution to the Key Performance[4] Areas	Schedule
Area/Name: Karlovy Vary (LKKV) **Objective:** SUR Coverage **Airspace**: CTR/TMA/ENR **Service**: ATC, separation 3NM TMA and 5NM ENR **Density**: Low (TMA) **Traffic**: General	**Type: WAM with ADS-B capability** **Sensor/Sites**: 1 system (P3D-WT) 4 RXS WAM West Sector + 7 RXS from other WAM, 1 TXS **Provider**: ERA **Coverage:** WAM 90NM	**Capacity:** EHS operation **Operational-Efficiency:** **Safety:** New HW and SW cyber protection **Security:** **Environment:** **RF/Spectrum:** Interrogation to polygons below 10000ft MSL only with minimum PRF **Cost-Efficiency:**	**Sensor installation date:** 2018 **Operational date:** 2018 **ADS-B operational integration date (ATCO CWP) where applicable:** 2020 (end) ADS-B operational in multi-processing with PSR and MSSR **Estimated End of Life:** 2025-2027 WAM replacement 2019 installation SW for cyber security 2021 ADS-B operational in multi-processing with PSR and MSSR 2025-2028 WAM/ADS-B replacement
Area/Name: Ostrava (LKMT) **Objective:** SUR Coverage **Airspace**: CTR/TMA/ENR **Service**: ATC, separation 3NM TMA and 5NM ENR **Density**: Medium (TMA) **Traffic**: General	**Type: WAM with ADS-B capability** **Sensor/Sites**: 1 system 15 RXS WAM LKMT + 1 RXS from other WAM, 3 TXS, 1 RMTR **Provider**: ERA **Coverage:** WAM 80NM **TAR** **Provider: ELDIS** **TAR coverage**: 80NM, used in TMA and ENR	**Capacity:** EHS operation **Operational-Efficiency:** **Safety:** new HW and SW cyber protection **Security:** **Environment:** **RF/Spectrum:** Interrogation with minimum PRF **Cost-Efficiency:**	**Sensor installation date:** 2002 **Operational date:** 2004 **ADS-B operational integration date (ATCO CWP) where applicable:**2020 (end) ADS-B operational in multi-processing with PSR and MSSR **Estimated End of Life:** 2025-2027 WAM replacement 2017 Upgrade and extension by additional receivers and new SW version 2019 installation SW for cyber security 2021 ADS-B operational in multi-processing with PSR and MSSR 2025-2028 WAM/ADS-B replacement

Activity Description Area / Airspace	System Description	Expected contribution to the Key Performance[4] Areas	Schedule
Area/Name: Brno (LKTB) **Objective:** SUR Coverage **Airspace**: CTR/TMA/ENR **Service**: ATC, separation 3NM TMA and 5NM ENR **Density**: Medium (TMA) **Traffic**: General	**WAM with ADS-B capability** **Sensor/Sites**: 1 system 7 RXS WAM LKTB + 3 RXS from other WAM, 3 TXS, 1 RMTR **Provider**: ERA **Coverage:** WAM 80NM **TAR** **Provider:** ELDIS **TAR coverage**: 80NM, used in TMA and ENR	**Capacity:** EHS operation **Operational-Efficiency:** **Safety:** new HW and SW cyber protection **Security:** **Environment:** **RF/Spectrum:** Interrogation to polygons below 10000ft MSL only with minimum PRF **Cost-Efficiency:**	**Sensor installation date:** 2008 **Operational date:** 2009 **ADS-B operational integration date (ATCO CWP) where applicable:** 2020 (end) ADS-B operational in multi-processing with PSR and MSSR **Estimated End of Life:** 2025-2027 WAM replacement 2017 Upgrade and extension by additional receivers and new SW version 2019 installation SW for cyber security 2021 ADS-B operational in multi-processing with PSR and MSSR 2025-2028 WAM/ADS-B replacement

Activity Description Area / Airspace	System Description	Expected contribution to the Key Performance[5] Areas	Schedule
Area/Name: Prague (LKPR) Airport Surface **Objective:** **Airspace**: **Service**: **Density**: **Traffic**:	**Type: MLAT/ADS-B** **Sensor/Sites**: 1 (element of A-SMGCS) **Provider**: ERA 20 MLAT RXS, 3 TXS, 1 RMTR **Coverage:**	**Capacity:** Currently MLAT display of aircrafts and vehicles in whole airport area **Operational-Efficiency:** **Safety:** **Security:** **Environment:** **RF/Spectrum:** **Cost-Efficiency:**	**Sensor installation date:** 2005 **Operational date:** 2021 for all aircraft **ADS-B operational integration date (ATCO CWP) where applicable:** 2021 for vehicles **WAM/ADS-B deployment and operation.** From February 2021 – display MLAT position of all aircrafts and ADS-B from vehicles only. **Estimated End of Life:** 2025-2028 WAM/ADS-B replacement

[5] Check NOP for better KPI and link to performance improvements.

Activity Description Area / Airspace	System Description	Expected contribution to the Key Performance[5] Areas	Schedule
Area/Name: Ostrava (LKMT) Airport Surface **Objective:** **Airspace**: **Service**: **Density**: **Traffic**:	**Type: MLAT/ADS-B** **Sensor/Sites**: Common processor with WAM system **Provider**: ERA In WAM is total 15 RXS and 6 of them is supporting Airport MLAT functions and 3 TXS and 1 of them with minimal power is dedicated to MLAT functions. **Coverage:**	**Capacity:** Display MLAT of all aircrafts and ADS-B of vehicles only **Operational-Efficiency:** **Safety:** **Security:** **Environment:** **RF/Spectrum:** **Cost-Efficiency:**	**Sensor installation date:** 2003 **Operational date:** 2012 **ADS-B operational integration date (ATCO CWP) where applicable:** 2012 for vehicles **WAM/ADS-B deployment and operation:** **Estimated End of Life:** 2010 additional 6 RXS at the airport connected to common processing system with WAM and ADS-B. 2012 WAM/ADS-B operational common display at TWR (ground controller's workstation G-CWS).
Area/Name: FIR Prague **Objective:** SUR Coverage **Airspace**: ENR **Service**: ATC separation - 3NM TMA - 5NM ENR **Density**: High **Traffic**: General	**Type: ARTAS SDPS** Connected inputs: - 4 WAM/ADS-B (WS, WT, LKMT, LKTB) - 2 MSSR Mode A/C (DFS DRESD, MTTER) - 3 MSSR Mode S (Czech PRAGUE, BUKOP, PISEK) - 2 MSSR Mode S (Slovak JAVOR, DFS AUERS - 3 TAR (Czech PRAGUE, LKTB, LKMT) - 2 TAR (DFS, DRESD) **Sensor/Sites:** **Provider**: **Coverage:**	**Capacity:** PSR coverage min from FL100, in ENR and from MRVA in all TMA SSR coverage from Minimum Radar Vectoring Altitude in whole FIR Prague with overlap of at least 60 NM to the depth of adjacent FIRs. EHS mode S operation. ADS-B in test mode to be operational from the first half of 2021. **Operational-Efficiency:** **Safety:** **Security:** **Environment:** Minimization of interrogation and spectrum monitoring. **RF/Spectrum:** **Cost-Efficiency:**	**Sensor installation date:** **Operational date:** **ADS-B operational integration date (ATCO CWP) where applicable:** **Estimated End of Life:** **Deployment, operation, upgrade, replacement:** 2021 connection of 4 new TAR/MSSR mode A/S (Czech military)

Surveillance sensors (just numbers, no technical/ops details)

This section summarises the number of Surveillance sensors per state. This covers all current and planned sensors intended for operational use.

Note: Please only count each sensor once even if it is part of combined systems. A combined PSR and Mode S SSR is only counted once in the row for CMB PSR Mode S (and consequently not counted in the PSR nor in the

Mode S rows). Similarly, for a multilateration system, providing coverage both on the airport surface and in the CTR or TMA the individual sensor can be allocated to one or the other but each sensor must only be counted once, either in one of the MLAT/WAM rows or in one of the Airport MLAT/LAM rows.

Sensor Type	2020	2021	2022	2023	2024	2025
Mode A/C						
CMB PSR Mode A/C						
Mode S	2	2	2	2	2	2
CMB PSR Mode S	1	1	1	1	1	1
PSR stand alone	2	2	2	2	2	2
WAM Sensors	42	42	42	42	42	42
ADS-B stand alone						
Space-based ADS-B						
Surface Movement Radar (SMR)	1	1	1	1	1	1
Airport MLAT Sensors	20	20	20	20	20	20
ADS-B equipped Vehicles	200	200	200	200	200	200

Surveillance Data Use

This section provides and overview of the use of Surveillance data per state. This includes usage of Downlinked Aircraft derived Parameters (DAP) / Aircraft Derived Data (ADD) and ADS-B data.

ADD/DAP data usage

ATCO, System, Tools (which tool)

ADD/DAP data usage	Operational or planned ops date	Usage (ATCO, system, tools, etc.)
Selected Altitude	Operational	ATCO. Tools: STCA
Barometric pressure setting	Operational	ATCO.
Roll angle	Not used	
True track angle	Not used	
Ground speed	Not used	
Track angle rate	Not used	
Magnetic heading	Operational	ATCO.
Indicated airspeed	Operational	ATCO.
Mach No	Operational	ATCO.
Vertical rate (Baro, Inertial)	Operational	ATCO.

ADS-B integration

ADS-B use case and integration date	Operational or planned ops date	Sites
ACC ATC integration ENR	2021	
ACC ATC integration TMA	2021	
ATC integration TWR CTR/TMA	2021	
Flight Information Service		
ATCO Traffic Awareness		
Traffic planning e.g. Arrival Manager		
Conflict Alerting, e.g. STCA		
Airport surveillance e.g. Traffic awareness, Target identification support	Operational	Surface vehicles in Ostrava and Prague airport.
Other:		

F. Glossary of abbreviations

This Annex mainly shows the abbreviations that are specific to the LSSIP Document for Czech Republic.

Other general abbreviations are in the Acronyms and Abbreviations document in:

https://www.eurocontrol.int/airial/

Term	Description
AAII	Air Accidents Investigation Institute
AF	ATM Functionality
AHA	Active Hazard Assessment
Airport CDM	Airport Collaborative Decision Making
ANS CR	Air Navigation Services of the Czech Republic
A-SMGCS	Advanced Surface Movement Guidance & Control System
CAA	Civil Aviation Authority
CAD	Civil Aviation Department (MoT)
CHMI	Czech Hydrometeorological Institute
CTR	Control Area
DFL	Division Flight Level
FDD	Development of Air Force Department of the Force Development Division of MoD
FT	Fast Track
IAID	Aviation Safety Section of the Internal Audit and Inspection Department of MoD
IATCC	Integrated Air Traffic Control Centre
MAA	Military Aviation Authority, Defence Organisations Management Division of MoD
MCTR	Military CTR
MoD	Ministry of Defence
MoT	Ministry of Transport
MTMA	Military TMA
NOP	Network Operation Plan
NSA	National Supervisory Authority
PCP	Pilot Common Project
PDP	Preliminary Deployment Programme
RET	Rapid Exit Taxiway
SRA	Security Restricted Area
S-AF	Sub ATM Functionality
TWR	Tower
UIR	Upper Flight Information Region