EUROCONTROL

LSSIP 2022
BOSNIA AND HERZEGOVINA
LOCAL SINGLE SKY IMPLEMENTATION

Implementation Overview

FOREWORD

The EUROCONTROL Local Single Sky ImPlementation (LSSIP) is a long-standing successful process (almost 30 years) that, in combination with the European ATM Master Plan (Level 3), reaches out on a yearly and continuous basis to all ECAC and Comprehensive States stakeholders to ensure the monitoring of the ATM Modernisation in Europe.

In 2021, a major milestone has been achieved by the EUROCONTROL Network Manager and the SESAR Deployment Manager (SDM) Teams by implementing a unified planning and monitoring process that addresses the introduction of new systems, functionalities and procedures.

For the second year in a row, LSSIP will ensure the monitoring of implementation of the functionalities detailed in the SESAR Deployment Programme, on which the European Commission is counting to ensure compliance according to the EU Regulation 2021/116.

This year we have further developed tools and processes and a revised calendar, increasing the accuracy of the LSSIP reporting. EUROCONTROL will continue along this path to be an essential part of the single value chain that coordinates all steps from development to deployment with the goal to steer and accelerate the modernisation of ATM across ECAC in support of European aviation.

The economic crisis keeps affecting all operational stakeholders in the aviation sector. It is in this challenging context that the support of civil and military national organisations (Regulators and National Supervisory Authorities, Air Navigation Service Providers and Airport Operators) to timely provide their data, shows the commitment towards a robust planning and monitoring process for the European ATM implementation in our evolving environment.

In addition to providing a consolidated picture of implementation progress at National and ECAC level, LSSIP National documents are paramount for the development of ICAO's Aviation System Block Upgrades (ASBUs) Implementation Monitoring Report in the ICAO EUR Region. On behalf of ICAO, EUROCONTROL is responsible for delivering this yearly update, for all 55 ICAO/EUR States, in accordance with the Global Air Navigation Plan (GANP).

From this year on, the new EUR RASP questionnaire from EASA has been implemented into the LSSIP process enlarging the view that the process offers on the modernisation of the European ATM system.

I would like to thank all our stakeholders for their continued engagement and significant effort in contributing to the production of this LSSIP document and in supporting EUROCONTROL towards our goal of diligently guiding and informing the Aviation community on ATM deployment.

Happy reading!

Iacopo Prissinotti
Director NM - Network Manager
EUROCONTROL

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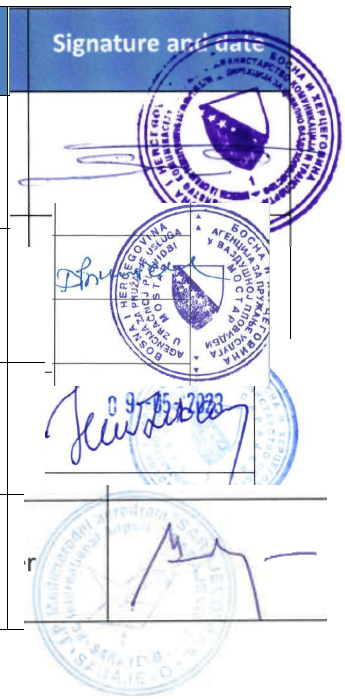
Reference Documents	
LSSIP Documents	https://www.eurocontrol.int/service/local-single-sky-implementation-monitoring
Master Plan Level 3 – Plan Edition 2022	https://www.eurocontrol.int/publication/european-atm-master-plan-implementation-plan-level-3
Master Plan Level 3 – Report Year 2022	https://www.eurocontrol.int/publication/european-atm-master-plan-implementation-report-level-3
European ATM Portal	https://www.atmmasterplan.eu/
STATFOR Forecasts	https://www.eurocontrol.int/statfor
National AIP	https://eaip.bhansa.gov.ba/

APPROVAL SHEET

The following authorities have approved all parts of the LSSIP Year 2022 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 2022.

Stakeholder / Organisation	Name	Position	Signature and date
BHDCA	Čedomir ŠUŠNJAR	Director of BHDCA	
BHANSA	Davorin PRIMORAC	Director of BHANSA	
MoD	Zukan Helez	Minister of Defence	
Airport Sarajevo	Alan BAJIĆ	General Manager	



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Executive Summary

National ATM Context

Member State of:

[1]

Bosnia and Herzegovina is an ICAO, ECAC, EUROCONTROL, ECAA and JAA Member State.

Bosnia and Herzegovina ratified the European Common Aviation Area (ECAA) Agreement and signed a working arrangement (WA) with EASA thus accepting the obligation to implement European Union regulations in the civil aviation area.

The Bosnia and Herzegovina Directorate of Civil Aviation (BHDCA), as an authority responsible for performing regulatory functions and oversight in the areas of civil aviation and air navigation, was established in 1997. It is only civil aviation authority responsible for registration of aircraft and issuance of certificates, licenses, approval, ratings and endorsements in the area of civil aviation.

Bosnia and Herzegovina National Supervisory Authority (The NSA Unit) is embedded in BHDCA.

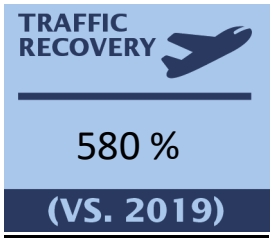
BHDCA provides for constant implementation of Standards and Recommended Practice in accordance with ICAO SARPs, with requirements for the European Union, EASA and the European Organization for Safety of Air Navigation – EUROCONTROL – with the objective of continued improvement of safety and security.

BHDCA continuously enhances quality, effectiveness and efficiency of its performance with the view to meet the requirements of all stakeholders and to protect public interests.

Bosnia and Herzegovina Air Navigation Services Agency (BHANSA) is certified by BHDCA and responsible for the provision of air navigation services in the FIR Sarajevo or in the Area of Responsibility defined by international agreements with neighbouring states.

Main airport covered by LSSIP: Sarajevo Airport

Traffic and Capacity

Level of traffic compared to 2019	Summer En-Route Delay
	

[1] Bosnia and Herzegovina is also one of EASA's Pan-European Partners (PANEP). This is a community of non-EASA European countries with which EASA cooperates on the implementation of the EU aviation safety rules - either in the framework of comprehensive aviation agreements already concluded with the EU or in anticipation of such agreements.

Bosnia and Herzegovina is part of:

The FAB CE – FAB Central Europe

Number of national projects: <4>
Number of FAB projects: <5>
Number of multinational projects: <1>

Summary of 2022 developments:

In the period 2022-2023 Bosnia and Herzegovina finished following objectives:

AOM 19.4 - Management of Predefined Airspace Configurations

AOM 19.5- ASM and A-FUA

AOM 21.2- Initial Free Route Airspace

FCM03- Collaborative Flight Planning

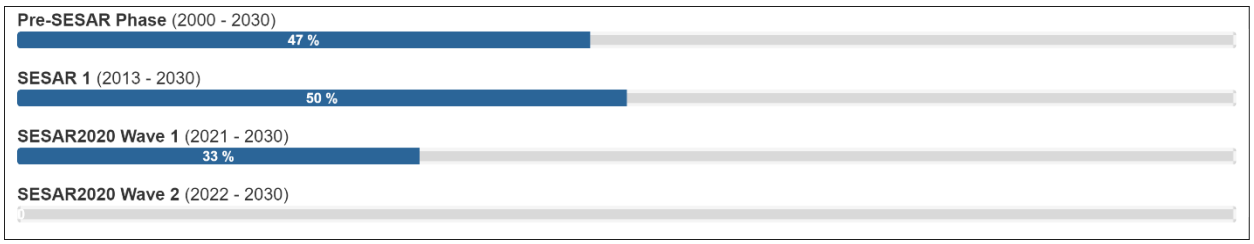
The implementation of objectives continued in 2021, but at a slower step. During 2022, a large number of objectives is expected to be reported in a better way, it's mean that the progress of the goals expected to be much better. In 2022 Directorate of Civil Aviation of Bosnia and Herzegovina (BHDCA) plans to improve status of INF07 - Electronic Terrain and Obstacle Data (e-TOD) Objective, AOP05- Airport Collaborative Decision Making (A-CDM), FCM01- Implement enhanced tactical flow management services.

On the regulatory side, BHDCA in accordance with the working arrangements with (WA) EASA has an obligation to transpose Commission Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and other oversight, and apply Implementing Regulation of the Commission (EU) no. 923/2012 of September 26, 2012 on establishing common rules of air traffic and operational provisions regarding services and procedures in air navigation.

Progress per SESAR Phase

The figure below shows the progress made so far in the implementation of objectives stemming from different R&D phases (Pre-SESAR, SESAR1 and SESAR 2020).

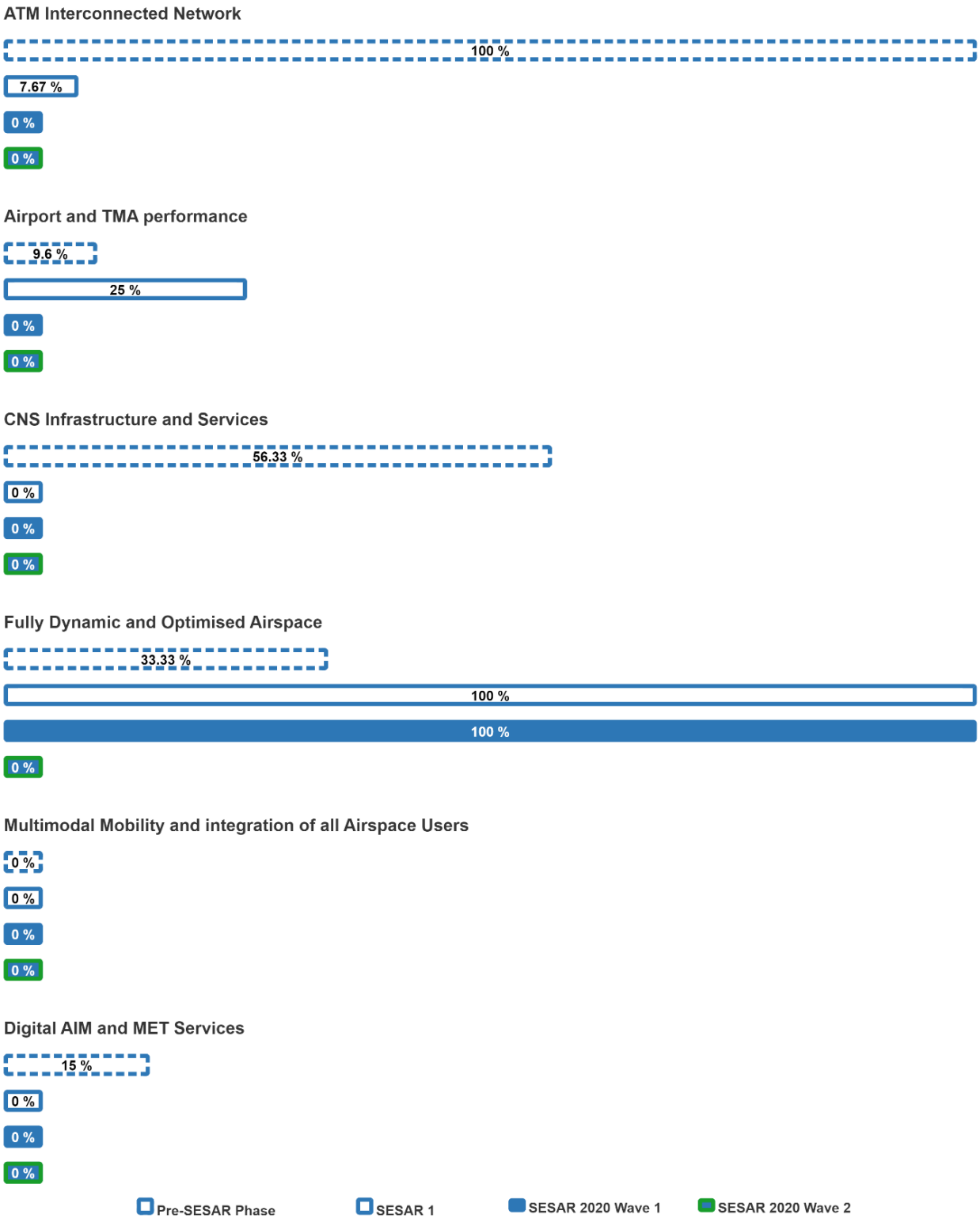
It shows the average implementation progress for all objectives grouped by SESAR Phase, excluding those for which the State is outside the applicability area as defined on a yearly basis in the European ATM Master Plan (Level 3) 2022, i.e. disregarding the declared "NOT APPLICABLE" LSSIP progress status.



Source: EUROCONTROL LSSIP+ DB

Progress per SESAR Essential Operational Changes and Phase

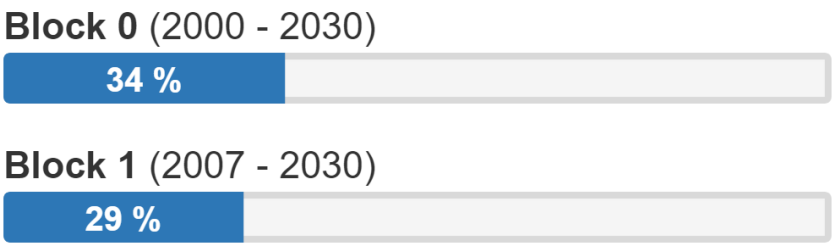
The figure below shows the progress made so far, per SESAR Essential Operational Changes, in the implementation of the SESAR phases. The percentages are calculated as an average, per EOC, of the same objectives as in the previous paragraph.



Source: EUROCONTROL LSSIP+ DB

ICAO ASBU Implementation Progress – Blocks 0 and 1

The figure below shows the progress made so far in the implementation of the ICAO ASBU Blocks 0 and 1, according to ICAO Global Air Navigation Plan 6th Edition (2019). The overall percentage is calculated as an average of the relevant Objectives contributing to each of the relevant ASBU Blocks; this is a summary of the table explained in Chapter 5.3 – ICAO ASBU Implementation Progress.



Source: EUROCONTROL LSSIP+ DB

ATM Deployment Outlook

State Objectives

✓ **Deployed in 2022**

By 2023

- **Implement enhanced tactical flow management services**

  [FCM01] 71 % progress

- **Electronic Terrain and Obstacle Data (eTOD)**

  [INF07] 15 % progress

By 2024

- **New Pan-European Network Service (NewPENS)**

  [COM12] 3 % progress

- **RNP Approach Procedures to instrument RWY**

  [NAV10] 28 % progress

- **Voice over Internet Protocol (VoIP) in En-Route**

  [COM11.1] 0 % progress

- **8,33 kHz Air-Ground Voice Channel Spacing below FL195**

  [ITY-AGVCS2] 17 % progress

- **Improve Runway Safety by Preventing Runway Excursions**

  [SAF11.1] % % progress

- **Ensure Quality of Aeronautical Data and Aeronautical Information**

  [ITY-ADQ] 6 % progress

By 2025

- **Enhanced Short Term ATFCM Measures**

  [FCM04.2] 20 % progress

- **Aircraft Identification**

  [ITY-ACID] 93 % progress

By 2026+

- **RNAV 1 in TMA Operations**

  [NAV03.1] 25 % progress

- **RNP 1 in TMA Operations**

  [NAV03.2] 25 % progress

Airport Objectives Sarajevo International Airport

✓ **Deployed in 2022**

By 2023

- **Airport Collaborative Decision Making (A-CDM)**

  [AOP05] 23 % progress

Source: EUROCONTROL LSSIP+ DB

Overall situation of Implementation Objectives

Main Objectives	Topic	Progress at the end of 2022	Status	2022		2023		2024		2025		2026		2027		>2027
AOM13.1	Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling	100%	Completed													
AOM19.4	Management of Predefined Airspace Configurations	100%	Completed		*											
AOM19.5	ASM and A-FUA	100%	Completed		*											
AOM21.2	Initial Free Route Airspace	100%	Completed		*											
AOM21.3	Enhanced Free Route Airspace Operations	100%	Completed								*					
AOP04.1(LQSA)	Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance Service (former ICAO Level 1)	0%	Not Applicable													
AOP04.2(LQSA)	Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (Airport Safety Support Service = former ICAO Level 2)	0%	Not Applicable								*					
AOP05(LQSA)	Airport Collaborative Decision Making (A-CDM)	23%	Ongoing													
AOP10(LQSA)	Time-Based Separation	0%	Not Applicable				*									
AOP11.1(LQSA)	Initial Airport Operations Plan	0%	Not Applicable				*									
AOP11.2(LQSA)	Extended Airport Operations Plan	0%	Not Applicable												*	2027
AOP12.1(LQSA)	Airport Safety Nets	0%	Not Applicable								*					
AOP13(LQSA)	Automated Assistance to Controller for Surface Movement Planning and Routing	0%	Not Applicable								*					
AOP14.1(LQSA)	Remote Tower Services	0%	Not Applicable													2030
AOP15(LQSA)	Enhanced traffic situational awareness and airport safety nets for the vehicle drivers	0%	Not Applicable													2030
AOP16(LQSA)	Guidance assistance through airfield ground lighting	0%	Not													2030

Main Objectives	Topic	Progress at the end of 2022	Status	2022		2023		2024		2025		2026		2027		>2027
			Applicable													
AOP17(LQSA)	Provision/integration of departure planning information to NMOC	0%	Not Applicable													2030
AOP18(LQSA)	Runway Status Lights (RWSL)	0%	Not Applicable													2030
AOP19(LQSA)	Departure Management Synchronised with Pre-departure sequencing	0%	Not Applicable		*											
AOP25(LQSA)	De-icing management tool	0%	Not Applicable													2030
AOP26(LQSA)	Reduced separation based on local Runway Occupancy Time (ROT) characterisation	0%	Not yet planned													2030
ATC02.8	Ground-Based Safety Nets	0%	Not Applicable													
ATC07.1(LQSA)	AMAN Tools and Procedures	0%	Not Applicable													
ATC12.1	Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring	100%	Completed													
ATC15.1	Information Exchange with En-route in Support of AMAN	0%	Not yet planned													
ATC15.2(LQSA)	Arrival Management Extended to En-route Airspace	0%	Not Applicable						*							
ATC18	Multi-Sector Planning En-route - 1P2T	0%	Not Applicable													2030
ATC19(LQSA)	AMAN/DMAN Integration	0%	Not Applicable												*	2027
ATC20	Enhanced STCA with down-linked parameters via Mode S EHS	0%	Not Applicable													2030
ATC26(LQSA)	Point Merge in complex TMA	0%	Not Applicable													2030
COM10.2	Extended AMHS	100%	Completed						*							
COM11.1	Voice over Internet Protocol (VoIP) in En-Route	0%	Planned													

Main Objectives	Topic	Progress at the end of 2022	Status	2022		2023		2024		2025		2026		2027		>2027
COM11.2	Voice over Internet Protocol (VoIP) in Airport/Terminal	0%	Not yet planned				*									
COM12	New Pan-European Network Service (NewPENS)	3%	Ongoing						*							
COM13	Air Traffic Services (ATS) datalink using SatCom Class B	0%	Not Applicable													2030
ENV01(LQSA)	Continuous Descent Operations (CDO)	0%	Not yet planned				*									
ENV02(LQSA)	Airport Collaborative Environmental Management	0%	Not yet planned													2030
ENV03(LQSA)	Continuous Climb Operations (CCO)	0%	Not yet planned													2030
FCM03	Collaborative Flight Planning	100%	Completed		*											
FCM04.2	Enhanced Short Term ATFCM Measures	20%	Ongoing		*											
FCM06.1	Automated Support for Traffic Complexity Assessment and Flight Planning interfaces	0%	Not yet planned		*											
FCM10	Interactive Rolling NOP	0%	Not Applicable				*									
FCM11.1(LQSA)	Initial AOP/NOP Information Sharing	0%	Not Applicable				*									
FCM11.2(LQSA)	AOP/NOP integration	0%	Not Applicable												*	2027
INF07	Electronic Terrain and Obstacle Data (eTOD)	15%	Ongoing													
INF10.10	Meteorological Information Exchange - Aerodrome Meteorological information Service	0%	Not Applicable								*					
INF10.11	Meteorological Information Exchange - En-Route and Approach Meteorological information service	0%	Not Applicable								*					
INF10.12	Meteorological Information Exchange - Network Meteorological Information	0%	Not Applicable								*					
INF10.13	Cooperative Network Information Exchange - ATFCM Tactical Updates Service (Airport Capacity and Enroute)	0%	Not Applicable								*					
INF10.14	Cooperative Network Information Exchange – Flight	0%	Not								*					

Main Objectives	Topic	Progress at the end of 2022	Status	2022		2023		2024		2025		2026		2027		>2027
	Management Service (Slots and NOP/AOP integration)		Applicable													
INF10.15	Cooperative Network Information Exchange – Measures Service (Traffic Regulation)	0%	Not Applicable								*					
INF10.16	Cooperative Network Information Exchange - Short Term ATFCM Measures services (MCDM, eHelpdesk, STAM measures)	0%	Not Applicable								*					
INF10.17	Cooperative Network Information Exchange – Counts service (ATFCM Congestion Points)	0%	Not Applicable								*					
INF10.19	Flight Information Exchange (Yellow Profile) - Flight Data Request Service	0%	Not Applicable								*					
INF10.2	Stakeholders' SWIM PKI and cyber security	0%	Not Applicable								*					
INF10.20	Flight Information Exchange (Yellow Profile) - Notification Service	0%	Not Applicable								*					
INF10.21	Flight Information Exchange (Yellow Profile) - Data Publication Service	0%	Not Applicable								*					
INF10.23	Flight Information Exchange (Yellow Profile) - Extended AMAN SWIM Service	0%	Not Applicable								*					
INF10.3	Aeronautical Information Exchange - Airspace structure service	0%	Not Applicable								*					
INF10.4	Aeronautical Information Exchange - Airspace Availability Service	0%	Not Applicable								*					
INF10.5	Aeronautical Information Exchange - Airspace Reservation (ARES)	0%	Not Applicable								*					
INF10.6	Aeronautical Information Exchange – Digital NOTAM service	0%	Not Applicable								*					
INF10.8	Aeronautical Information Exchange - Aeronautical Information Features service	0%	Not Applicable								*					
INF10.9	Meteorological Information Exchange - Volcanic Ash Mass Concentration information service	0%	Not Applicable								*					
ITY-ACID	Aircraft Identification	93%	Ongoing													

Main Objectives	Topic	Progress at the end of 2022	Status	2022		2023		2024		2025		2026		2027		>2027
ITY-AGDL	Initial ATC Air-Ground Data Link Services	0%	Not yet planned													
ITY-AGVCS2	8,33 kHz Air-Ground Voice Channel Spacing below FL195	17%	Ongoing													
ITY-FMTP	Common Flight Message Transfer Protocol (FMTP)	100%	Completed													
NAV03.1	RNAV 1 in TMA Operations	25%	Ongoing													2030
NAV03.2	RNP 1 in TMA Operations	25%	Ongoing													2030
NAV10	RNP Approach Procedures to instrument RWY	28%	Ongoing					*								
NAV11.1	Implement precision approach procedures using GBAS CAT II based on GAST C	0%	Not yet planned													2030
NAV12	ATS IFR Routes for Rotorcraft Operations	0%	Not yet planned													2030
SAF10.1	Implement measures to reduce the risk to aircraft operations caused by airspace infringements	0%	Not yet planned													2030
SAF11.1	Improve Runway Safety by Preventing Runway Excursions	0%	Planned													2030

Source: EUROCONTROL LSSIP+ DB

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 2022, 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 achieved performance in terms of delay during the summer season period and the planned projects assumed to offer the required capacity which will match the foreseen traffic increase and keep the delay at the agreed performance level.

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 LSSIP 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 LSSP DB (extraction can be asked to LSSIP FP or LSSIP CP).

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 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.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1. National ATM Environment

1.1. Geographical Scope

International Membership

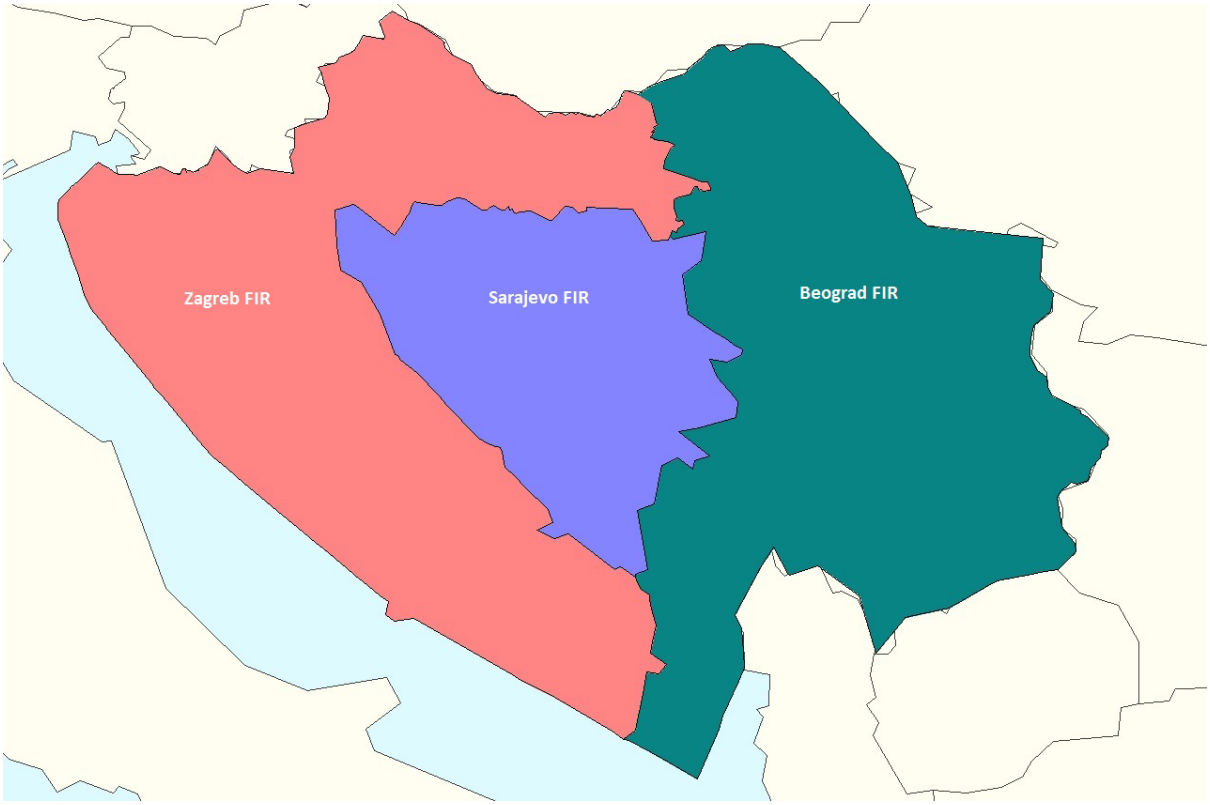
Bosnia and Herzegovina is a member of the following international organisations in the field of ATM:

Organisation		Since
ECAC	✓	September 2001
EUROCONTROL	✓	March 2004
European Union	-	-
EASA	-	-
ICAO	✓	January 1993
NATO	-	-
ITU	-	-
JAA	✓	December 2008
EDA	-	-
EMS (European Meteorological Society)	-	-
WMO (World Meteorological Organisation)	✓	June 1994

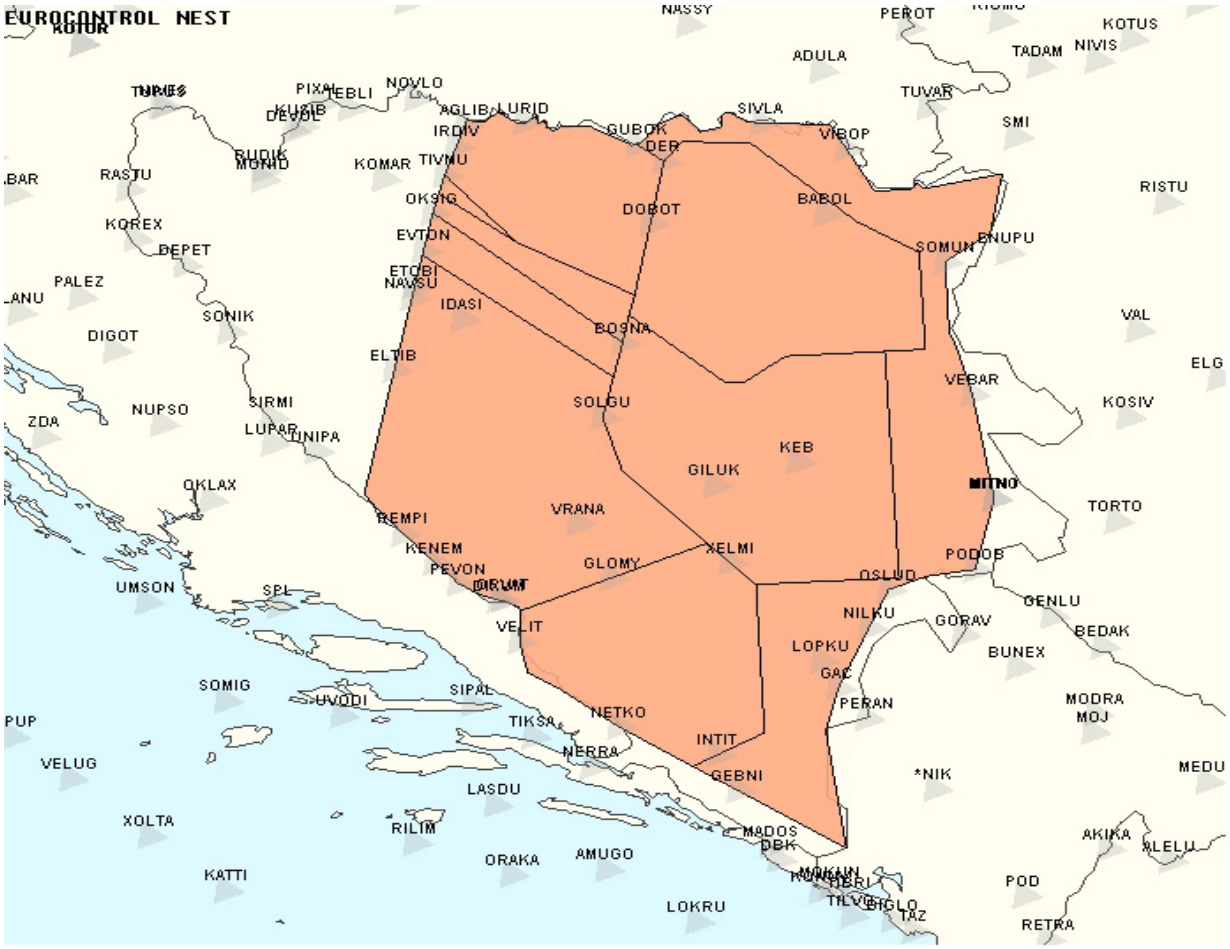
Geographical description of the FIR(s)

The geographical scope of this document addresses the Sarajevo FIR.

Sarajevo FIR is surrounded by FIRs of three States, namely Croatia, Montenegro, and Serbia.

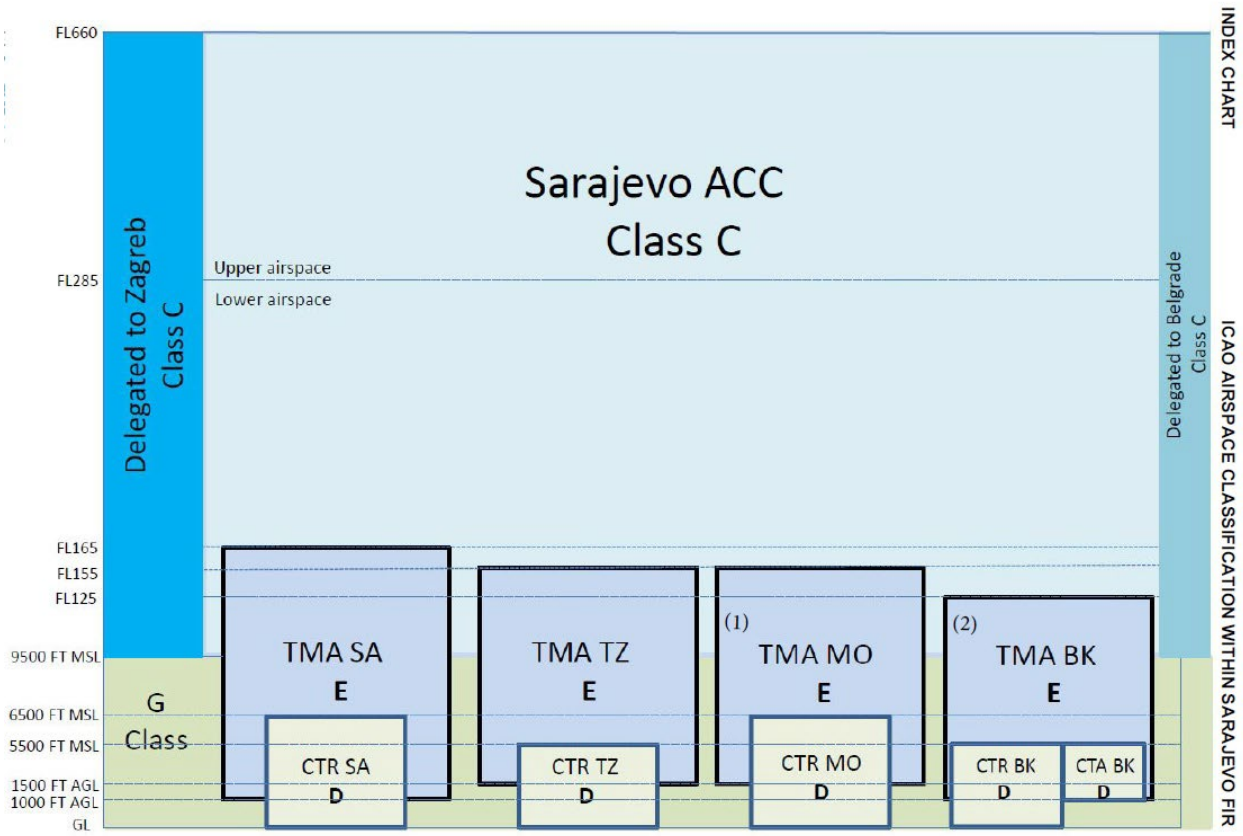


Current en-route BHANSA AoR :



Airspace Classification and Organisation

Bosnia and Herzegovina is following the ICAO airspace classification. The figure below shows the current classification within Sarajevo FIR.



ATC Units

The ATC units in the Bosnia and Herzegovina airspace, which are of concern to this LSSIP, are the following:

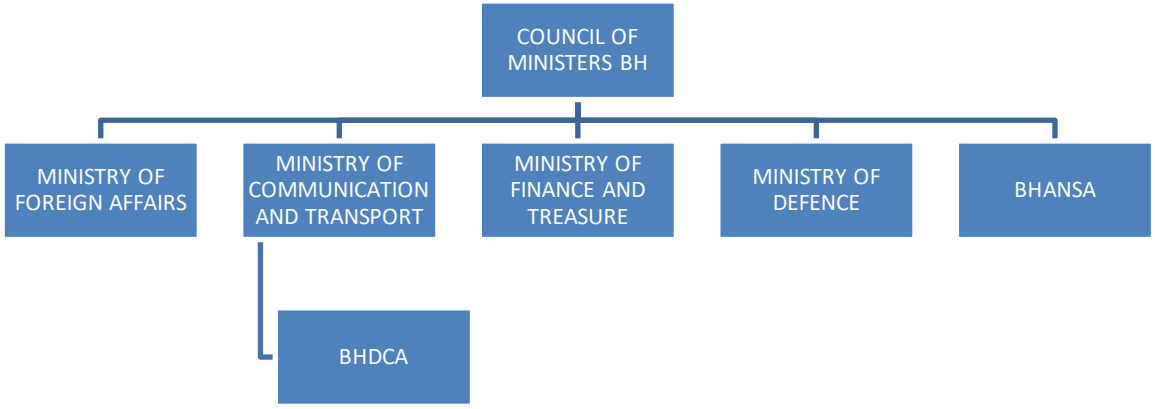
ATC Unit	Number of sectors		Associated FIR(s)	Remarks
	En-route	TMA		
BHACC	4	-	Sarajevo FIR	BHACC is comprised of 2 units, ATCU I Sarajevo and ATCU II Banja Luka
Banja Luka		1	Sarajevo FIR	Aerodrome and APP
Mostar	-	1	Sarajevo FIR	Aerodrome and APP
Sarajevo	-	2	Sarajevo FIR	Aerodrome and APP
Tuzla	-	1	Sarajevo FIR	Aerodrome and APP

1.2. National Stakeholders

The main National Stakeholders involved in ATM in Bosnia and Herzegovina are the following:

- The Ministry of Defence of Bosnia and Herzegovina;
- The Ministry of Communications and Transport of Bosnia and Herzegovina;
- BHDCA, Bosnia and Herzegovina Directorate of Civil Aviation (the role of NSA);
- BHANSA, Bosnia and Herzegovina Air Navigation Services Agency;
- The Ministry of Transport and Communications of the Republic of Srpska;
- The Ministry of Transport and Communications of the Federation of Bosnia and Herzegovina;

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



Civil Regulator(s)

General Information

The Bosnia and Herzegovina Directorate of Civil Aviation as an authority responsible for performing regulatory functions, oversight and issuing licenses, permits and certificates in the field of civil aviation and air traffic control, was established in 1997 with a goal to respond to the numerous obligations of Bosnia and Herzegovina as a Member State of the International Civil Aviation Organization (ICAO) and signatory to the Chicago Convention.

In addition of the Joint Aviation, Bosnia and Herzegovina is a member of the European Civil Aviation Conference (ECAC), a full member of the Joint Aviation Authorities (JAA) and European Organization for the Safety of Air Navigation and holds the observer status in the work of the European Aviation Safety Agency (EASA).

Bosnia and Herzegovina ratified the European Common Aviation Area (ECAA) Agreement and signed a working arrangement with EASA, thus accepting the obligation to implement European Union regulations in the field of civil aviation.

The BHDCA was established as part of the Ministry of Communications and Transport of Bosnia and Herzegovina (MKTBIH), and its organization, management, competences and responsibilities are regulated by the Aviation Law of Bosnia and Herzegovina and by the Rulebook amending the Rulebook on the internal organization of the MKTBIH.

- ICAO of 16 January 1993
- ECAC of 27 September 2001
- EUROCONTROL of 01 March 2004
- FAB CE (Functional Airspace Block Central Europe) of 05 May 2011
- JAA of 03 December 2008 as full member
- EASA

Mission – Establishment of a regulatory framework, certification and oversight of aviation entities in Bosnia and Herzegovina.

The different national entities having their own responsibilities in ATM are summarised in the table below. The BHDCA is further detailed in the following section:

Activity in ATM:	Organisation responsible	Legal Basis
Rule-making	BHDCA	Bosnia and Herzegovina Aviation Law (Official Gazette of Bosnia and Herzegovina" No 39/09 and 25/18), bylaws and transposed EU Regulation.
Safety Oversight	BHDCA (audit and inspections)	Bosnia and Herzegovina Aviation Law (Official Gazette of BiH" No 39/09 and 25/18); Rulebook on the requirements for the certification of an air navigation service provider (Official Gazette of BiH" No 54/17); Rulebook on oversight in civil aviation (Official Gazette of BiH" No 22/16, 55/18 and 5/19) and other relevant European regulations transposed.
Enforcement actions in case of non-compliance with safety regulatory requirements	BHDCA	Bosnia and Herzegovina Aviation Law (Official Gazette of BiH" No 39/09 and 25/18) Rulebook on the requirements for the certification of an air navigation service provider (Official Gazette of BiH" No 54/17); Rulebook on oversight in civil aviation (Official Gazette of BiH" No 22/16, 55/18 and 5/19).
Airspace	BHDCA Aviation Committee for airspace management in Bosnia and Herzegovina AMC (CIVAA, MILAA)	Bosnia and Herzegovina Aviation Law (Official Gazette of BiH" No 39/09 and 25/18); Rulebook laying down rules for the flexible use of airspace (Official Gazette of BiH" No 79/10); Rulebook on the establishment and organisation of the airspace management cell (Official Gazette of BiH" No 9/17); Rulebook on air traffic flow management (Official Gazette of BiH" No 20/19).
Economic	BHDCA	Bosnia and Herzegovina Aviation Law (Official Gazette of BiH" No 39/09 and 25/18); Rulebook laying down a common charging scheme for air navigation services (Text with EEA relevance) (Official Gazette of BiH" No 79/10); Regulation on the method of determining and financing the cost of providing air navigation services in the airspace of Bosnia and Herzegovina (Official Gazette of BiH" No 86/11).
Environment	BHDCA	Bosnia and Herzegovina Aviation Law (Official Gazette of BiH" No 39/09 and 25/18).
Security	BHDCA	Bosnia and Herzegovina Aviation Law (Official Gazette of BiH" No 39/09 and 25/18); Rulebook laying down procedures for conducting of inspections by the European commission in the field of aviation security (Official Gazette of BiH" No 40/11); Rulebook laying down detailed measures for the implementation of the common basic standards on civil aviation security (Official Gazette of BiH" No 40/11);
Accident investigation	Ministry of	Bosnia and Herzegovina Aviation Law (Official Gazette of

Activity in ATM:	Organisation responsible	Legal Basis
	Communication and Transport	BiH" No 39/09 and 25/18); Regulation on Investigation of Aircraft Accidents and Serious Incidents (Official Gazette of Bosnia and Herzegovina" No 30/14).

BHDCA

The BHDCA (Bosnia and Herzegovina Directorate of Civil Aviation) is an administrative organization within the Ministry of Communications and Transport of Bosnia and Herzegovina. The seat of the BHDCA is in Banja Luka. The BHDCA has regional offices situated in Sarajevo and Mostar.

BHDCA has continued the legal continuity of the Bosnia and Herzegovina Directorate of Civil Aviation established by the Aviation Law of Bosnia and Herzegovina (BiH Official Gazette No: 02/04).

The BHDCA is the only civil aviation authority responsible for aircraft registration and issuance, extension and renewal of licences, certificates, endorsements and authorisations in the civil aviation of Bosnia and Herzegovina.

BHDCA performs inspections and controls via authorized inspectors. Inspections and controls may be performed inter alia on aircraft, aerodromes and airfields, air traffic control facilities and air operator certificate holders, aviation and other professional personnel.

The BHDCA, as a designated body of the National Supervisory Authority (NSA) foe civil aviation, shall certificate the Service Provider and supervise the provision of air navigation service by the service provider, for the purpose of maintaining safety.

Annual Report published:	Y	Annual report will be available on request. Annual Safety Oversight Report Year 2021 is under preparation, by end of March.

The web site of the BHDCA is www.bhdca.gov.ba

Air Navigation Service Provider(s)

BHANSA

Services provided

BHANSA (Bosnia and Herzegovina Air Navigation Services Agency) is established by the Law as the Agency for Air Navigation Services in Bosnia and Herzegovina ("Official Gazette of BH" No 43/09). Under that Law BHANSA is responsible for the provision of air traffic control services, provision of communication, navigation and surveillance services, provision of aeronautical information services, provision of aeronautical meteorological services, operations of the rescue coordination center in search and rescue, education and training of air traffic control staff, export and import for the needs of the Agency, other tasks and operations providing for safe air navigation.

The Agency shall provide air navigation services in the airspace of Bosnia and Herzegovina for the Flight Information Region (FIR Sarajevo).

The Agency may also provide air navigation services outside of the airspace of Bosnia and Herzegovina and it should be regulated by an international agreement with Bosnia and Herzegovina being a contracting party therein.

BHANSA shall comprise the organizational units as follows: Main office in Mostar; Area Control Centre (ACC) with operational Air Traffic Control Units in Sarajevo (ATCU I) and Banja Luka (ATCU II); Operational-technical services; Bosnia and Herzegovina Meteorological Watch Office (BiH MET) in Banja Luka, Flight information Service of Bosnia and Herzegovina (FIS) integrated with BHRCC in Banja Luka, Aeronautical Information Services of Bosnia and Herzegovina (AIS BiH) in Mostar; Air Traffic Control Training Centre with ATC simulator in Mostar, International NOTAM office of Bosnia and Herzegovina (BH NOF) in Sarajevo, Approach and Aerodrome Control Units at the controlled airports in Bosnia and Herzegovina: Sarajevo, Banja Luka, Mostar and Tuzla.

BHANSA in cooperation with MoD introduces Airspace Management Cell of Bosnia and Herzegovina – AMC.

Governance:	State Ministerial Organs	Ownership:	State
Services provided	**Y/N**	**Comment**	
ATC en-route	Y	BHANSA (Bosnia and Herzegovina Agency for Air Navigation Services) up to FL 660	
ATC approach	Y	BHANSA	
ATC Aerodrome(s)	Y	BHANSA	
AIS	Y	BHANSA	
CNS	Y	BHANSA	
MET	Y	BHANSA	
ATCO training	Y	OJT and continuation training for ACC (Area), Aerodrome and Approach. Other forms of training are provided by external organisations.	
Others	Y Y	Search and Rescue, BHANSA, (Rescue Coordination Centre) Airspace Management Cell, BHANSA	
Additional information:	The Aviation Law (Official Gazette of BH" No 39/09 and 25/18) and the Law on Air Navigation Services Agency of Bosnia and Herzegovina (Official Gazette of BH" No 43/09), guarantee separation of regulatory and ANSP.		
Provision of services in other State(s):	N		
Annual Report published:	N		

The web site of BHANSA is www.bhansa.gov.ba

Additional web addresses of the organizations providing ANS:
www.crocontrol.hr and www.smatsa.rs.

ATC Systems in use

Main ANSP part of any technology alliance[2]	N	

FDPS

Specify the manufacturer of the ATC system currently in use:	Indra MangAir (DPS) - Main
Upgrade[3] of the ATC system is performed or planned	Performed in 2019
Replacement of the ATC system by the new one is planned	
ATC Unit	ACC/ APP Sarajevo

Specify the manufacturer of the ATC system currently in use:	Indra ManagAir (DPS) - Backup
Upgrade of the ATC system is performed or planned	Performed in 2019
Replacement of the ATC system by the new one is planned	
ATC Unit	ACC/ APP Sarajevo

Specify the manufacturer of the ATC system currently in use:	Thales Eurocat-C (DPS) - Backup
Upgrade of the ATC system is performed or planned	

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

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

Replacement of the ATC system by the new one is planned	
ATC Unit	APP Sarajevo

SDPS

Specify the manufacturer of the ATC system currently in use:	ARTAS - Main
Upgrade of the ATC system is performed or planned	Performed in 2019
Replacement of the ATC system by the new one is planned	
ATC Unit	ACC/ APP Sarajevo

Specify the manufacturer of the ATC system currently in use:	Indra ManagAir (DPS) - Backup
Upgrade of the ATC system is performed or planned	Performed in 2019
Replacement of the ATC system by the new one is planned	
ATC Unit	ACC/ APP Sarajevo

Specify the manufacturer of the ATC system currently in use:	Indra ManagAir (DPS) - Fallback
Upgrade of the ATC system is performed or planned	Performed in 2019
Replacement of the ATC system by the new one is planned	
ATC Unit	ACC/ APP Sarajevo

Specify the manufacturer of the ATC system currently in use:	Thales Eurocat-C (DPS)
Upgrade of the ATC system is performed or planned	
Replacement of the ATC system by the new one is planned	
ATC Unit	APP Sarajevo

Airports

General information

There are four airports in Bosnia and Herzegovina, namely Banja Luka/Mahovljani, Mostar/Ortiješ, Sarajevo/Butmir and Tuzla/Dubrave are operated by public enterprises that are responsible only for ground services.

Airport(s) covered by the LSSIP

Referring to the List of Airports in the European ATM Master Plan Level 3 Implementation Plan Edition 2022 – Annex 3, it is up to the individual State to decide which additional airports will be reported through LSSIP for those Objectives.

Therefore, Sarajevo International Airport (LQSA) is the only airport in Bosnia and Herzegovina covered by the LSSIP Year 2021.

Military Authorities

The organizations and bodies of defence structure of BiH as it shown on figure 6.2. have responsibilities as follow:

The Presidency of Bosnia and Herzegovina has supreme command and control over the Armed Forces of Bosnia and Herzegovina while Parliamentary Assembly of Bosnia and Herzegovina conducts civilian control over the Armed Forces of Bosnia and Herzegovina.

The Ministry of Defence of Bosnia and Herzegovina is in charge of the overall strategy and policy for the defence system of Bosnia and Herzegovina. Airspace Division as a part of Sector for policy and plans is doing tasks related to

Military Aviation Authority on behalf of Ministry of Defence.

The Joint Staff of the AF BiH is responsible planning, organization and implementation of the directive and orders of the Minister of Defence of BiH.

The Operative Command of the AF BiH implements the policies of the Joint Staff of the AF BiH.

The Armed Forces of Bosnia and Herzegovina Support Command manages personnel, logistic and training matters.

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?	N
Level of such legal provision: Ministerial Decree, and Air Force Regulation (Standard Operational Procedures)		Level of such legal provision: N/A	
Level of such legal provision: Ministerial Decree, and Air Force Regulation (Standard Operational Procedures)		Authority signing such legal provision: N/A	
These provisions cover:		These provisions cover:	
Rules of the Air for OAT	Y		
Organisation of military ATS for OAT	N/A	Organisation of military ATS for GAT	N/A
OAT/GAT Co-ordination	Y	OAT/GAT Co-ordination	N/A
ATCO Training	N/A	ATCO Training	N/A
ATCO Licensing	N/A	ATCO Licensing	N/A
ANSP Certification	N/A	ANSP Certification	N/A
ANSP Supervision	N/A	ANSP Supervision	N/A
Aircrew Training	Y		
Aircrew Licensing	N/A		
Additional Information: -		Additional Information: -	
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	N	National Military AIP	N
EUROCONTROL eAIP	N	EUROCONTROL eAIP	N
Other:	-	Other:	-

Oversight

OAT	GAT
National oversight body for OAT: N/A	NSA (as per SES Regulation 550/2004) for GAT services provided by the military: N/A
Additional information: Inspection established at the level of Air Force Air Defence Brigade	Additional information:

Service Provision role

OAT			GAT	
Services Provided:			Services Provided:	
En-Route	Y	BHANSA is providing service	En-Route	Y
Approach/TMA	Y	BHANSA is providing service	Approach/TMA	Y
Airfield/TWR/GND	Y	BHANSA is providing service	Airfield/TWR/GND	Y
AIS	Y	BHANSA is providing service	AIS	Y
MET	Y	BHANSA is providing service	MET	Y
SAR	Y	BHANSA is providing service	SAR	Y
TSA/TRA monitoring	N	BHANSA	FIS	Y
Other:			Other:	
Additional Information:			Additional Information:	

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	N	Within specific corridors only	Y
Within the regular (GAT) national route network	N	Under radar control	Y
Within a special OAT route system	N	Under radar advisory service	Y

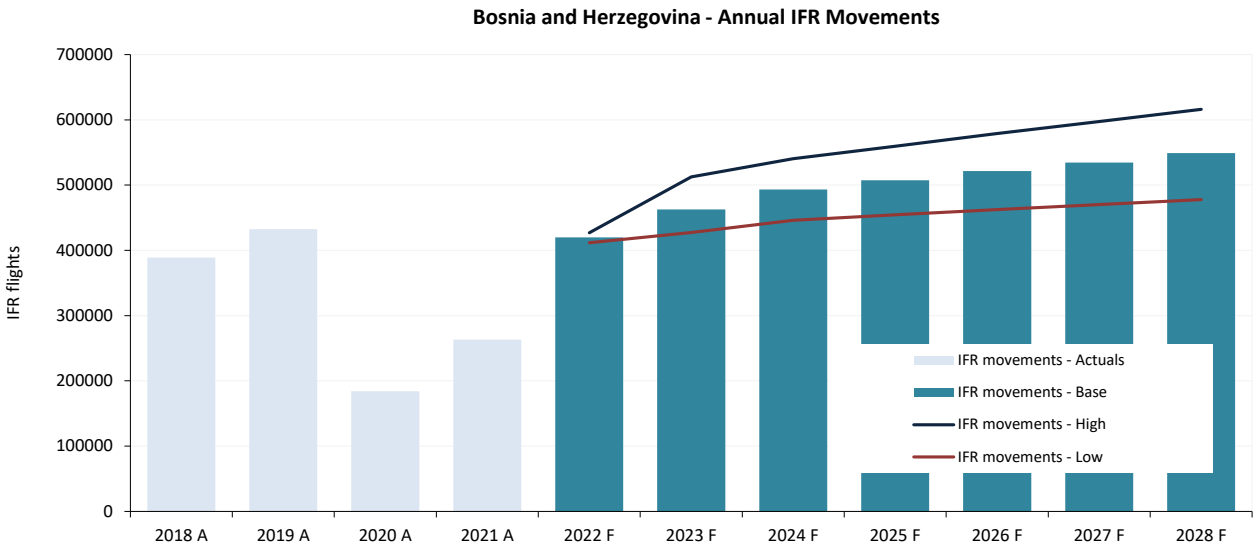
If Military fly GAT-IFR inside controlled airspace, specify existing special arrangements:								
No special arrangements				N	Exemption from Route Charges			Y
Exemption from flow and capacity (ATFCM) measures				N/A	Provision of ATC in UHF			N
CNS exemptions:	RVSM	N	8.33	N	Mode S	N	ACAS	N
Others:	-							

Flexible Use of Airspace (FUA)

Military in Bosnia applies FUA requirements as specified in the Regulation No 2150/2005: Y
FUA Level 1 implemented: Y Airspace Management Committee of Bosnia and Herzegovina since 2016
FUA Level 2 implemented: Y Airspace Management Cell – AMC since 6 December 2018
FUA Level 3 implemented: Y

2. Traffic and Capacity

2.1. Evolution of traffic in Bosnia and Herzegovina



EUROCONTROL Forecast Update 2022-2028 - October 2022											
IFR Movements (Growth)		2019 A	2020 A	2021 A	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F	2028 F
Bosnia and Herzegovina	High				62%	20,0%	5,4%	3,5%	3,5%	3,1%	3,2%
	Base	11%	-57%	43%	60%	10,0%	6,6%	2,9%	2,7%	2,5%	2,7%
	Low				56%	3,8%	4,3%	1,9%	1,8%	1,6%	1,7%
ECAC	High				51%	18,0%	5,6%	3,0%	2,8%	2,3%	2,3%
	Base	1%	-55%	25%	49%	10,0%	6,3%	2,5%	2,2%	2,0%	2,1%
	Low				46%	5,0%	4,3%	1,6%	1,3%	1,2%	1,2%

2022

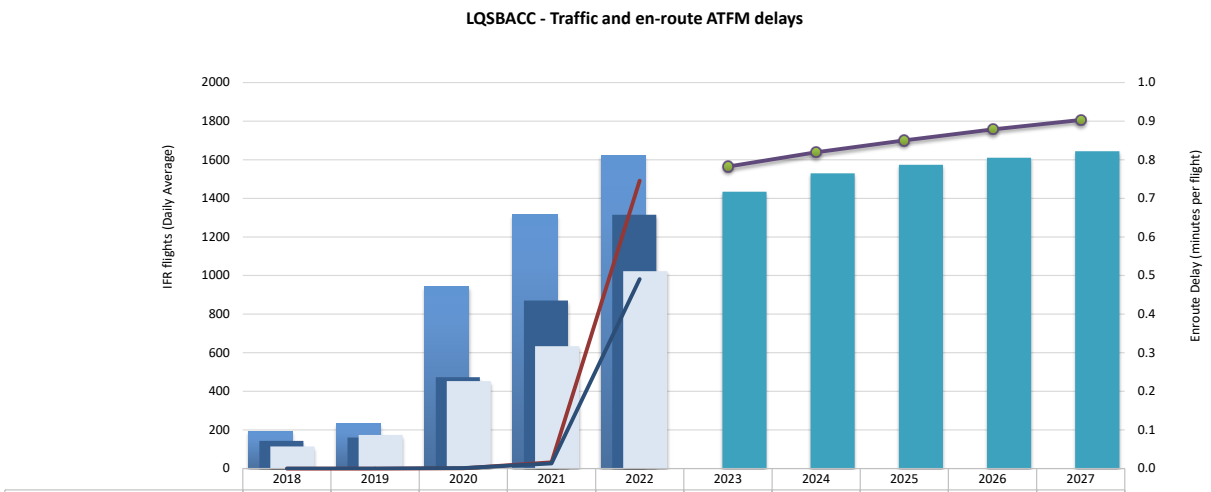
Traffic in Bosnia and Herzegovina increased by 62% compared to 2021 and recovery was at 580% of 2019 (due to the change of airspace).

2023-2028

The EUROCONTROL Seven-Year forecast predicts an average annual increase between 2.5% and 6.3% during the planning cycle, with an average baseline growth of 4.6%.

2.2.**BH ACC**

2.2.1. Traffic and en-route ATFM delays 2018-2027



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Peak Day Traffic	194	234	942	1315	1620					
Summer Traffic	144	161	473	871	1315					
Yearly Traffic	114	174	453	634	1023					
Summer Traffic Forecast - Baseline						1434	1529	1574	1610	1644
Summer Traffic Forecast - High						1565	1639	1700	1757	1806
Summer enroute delay (all causes)	0.00	0.00	0.00	0.02	0.75					
Yearly enroute delay (all causes)	0.00	0.00	0.00	0.01	0.49					

2.2.2. 2022 performance

BHACC	Traffic		En-route Delay (min. per flight)		Capacity	
	2022 vs.2021	% of 2019	All reasons	ACC Reference Value	Capacity Gap?	Baseline
Year	+61%	588%*	0.49	0.06	Yes	
Summer	+51%	817%*	0.75			89

Summer 2022 performance assessment

The average delay per flight was 0.75 minutes per flight in Summer 2022. 51% of the delays were due to ATC Capacity, 40% due to Weather and 9% due to ATC Staffing.

*Due to the change of area of responsibility

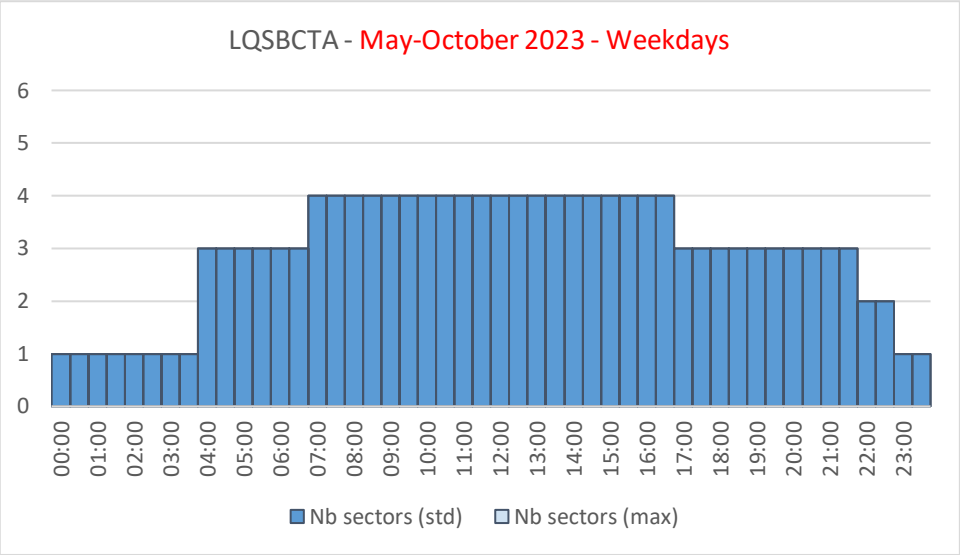
Operational actions	Achieved	Comments
Expansion of SECSI FRA	Yes	
TMA/CTR re-organisation	Yes	
Enhanced ATFM techniques, including STAM	Yes	
Continuous system upgrades	Ongoing	
Continuous capacity assessment	Ongoing	
Maximum configuration: 5 Sectors	Yes	

2.2.3. Planning Period – Summer 2023-2027

The planning focuses on the summer season to reflect the most demanding period of the year from a capacity perspective. This approach ensures consistency with the previous planning cycles.

The measures for each year are the measures that will be implemented before the summer season.

Summer Capacity Plan					
	2023	2024	2025	2026	2027
Free Route Airspace		SECSI FRA expansion with FRA Italy			
Airspace Management Advanced FUA					
Airport & TMA Network Integration					
Cooperative Traffic Management	Enhanced ATFM techniques, including STAM				
Airspace					
Procedures					
Staffing		New rostering tool	14 additional ATCOs		
Technical	Continuous system upgrades				
Capacity	Continuous capacity assessment				
Significant Events					
Max sectors	5	5	5	5	5
Planned Annual Capacity Increase	20%*	6%	5%	2%	2%
Capacity Profile - Base Annual % Increase	18%	6%			
Capacity Plan v. Profile - Base	2%	2%			
Capacity Profile - High Annual % Increase	27%	4%			
Capacity Plan v. Profile - High	-5%	-4%			
Capacity Profile – High Shortest Annual % Increase	65%	5%			
Capacity Plan v. Profile – High Shortest	-27%	-27%			
Annual Reference Value (min)	0.06	0.06			
Additional information	*Following the first busy summer season of 2022 in the new operational environment and experience gained thereof, the planned capacity increase in 2023 is mainly based on increased sector capacities, as well as revised rostering practices and summer leave plan.				


LQSBCTA - May-October 2023 - Weekdays
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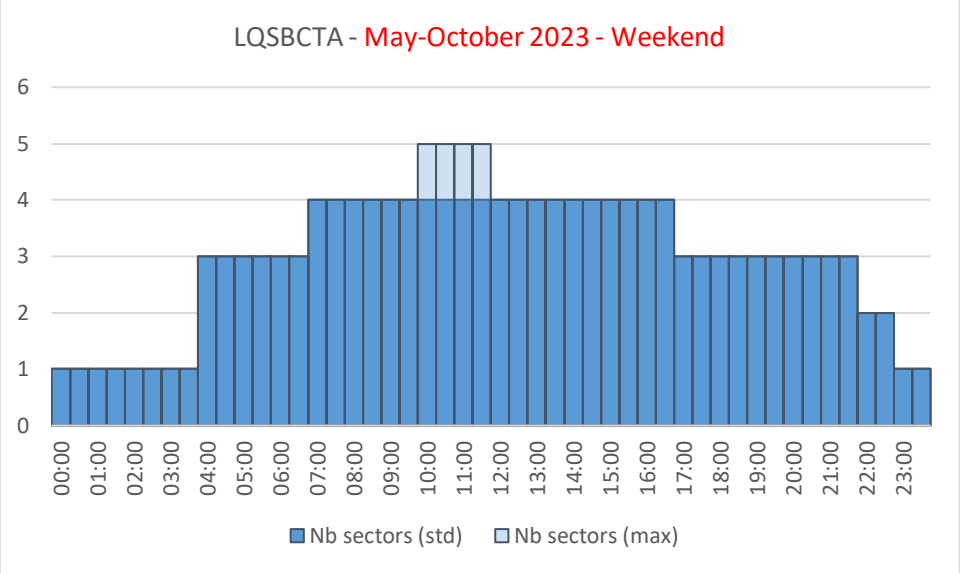
Nb sectors (max)


LQSBCTA - May-October 2023 - Weekend
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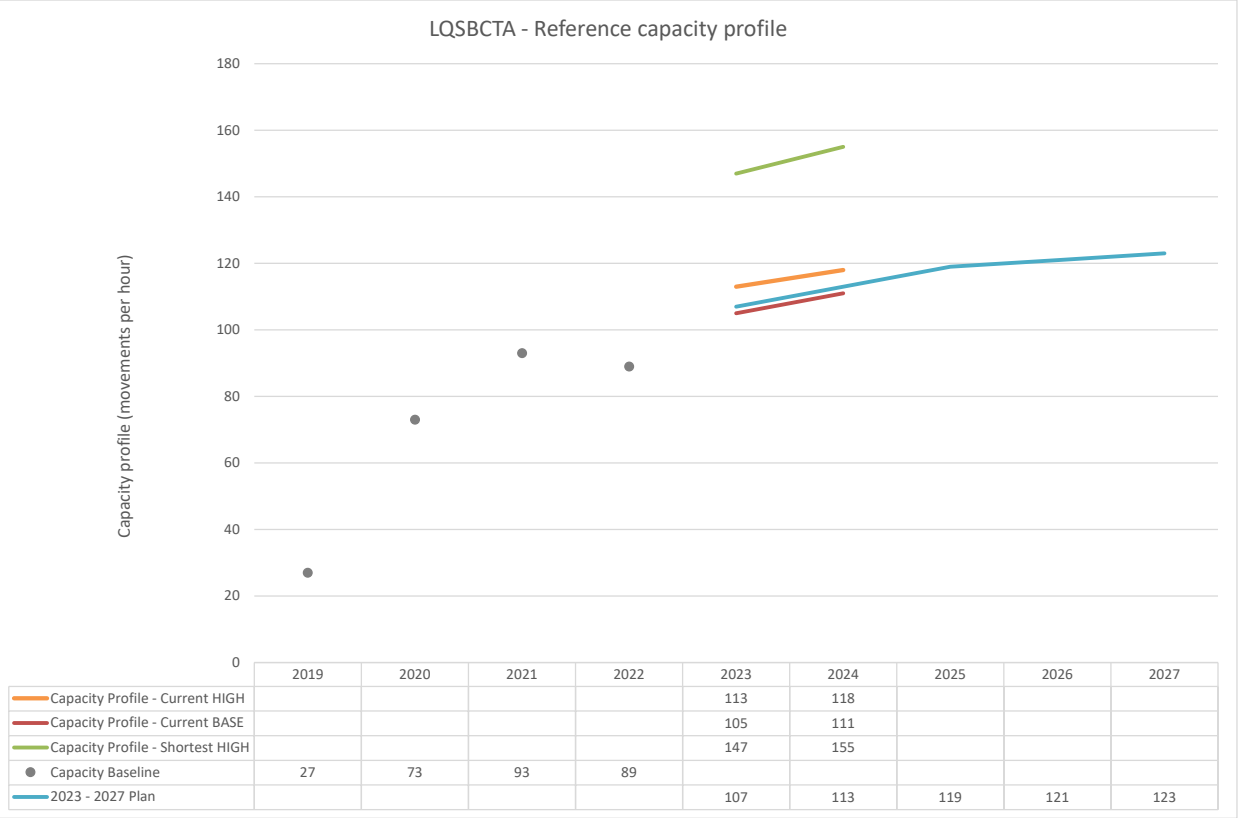
Nb sectors (std)
Nb sectors (max)



	2019	2020	2021	2022	2023	2024	2025	2026	2027
Capacity Profile - Current HIGH					113	118			
Capacity Profile - Current BASE					105	111			
Capacity Profile - Shortest HIGH					147	155			
Capacity Baseline	27	73	93	89					
2023 - 2027 Plan					107	113	119	121	123

2023-2027 Outlook
The capacity plan will be sufficient in the Baseline traffic growth hypothesis only. A capacity gap is expected during the planning period in case of High traffic growth.

3. Implementation Projects

The tables below presents the high-level information about the main projects currently ongoing in Bosnia and Herzegovina. The details of each project are available in the LSSIP DB (extraction can be asked to LSSIP FP or LSSIP CP).

3.1. National projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
New MET	BHANSA (BA)	4Q 2024	Procurement is in progress.	-
New Radio Stations (APP)	BHANSA (BA)	4Q 2024	Procurement is in progress.	-

3.2. FAB projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Airspace Task Force	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), Croatia Control Ltd. (CCL) Service Provider (HR), HungaroControl Pte. Ltd. Co (HU), Letove prevadzkove sluzby Slovenskej republiky, statny podnik (SK), Slovenia Control (SI)	Start: April 2019, End: permanent	Ongoing	AOM21.2 SESAR Key Feature: Advanced Air Traffic Services DP2018 Families: AF 3.2.1, AF 3.2.3, AF 3.2.4, AF #4 FAB CE Strategic Objectives: • FSO5, target 5.1: Implement Free Route Airspace “Baseline scenario”. • FSO10, target 10.3: Incorporate actions supporting the SESAR deployment (Deployment Plan / Programme 2015) in the joint FAB CE planning process and planning documentation.

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
DEVOPS: FABCE Development of Operational Performance and ATM Strategies (previously Project 1) (DEVOPS)	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), Croatia Control Ltd. (CCL) Service Provider (HR), HungaroControl Pte. Ltd. Co (HU), Letove prevadzkove sluzby Slovenskej republiky, statny podnik (SK), Slovenia Control (SI)	Start: January 2011, End: permanent	FAB CE FRA Study was completed in 2017. Other activities currently on hold or managed in the FAB CE ATF.	AOM21.2 SESAR Key Feature: Advanced air traffic services DP2018 Families: AF 3.2.1, AF 3.2.3, AF 3.2.4, AF #4 FAB CE Strategic Objectives: • FSO5, target 5.1: Implement Free Route Airspace "Baseline scenario" • FSO10, target 10.3: Incorporate actions supporting the SESAR deployment (Deployment Programme) in the joint FAB CE planning process and planning documentation
FAB CE Contingency Readiness - Phase II	Austrocontrol (AT), ASP ANS CR (CZ), Letove prevadzkove sluzby Slovenskej republiky, statny podnik (SK), HungaroControl Pte. Ltd. Co (HU), Slovenia Control (SI), BHANSA (BA), Croatia Control Ltd. (CCL) Service Provider (HR),	Start: January 2019, End: Currently on hold	Currently on hold	SESAR Key Feature: Advanced Air Traffic Services DP2018 Families: none FAB CE Strategic Objectives: • No direct link but activity supports strategic objectives in FSO9 and FSO10
FAB CE TSA/TRA Harmonisation	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), Croatia Control Ltd. (CCL) Service Provider (HR), HungaroControl Pte. Ltd. Co (HU), Letove prevadzkove sluzby Slovenskej republiky, statny podnik (SK), Slovenia Control (SI)	Start : February 2022, End: June 2023	Assessment completed, the proposed topics are subject to further elaboration in the form of a project plan (or similar) to fully scope the associated tasks and work.	SESAR Key Feature: none DP2018 Families: none Enabling aviation infrastructure FAB CE Strategic Objectives: • FSO1: Jointly develop and implement FAB CE airspace compliant with ANSP requirements and the EAAS vision

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Navigation infrastructure optimization project	Austrocontrol (AT), ASP ANS CR (CZ), Letove prevadzkove sluzby Slovenskej republiky, statny podnik (SK), HungaroControl Pte. Ltd. Co (HU), Slovenia Control (SI), BHANSA (BA), Croatia Control Ltd. (CCL) Service Provider (HR),	Start: April 2018, End: June 2020	Completed	CNS Rationalisation DP2018 Families: AF1– Extended AMAN and PBN in high-density TMA: • AF1.2.3 – RNP 1 Operations in high-density TMAs (ground capabilities) • AF1.2.5 – Advanced RNP routes below FL 310 Enabling aviation infrastructure FAB CE Strategic Objectives: • FSO6, target 6.1: CNS Infrastructure cost containment activities projected into FAB CE Architecture • FSO6, target 6.3: Incorporate planning of the CNS infrastructure and ATM processing systems aligned with RP planning, to achieve its harmonisation and optimisation in the FAB CE Implementation Plan • FSO6, target 6.4: Establish common operation of CNS infrastructure and ATM processing services as defined by the FAB CE Architecture including shared data processing functions, shared information pool and sharing of human resources where applicable and proven to be beneficial • FSO7, target 7.1: Establish FAB CE common approach to technical operation and corrective/preventive maintenance of systems, including sharing of spare parts

3.3. Multinational projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Innovative transportation services for blind and visually impaired passengers in Danube Region	SARAJEVO Airport (BA)	Ongoing	Opened	-

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 (JCMACC). 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 continued COVID-19 pandemic and the resulting changes in the ANSPs' strategic focus areas and priorities, number of FAB CE activities have been previously delayed, postponed to 2022+ or even cancelled. Although the FAB CE traffic has recovered in 2022 back to 2019 levels, the recovery is still volatile and not consistent throughout the region. The most important projects have been re-initiated albeit the scope has been often revised to align the objectives with the new situation. The following bullets summarise the most important activities delivering the benefits to airspace users in 2022:

- The FAB CE Airspace Task Force continued to work closely with NM and ANSPs outside FAB CE to expand FRA across the important central/south-east European airspace region. Following successful extensions of SECSI FRA with Albania and North Macedonia in 2021, in 2022 the activities continued with implementation of 24-hour cross-border FRA operations between SEE FRA and Baltic FRA, to allow seamless FRA operations with South-East, Central and North Europe. The SEE FRA area was expanded in February 2022 with the Republic of Moldova.

  In addition, FAB CE and FABEC have also agreed to introduce cross-border operations for free route airspace. Following the signature of a joint declaration in summer 2021 to deepen the cooperation between the functional airspace blocks, the new cross-border interface will be established between the Karlsruhe SÜD Free Route Airspace in Germany and the SECSI FRA (Southeast Europe Common Sky Initiative Free Route Airspace) on the border with Austria. Implementation started in stages from 24 March 2022. Cross-border free route operations between Austria and Germany are being started gradually. All initiatives will allow airspace users to use more climate-friendly flight profiles.

  Following the update of concept-of-operations documents and a comprehensive safety analysis, the Czech Republic is on course to join the South-East Europe Free Route Airspace (SEE FRA) area in the first quarter of 2023.

- The FAB CE Airspace Task Force is a dedicated group working in co-operation with the Network Manager (NM) and adjacent air navigation service providers (DANUBE FAB, PANSA, SMATSA) tasked

with transforming the EAAS 2025 and 2030 Visions to implementable airspace design solutions. The FAB CE Airspace Plan 2022 was developed to implement the concepts of the European Airspace Architecture Study (EAAS) in the domains of airspace and capacity.

- FAB CE created a special task force (TF) to support the JCMACC initiative to progress on TRA/TSA harmonisation. The objective of the task force is to map the current TSA/TRA utilisation principles in FAB CE; assess these principles in the framework of the requirements of EC Regulations, EUROCONTROL ERNIP guidelines and other relevant documentation to address the potential differences of the national implementations with international requirements; and consider future TSA/TRA needs in light of EAAS 2025 /2030 vision and known FABCE military requirements. In 2022, the CONOPS for TSA/TRA harmonisation was developed together with the guidelines for TSA/TRA design and publication. The group is also working on guidelines for ASM performance monitoring and measurement which will be delivered in the course of 2023.
- The FAB CE ANSPs have set up a 'U-space Coordination Group' to exchange data on UAS traffic management implementation programmes. The group's tasks cover several aspects of U-space programme coordination, including implementation of dynamic airspace reconfiguration; integration of Common Information Services (CIS); integration of U-space service provision (USSP) models and associated services; and definition of requirements for providers of air traffic management/air navigation services and other air traffic network functions in the U-space airspace designated in controlled airspace. The Coordination Group is also identifying opportunities for further possible cooperation in areas such as developing a common FAB CE risk assessment methodology for the implementation of U-Space airspace and associated services; publication of U-Space airspace information; financing and charging schemes for CIS and other services. The group will also coordinate procuring CIS/USSP systems and assessing already implemented by some FAB CE ANSPs for use by other FAB CE ANSPs.
- Building on the successful completion of the Surveillance optimisation project and NAVAID optimisation projects, the FAB CE ANSPs continue to coordinate their CNS infrastructure plans using the processes developed under these projects. The experts meet on an annual basis with an objective to exploit opportunities for aligning the investment plans in order to optimise the CNS infrastructure in the region and further expand cross-border cooperation in this domain.
- After completion of number of cooperation activities in the technical domain in 2021, the FAB CE initiated additional projects in 2022. Examples include development of a joint template for the FAB CE SSR Frequency monitoring SLA or started to coordinate their activities to overcome challenges and solutions to meeting the December 2025 deadline for implementing system wide implementation management (SWIM).
- The FAB CE ANSPs also continued their cooperation in the safety domain. Following development of annual FAB CE Safety Performance Report, a number of dedicated working groups (e.g., safety monitoring working group, safety survey working group or occurrence reporting and investigation groups) have been established under the umbrella of the Safety SubCommittee to perform specific tasks. The FAB CE Safety Policy and the FAB CE Safety Roadmap have been reviewed and updated. A 'safety toolbox' has been developed to support and promote safety awareness in the FAB CE by providing single source and free access information. It is a living collection of the harmonised FAB CE safety activities and the best practices used by FAB CE ANSPs. The safety activities are further elaborated in detail by Safety Management Manual. The best practices are collected and processed by the working groups. The best practices become a candidate for regular activity based on their maturity and level of harmonisation within the FAB CE

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

Southeast 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 has been in 2017 merged into the Southeast Europe Common Sky Initiative (SECSI FRA) creating a large cross-border FRA block including Austria, Bosnia and Herzegovina, Serbia and Slovenia.

The SECSI FRA went operational on the 1st of February 2018 offering airspace user's significant benefits along the Southeast Axis, by delivering the shortest route options from Central Europe to South Eastern Europe. The benefits gained through the SESCI 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 reduction in CO2 emission 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 or wind or adopt 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.

EGAFOR FORECAST

BHANSA started issuing eGAFOR forecast as of May 20, 2021 at 02:00 UTC.
eGAFOR forecast for the recommended VFR routes can be found on the following website http://egafor.eu.
Given the low-level flights (LLF), considering safety, are the most sensitive part of aviation to which various unharmonious meteorological products are available, the eGAFOR project idea is based on the cooperation of MET service providers (METSPs) in Central and South-eastern Europe with the aim of providing a harmonious MET product for a flight planned in the area covering several countries.
The future MET product, eGAFOR Forecast will be issued in a harmonized way. Forecaster at neighbouring Meteorological Watch Offices (MWOs) will harmonise their EGAFOR forecasts on common sections of routes at FIR borders, for the same period of validity which will be eventually available to the users at one place.
MET service providers participating in this project are, besides BHANSA – Bosnia and Herzegovina Air Navigation Services Agency, also and: ARSO – Slovenian Environment Agency, CCL – Croatia Control Ltd., SMATSA d.o.o. – Serbia and Montenegro Air Traffic Services Agency, OMSZ – Hungarian Meteorological Service, ROMATSA – Romanian Air Traffic Services Administration and SHMU – Slovak Hydrometeorological Institute.
IBL Software Engineering participates as an industry partner.
With the goal of the project in mind, Innovation and Networks Executive Agency (INEA). A body of the European Commission, recognised the value of the eGAFOR Project through CEF Transport Cell 2016 and the EU funded it with 85%.

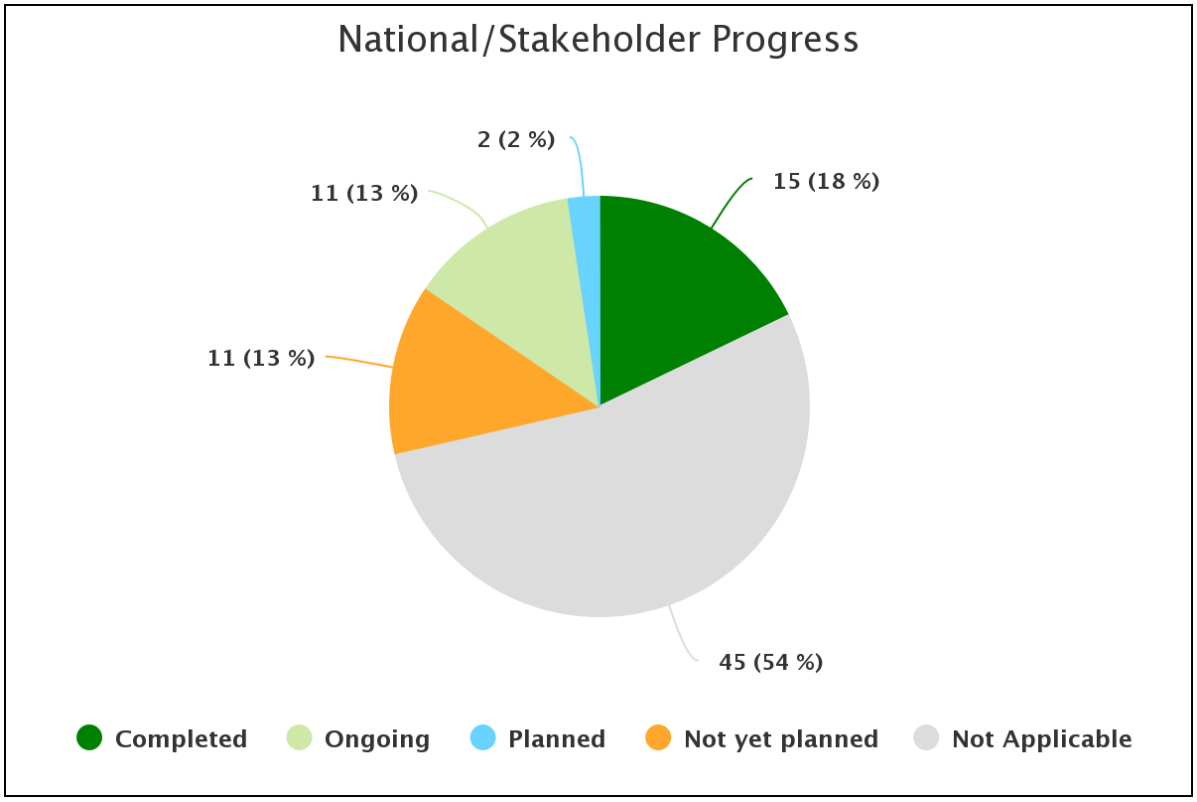
ECAA (EUROPEAN COMMON AVIATION AREA)

ECAA (European Common Aviation Area) is a project initiated and managed by the European Commission, aiming at the establishment of equal conditions of competition and common rules in aviation, including ATM and environment. As for ATM, the project will seek the highest degree of cooperation with the view to extending SES among the States concerned (ECAA Agreement was signed between the European Community and its Member States, the Republic of Albania, Bosnia and Herzegovina, the Republic of Bulgaria, the Republic of Croatia, the Former Yugoslav Republic of Macedonia, the Republic of Iceland, the Republic of Montenegro, the Kingdom of Norway, Romania, the Republic of Serbia and the United Nations Interim Administration Mission Kosovo (pursuant to UN Security Council Resolution 1244 of June 10th 1999) on Establishment of a European Common Aviation Area).
ECAA Agreement entered into force on December 1st 2017.
As per Decision No 1/2019 of the ECAA Joint Committee of 21 July 2019, the Annex to this Decision replaces Annex I to the ECAA Agreement, as from 1 September 2019.

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).



Source: EUROCONTROL LSSIP+ DB

Summary of the implementation of the objectives

In the period 2022-2023 Bosnia and Herzegovina finished following objectives:

AOM 19.4 - Management of Predefined Airspace Configurations

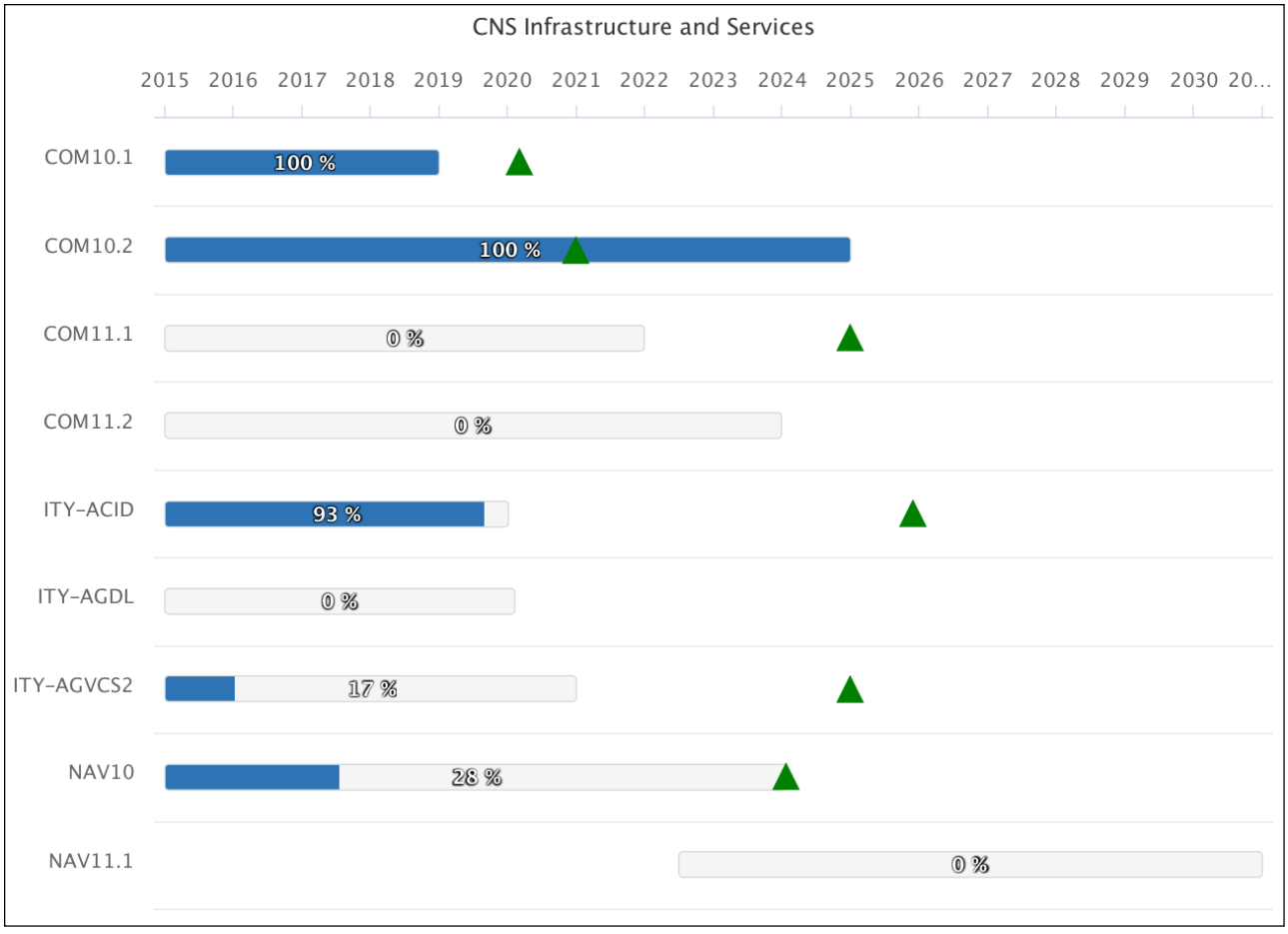
AOM 19.5- ASM and A-FUA

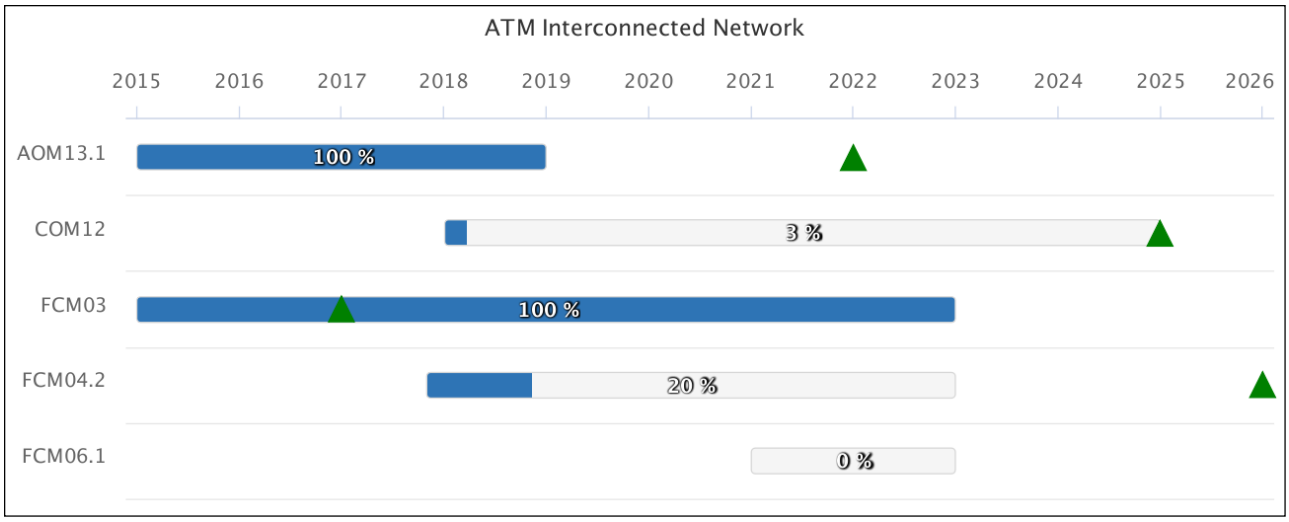
AOM 21.2- Initial Free Route Airspace

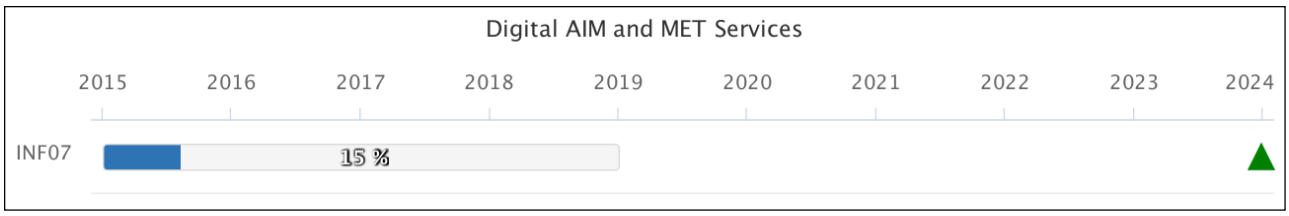
FCM03- Collaborative Flight Planning

5.2. Objective Progress per SESAR Essential Operational Changes

CNS infrastructure and services



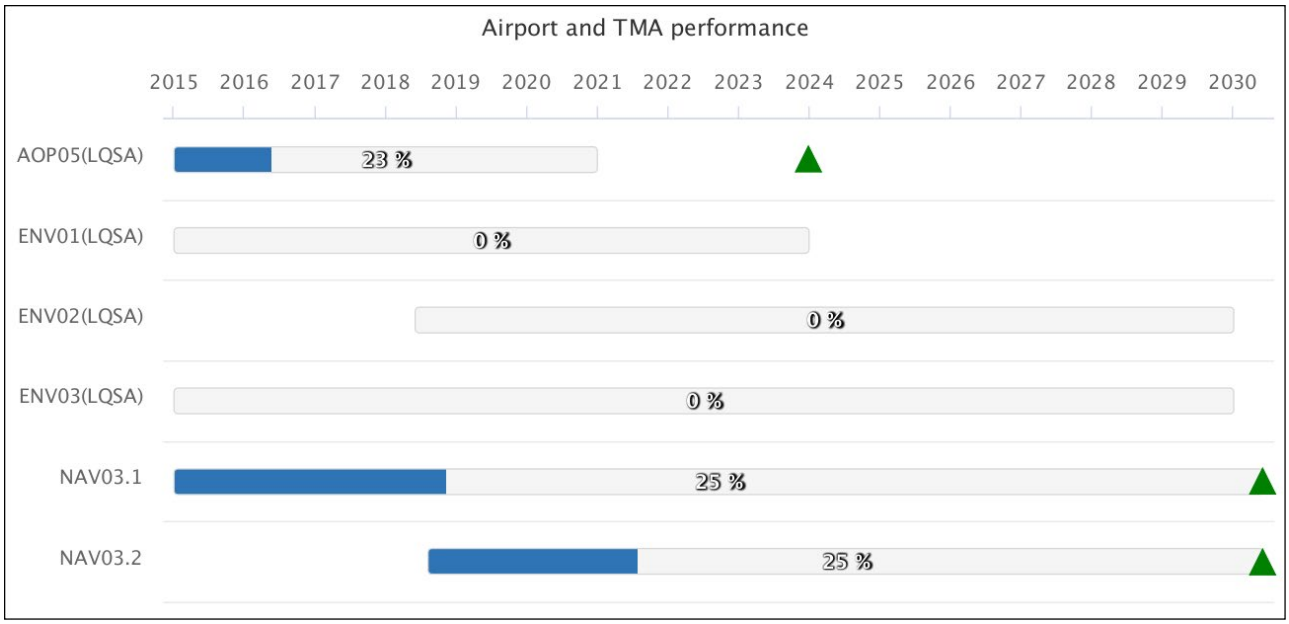




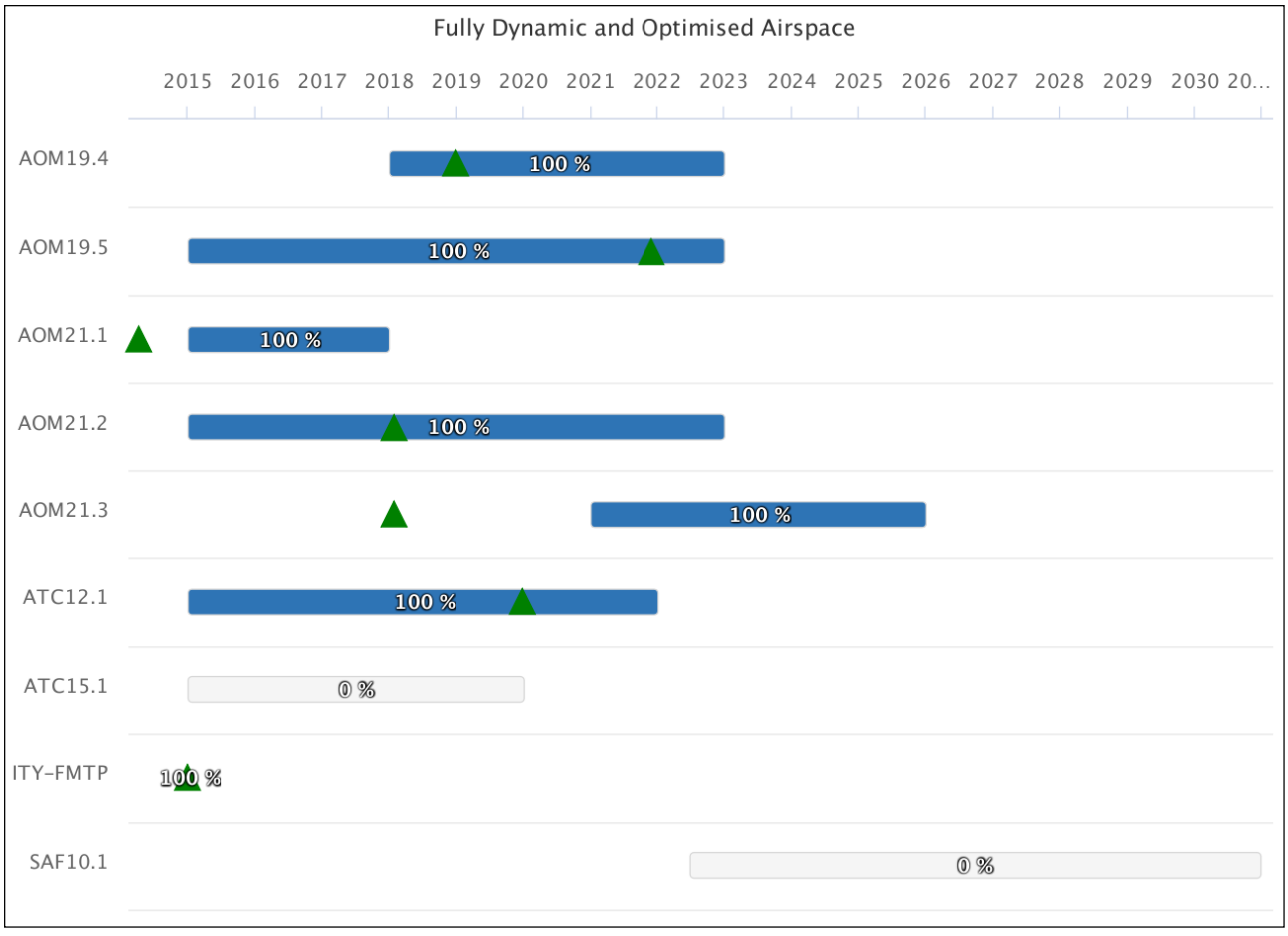
No implementation objectives are available yet for this EOC.

No implementation objectives are available yet for this EOC.

ATp Airport and TMA performance



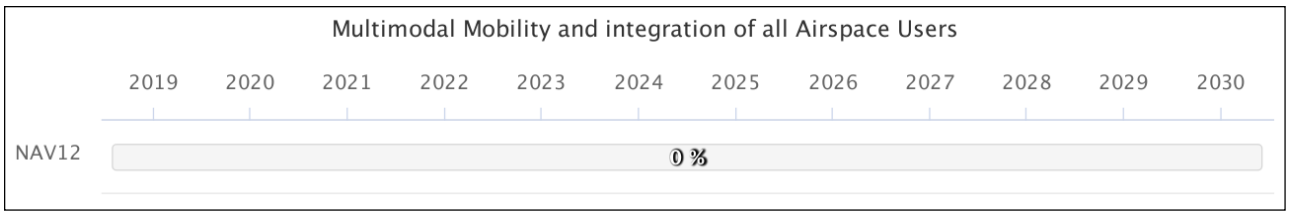
dA Fully dynamic and optimised airspace



TBO Trajectory -based operations

No implementation objectives are available yet for this EOC.

M3 Multimodal mobility and integration of all airspace users



Source: EUROCONTROL LSSIP+ DB

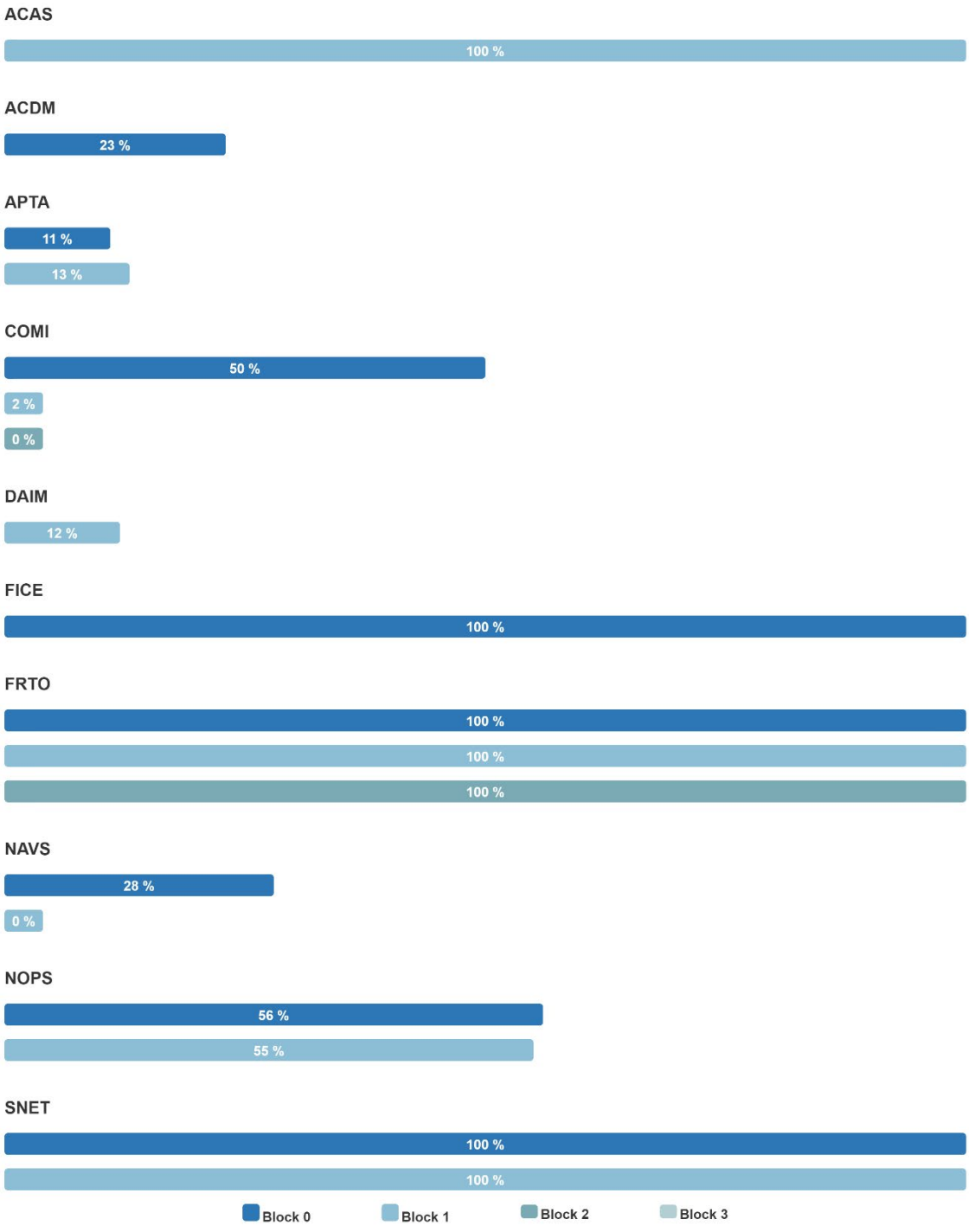
5.3.ICAO ASBU Implementation Progress

The tables below show for each 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.

The final set of Block 0 and Block 1 ASBU elements to be monitored in ICAO EUR Region has been approved through written consultation by European Aviation System Planning Group (EASPG) in May 2022, based on the conclusions of the EUR Global Air Navigation Plan (GANP) Transition Project Team.

Results below were determined using the LSSIP Year 2022 declared statuses and progress of the relevant Implementation objectives in accordance with the updated mapping approved by the EASPG/3 meeting.

Note: Only the ASBU elements that are linked to an active implementation Objective are shown.



Source: EUROCONTROL LSSIP+ DB

5.4. Detailed Objectives Implementation progress

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

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			**31/12/2021**
REG (By:12/2018)			
BHDCA		100%	Completed
Completed		-	22/11/2019
ASP (By:12/2018)			
BHANSA		100%	Completed
BHANSA completed objective		-	31/12/2018
MIL (By:12/2018)			
Mil. Authority		100%	Completed
MoD and BHANSA signed an agreement with seven annexes on 27 January 2016 in order to Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling		-	31/12/2021

SDP 3.1.2 **AOM19.4**	**Management of Predefined Airspace Configurations** ***Timescales:*** Initial operational capability: 01/01/2018 Full Operational Capability / Target Date: 31/12/2022	**100%**	**Completed**
	-		
NM systems and applications such as CHMI and CIAM are being used as a system support. Additionally, an AMC Portal, developed internally is extensively used as an interface between provider and airspace users.			**31/12/2018**
ASP (By:12/2022)			
BHANSA		100%	Completed
NM systems and applications such as CHMI and CIAM are being used as a system support. Additionally, an AMC Portal, developed internally is extensively used as an interface between provider and airspace users.		-	31/12/2018

SDP 3.1.1 **AOM19.5**	**ASM and A-FUA** ***Timescales:*** Initial Operational Capability: 01/01/2014 Full Operational Capability / Target Date: 31/12/2022	**100%**	**Completed**
	-		
LARA agreement signed in early 2018, procurement and validation took place in 2018. CIMACT agreement signed in 2021.Implementation in progress.			**30/11/2021**

ASP (By:12/2022)		
BHANSA	100%	Completed
LARA agreement signed in early 2018, procurement and validation took place in 2018. CIMACT agreement signed in 2021.Implementation in progress.	-	30/11/2021

SDP 3.2.1 AOM21.2	**Initial Free Route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full Operational Capability / Target Date: 31/12/2022	**100%**	**Completed**
	-		
BHANSA is part of SEAFRA, FRA environment consisting of airspace of 4 states (Croatia, Bosnia and Herzegovina, Serbia and Montenegro) and 3 ANSP (CROCONTROL, BHANSA and SMATSA). Following SEAFRA H24 implementation by 08/12/2016 for all traffic above FL 325 (above the FIR Sarajevo), the FRA operations were extended down to above FL 205 inside the FIR Sarajevo from 01/02/2018. SEAFRA is also now co-operated with SAXFRA from other FAB CE States (Austria, Slovenia).			**01/02/2018**
ASP (By:12/2022)			
BHANSA		100%	Completed
BHANSA is part of SEAFRA, FRA environment consisting of airspace of 4 states (Croatia, Bosnia and Herzegovina, Serbia and Montenegro) and 3 ANSP (CROCONTROL, BHANSA and SMATSA). Following SEAFRA H24 implementation by 08/12/2016 for all traffic above FL 325 (above the FIR Sarajevo), the FRA operations were extended down to above FL 205 inside the FIR Sarajevo from 01/02/2018. SEAFRA is also now co-operated with SAXFRA from other FAB CE States (Austria, Slovenia)		Airspace Task Force / DEVOPS: FABCE Development of Operational Performance and ATM Strategies (previously Project 1)	01/02/2018

SDP 3.2.2 AOM21.3	**Enhanced Free Route Airspace Operations** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**100%**	**Completed**
	-		
Completed			**01/02/2018**
ASP (By:12/2025)			
BHANSA		100%	Completed
Completed		-	01/02/2018

AOP04.1	**Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance Service (former ICAO Level 1)** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
	LQSA - Sarajevo International Airport **(Outside Applicability Area)**		
Not applicable to LQSA			**-**
REG (By:12/2010)			
BHDCA		0%	Not Applicable
Not applicable.		-	-
ASP (By:01/2021)			
BHANSA		0%	Not Applicable
Not applicable to Sarajevo airport-		-	-
APO (By:01/2021)			

AOP04.2	**Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (Airport Safety Support Service = former ICAO Level 2)** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
LQSA - Sarajevo International Airport **(Outside Applicability Area)**			
Not applicable to Sarajevo airport-			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not applicable to Sarajevo airport-		-	-
APO (By:12/2025)			

AOP05	**Airport Collaborative Decision Making (A-CDM)** ***Timescales:*** Initial operational capability: 01/01/2004 Full operational capability: 31/12/2020	**23%**	**Ongoing**
LQSA - Sarajevo International Airport			
Ongoing			**31/12/2023**
ASP (By:01/2021)			
BHANSA		28%	Ongoing
Ongoing		-	31/12/2023
APO (By:01/2021)			
SARAJEVO Airport		18%	Ongoing
Planned by Businesses Plan for 2019-2020, and next consecutive three years. Zijadić ATM Master Plan – Aeronautički projekti AOP05 -LSSIP. 06.11.2020 Zijadić: Due to COVID-19 for Plan 2020-2022, only for 2022 we have available some financial resources for this Project. 06.12.2021 Zijadić: We did not have any activities in this goal, due to COVID-19. 06.12.2022 Zijadić: We did not have any activities in this goal, due to post COVID-19.		-	31/12/2023

AOP10	**Time-Based Separation** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
LQSA - Sarajevo International Airport **(Outside Applicability Area)**			
Not applicable to Sarajevo airport. LQSA is not a CP1 Airport (Master Plan/Annex 3-Applicability to Airports).			**-**
REG (By:01/2024)			
BHDCA		0%	Not Applicable
LQSA not PCP airport		-	-
ASP (By:12/2024)			
BHANSA		0%	Not Applicable
LQSA not PCP airport		-	-

SDP 2.2.1 **AOP11.1**	**Initial Airport Operations Plan** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
LQSA - Sarajevo International Airport **(Outside Applicability Area)**			

Not Applicable		**-**
ASP (By:12/2023)		
BHANSA	0%	Not Applicable
Not Applicable	-	-
APO (By:12/2023)		
SARAJEVO Airport	0%	Not Applicable
Not Applicable	-	-

SDP 2.2.2 AOP11.2	**Extended Airport Operations Plan** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
LQSA - Sarajevo International Airport **(Outside Applicability Area)**			
Not Applicable			**-**
ASP (By:12/2027)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
APO (By:12/2027)			
SARAJEVO Airport		0%	Not Applicable
Not Applicable		-	-

SDP 2.3.1 AOP12.1	**Airport Safety Nets** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
LQSA - Sarajevo International Airport **(Outside Applicability Area)**			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
APO (By:12/2025)			
SARAJEVO Airport		0%	Not Applicable
Not Applicable		-	-

AOP13	**Automated Assistance to Controller for Surface Movement Planning and Routing** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
LQSA - Sarajevo International Airport **(Outside Applicability Area)**			
Not applicable. LQSA is not a CP1 Airport (Master Plan/Annex 3- Applicability to Airports).			**-**
REG (By:12/2025)			
BHDCA		0%	Not Applicable
Not applicable		-	-
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 2.1.1 AOP19	**Departure Management Synchronised with Pre-departure sequencing** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
LQSA - Sarajevo International Airport **(Outside Applicability Area)**			
Not Applicable			**-**
ASP (By:12/2022)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
APO (By:12/2022)			
SARAJEVO Airport		0%	Not Applicable
Not applicable		-	-

SDP 3.2.1 ATC02.8	**Ground-Based Safety Nets** ***Timescales:*** Initial operational capability: 01/01/2009 Full operational capability: 31/12/2021	**0%**	**Not Applicable**
-			
BHANSA upgraded ATC system and now there is no this functionality. **APW function is no implemented in new upgraded the ATC system.** **APM function is no implemented in new upgraded the ATC system**			**-**
ASP (By:12/2021)			
BHANSA		0%	Not Applicable
BHANSA upgraded ATC system and now there is no this functionality. APW function is no implemented in new upgraded the ATC system. APM function is no implemented in new upgraded the ATC system.		-	-

ATC07.1	**AMAN Tools and Procedures** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
LQSA - Sarajevo International Airport **(Outside Applicability Area)**			
Bosnia and Herzegovina is outside the applicability area. At this stage there is no plan to implement arrival tools. The main complexity with Sarajevo airport is the interaction between arrival and departure traffic flows. There is no operational justification for the implementation of this objective.			**-**
ASP (By:01/2020)			
BHANSA		0%	Not Applicable
At this stage there is no plan to implement arrival tools. The main complexity with Sarajevo airport is the interaction between arrival and departure traffic flows. There is no operational justification for the implementation of this objective.		-	-

SDP 3.2.1 ATC12.1	**Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 31/12/2021	**100%**	**Completed**
-			
According to plans, FDPS system was updated by 2019.			**31/12/2019**
ASP (By:12/2021)			

BHANSA	100%	Completed
According to plans, FDPS system was updated by 2019, and MTCD function is one of the requirements	-	31/12/2019

ATC15.1	**Information Exchange with En-route in Support of AMAN** ***Timescales:*** Initial operational capability: 01/01/2012 Full operational capability: 31/12/2019	**0%**	**Not yet planned**
	-		
No plan at present due to lack of needs from adjacent ATSUs.			-
ASP (By:12/2019)			
BHANSA		0%	Not yet planned
No plan at present due to lack of needs from adjacent ATSUs. Its possible implementation will be periodically assessed		-	-

SDP 1.1.1 **ATC15.2**	**Arrival Management Extended to En-route Airspace** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
	LQSA - Sarajevo International Airport **(Outside Applicability Area)**		
Not Applicable			-
ASP (By:12/2024)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 1.2.1 **ATC19**	**AMAN/DMAN Integration** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
	LQSA - Sarajevo International Airport **(Outside Applicability Area)**		
Not Applicable			-
ASP (By:12/2027)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
APO (By:12/2027)			
SARAJEVO Airport		0%	Not Applicable
Not Applicable		-	-

COM10.2	**Extended AMHS** ***Timescales:*** Initial Operational Capability: 01/12/2011 Full Operational Capability: 31/12/2024	**100%**	**Completed**
	-		
Completed in Q4 2020			**31/12/2020**
ASP (By:12/2024)			
BHANSA		100%	Completed
Completed in Q4 2020		-	31/12/2020

COM11.1	**Voice over Internet Protocol (VoIP) in En-Route** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2021	**0%**	**Planned**
	-		

Implementation has been delayed due to COVID-19		**31/12/2024**
ASP (By:12/2021)		
BHANSA	0%	Planned
Implementation has been delayed due to COVID-19	New Radio Stations (APP)	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	**0%**	**Not yet planned**
	-		
Not yet planned			**-**
ASP (By:12/2023)			
BHANSA		0%	Not yet planned
not yet planned		-	-

COM12	**New Pan-European Network Service (NewPENS)** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2024	**3%**	**Ongoing**
	-		
BHANSA started activity			**31/12/2024**
ASP (By:12/2024)			
BHANSA		5%	Ongoing
Activity started		-	31/12/2024
APO (By:12/2024)			
SARAJEVO Airport		0%	Not yet planned
Not yet planned		-	-

ENV01	**Continuous Descent Operations (CDO)** ***Timescales:*** Initial operational capability: 01/07/2007 Full operational capability: 31/12/2023	**0%**	**Not yet planned**
	LQSA - Sarajevo International Airport		
Initial CDO implementation activities took place back to 2013. There is at the moment no further plan to develop and finalize CDO implementation at Sarajevo airport. Airspace constraints are also limiting to scope of CDO operations.			**-**
ASP (By:12/2023)			
BHANSA		0%	Not yet planned
There is at the moment no further plan to develop and finalize CDO implementation at Sarajevo airport. Airspace constraints are also limiting to scope of CDO operations.		-	-
APO (By:12/2023)			
SARAJEVO Airport		0%	Not yet planned
Not yet planned		-	-

FCM03	**Collaborative Flight Planning** ***Timescales:*** Initial operational capability: 01/01/2000 Full operational capability: 31/12/2022	**100%**	**Completed**
	-		
Objective implemented.			**01/01/2017**

ASP (By:12/2022)		
BHANSA	100%	Completed
Objective implemented.	-	01/01/2017

SDP 4.1.1 FCM04.2	**Enhanced Short Term ATFCM Measures** ***Timescales:*** Initial operational capability: 01/11/2017 Full Operational Capability / Target Date: 31/12/2022	**20%**	**Ongoing**
	-		
In progress			**31/12/2025**
ASP (By:12/2022)			
BHANSA		20%	Ongoing
Ongoing		-	31/12/2025

SDP 4.3.1 FCM06.1	**Automated Support for Traffic Complexity Assessment and Flight Planning interfaces** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target date: 31/12/2022	**0%**	**Not yet planned**
	-		
Not yet planned, budget constraints			-
ASP (By:12/2022)			
BHANSA		0%	Not yet planned
Not yet planned, budget constraints		-	-

SDP 4.2.1 FCM10	**Interactive Rolling NOP** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2023	**0%**	**Not Applicable**
	-		
Not applicable			-
ASP (By:12/2023)			
BHANSA		0%	Not Applicable
Not applicable		-	-
APO (By:12/2023)			
SARAJEVO Airport		0%	Not Applicable
Not appl		-	-

SDP 4.2.2 FCM11.1	**Initial AOP/NOP Information Sharing** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
	LQSA - Sarajevo International Airport **(Outside Applicability Area)**		
Not Applicable			-
ASP (By:12/2023)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
APO (By:12/2023)			
SARAJEVO Airport		0%	Not Applicable
Not Applicable		-	-

SDP 4.4.1 FCM11.2	**AOP/NOP integration** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
LQSA - Sarajevo International Airport **(Outside Applicability Area)**			
Not Applicable			-
ASP (By:12/2027)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
APO (By:12/2027)			
SARAJEVO Airport		0%	Not Applicable
Not Applicable		-	-

INF07	**Electronic Terrain and Obstacle Data (eTOD)** ***Timescales:*** Initial operational capability: 01/11/2014 Full operational capability: 31/12/2018	**15%**	**Ongoing**
-			
Ministry of Communication and Transport of Bosnia and Herzegovina plans to issue National TOD Policy during 2022/2023. Draft of the National TOD Policy has been made in 2018.			**31/12/2023**
REG (By:01/2019)			
BHDCA		20%	Ongoing
Ministry of Communication and Transport of Bosnia and Herzegovina plans to issue National TOD Policy during 2022/2023. Draft of the National TOD Policy has been made in 2018.		-	31/12/2023
ASP (By:01/2019)			
BHANSA		20%	Ongoing
Ministry of Communication and Transport of Bosnia and Herzegovina plans to issue National TOD Policy during 2022/2023. Draft of the National TOD Policy has been made in 2018.		-	31/12/2023
APO (By:01/2019)			
SARAJEVO Airport		0%	Planned
Ministry of Communication and Transport of Bosnia and Herzegovina plans to issue National TOD Policy during 2022/2023. Draft of the National TOD Policy has been made in 2018.		-	31/12/2023

SDP 5.2.1 INF10.2	**Stakeholders' SWIM PKI and cyber security** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			-
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
APO (By:12/2025)			
SARAJEVO Airport		0%	Not Applicable
Not Applicable		-	-
MET (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.3.1 INF10.3	**Aeronautical Information Exchange - Airspace structure service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.3.1 INF10.4	**Aeronautical Information Exchange - Airspace Availability Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.3.1 INF10.5	**Aeronautical Information Exchange - Airspace Reservation (ARES)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.3.1 INF10.6	**Aeronautical Information Exchange – Digital NOTAM service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
AIS (By:12/2025)			

SDP 5.3.1 INF10.7	**Aeronautical Information Exchange - Aerodrome mapping service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
AIS (By:12/2025)			

SDP 5.3.1 INF10.8	**Aeronautical Information Exchange - Aeronautical Information Features service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
	-		
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
AIS (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.4.1 INF10.9	**Meteorological Information Exchange - Volcanic Ash Mass Concentration information service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
	-		
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
MET (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.4.1 INF10.10	**Meteorological Information Exchange - Aerodrome Meteorological information Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
	-		
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
APO (By:12/2025)			
SARAJEVO Airport		0%	Not Applicable
Not Applicable		-	-
MET (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.4.1 INF10.11	**Meteorological Information Exchange - En-Route and Approach Meteorological information service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
MET (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.4.1 INF10.12	**Meteorological Information Exchange - Network Meteorological Information** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
MET (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.5.1 INF10.13	**Cooperative Network Information Exchange - ATFCM Tactical Updates Service (Airport Capacity and Enroute)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.5.1 INF10.14	**Cooperative Network Information Exchange – Flight Management Service (Slots and NOP/AOP integration)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-
APO (By:12/2025)			

SARAJEVO Airport	0%	Not Applicable
Not Applicable	-	-

SDP 5.5.1 INF10.15	**Cooperative Network Information Exchange – Measures Service (Traffic Regulation)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.5.1 INF10.16	**Cooperative Network Information Exchange - Short Term ATFCM Measures services (MCDM, eHelpdesk, STAM measures)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.5.1 INF10.17	**Cooperative Network Information Exchange – Counts service (ATFCM Congestion Points)** ***Timescales:*** - not applicable -	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.6.1 INF10.19	**Flight Information Exchange (Yellow Profile) - Flight Data Request Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.6.1 INF10.20	**Flight Information Exchange (Yellow Profile) - Notification Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**

-		
Not Applicable		-
ASP (By:12/2025)		
BHANSA	0%	Not Applicable
Not Applicable	-	-

SDP 5.6.1 INF10.21	**Flight Information Exchange (Yellow Profile) - Data Publication Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			-
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

SDP 5.6.1 INF10.23	**Flight Information Exchange (Yellow Profile) - Extended AMAN SWIM Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Not Applicable			-
ASP (By:12/2025)			
BHANSA		0%	Not Applicable
Not Applicable		-	-

ITY-ACID	**Aircraft Identification** ***Timescales:*** Entry into force of the Regulation: 13/12/2011 System capability: 02/01/2020	**93%**	**Ongoing**
-			
Line of action will be in accordance with the time frame (till 2020).			**01/12/2025**
ASP (By:01/2020)			
BHANSA		93%	Ongoing
Upgrade DPS New ARTAS system. Mode S above FL205 is declared for: harmonization with neighbours, VFR flights up to FL195. From a technical aspect, BHANSA has the technical capabilities (radar, communications, and coverage) to declare Mode S airspace in the area of responsibility of BHACC above FL 100. Thus, ATS has determined that it is sufficient to apply ITY-ACID only above FL 205 (because that is the SECSI FRA area, and that area is the most used).		-	01/12/2025

ITY-AGDL	**Initial ATC Air-Ground Data Link Services** ***Timescales:*** ATS unit operational capability: 05/02/2018 Aircraft capability: 05/02/2020	**0%**	**Not yet planned**
-			
No plan at the moment.			-
REG (By:02/2018)			
BHDCA		0%	Not yet planned

No plan at the moment.	-	-
ASP (By:02/2018)		
BHANSA	0%	Not yet planned
No plan at the moment	-	-
MIL (By:01/2019)		
Mil. Authority	0%	Not yet planned
Military do no provide ATC service to civil flights	-	-

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	**17%**	**Ongoing**
	-		
Ongoing			**31/12/2024**
REG (By:12/2018)			
BHDCA		0%	Planned
Commission Implementing Regulation (EU) No 1079/2012 of 16 November 2012 laying down requirements for voice channels spacing for the single European Sky have not been transposed in Bosnia and Herzegovina. The obligation of Bosnia and Herzegovina to transpose this regulation has existed since 2019. Bosnia and Herzegovina has transposed the Regulations 1265/2007 laying down space-ground voice channel requirements for a single European Sky.		-	31/12/2024
ASP (By:12/2018)			
BHANSA		44%	Ongoing
BHANSA will replace radio stations by the end of 2024.		New Radio Stations (APP)	31/12/2024
MIL (By:12/2020)			
Mil. Authority		0%	Planned
Planned		-	31/12/2024
APO (By:12/2018)			
SARAJEVO Airport		0%	Not yet planned
Not yet planned		-	-

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 was implemented in November2014.			**31/12/2014**

ASP (By:12/2014)		
BHANSA	100%	Completed
FMTP was implemented in November2014.	-	31/12/2014
MIL (By:12/2014)		
Mil. Authority	0%	Not Applicable
Military do no provide ATC service to civil flights	-	-

NAV03.1	**RNAV 1 in TMA Operations** ***Timescales:*** Initial operational capability: 01/01/2001 Locally determined number of RNAV1 SID/STAR, where established: 06/06/2030	**25%**	**Ongoing**
	-		
Planned.			**06/06/2030**
REG (By:06/2030)			
BHDCA		100%	Completed
Document verification completed.		-	21/12/2021
ASP (By:06/2030)			
BHANSA		14%	Ongoing
Planned		-	06/06/2030

NAV03.2	**RNP 1 in TMA Operations** ***Timescales:*** Start: 07/08/2018 Locally determined number of RNP1 SID/STAR, where established.: 06/06/2030	**25%**	**Ongoing**
	-		
Ongoing			**06/06/2030**
REG (By:06/2030)			
BHDCA		100%	Completed
Document verification completed.		-	21/12/2021
ASP (By:06/2030)			
BHANSA		14%	Ongoing
ongoing		-	06/06/2030

NAV10	**RNP Approach Procedures to instrument RWY** ***Timescales:*** Initial operational capability: 01/06/2011 Instrument RWY ends served by precision approach.: 25/01/2024 Instrument RWY ends without precision approach at other ECAC+ instrument RWYs.: 25/01/2024	**28%**	**Ongoing**
	-		
Ongoing			**25/01/2024**
REG (By:01/2024)			
BHDCA		50%	Ongoing
Verification of document "PBN Transition Plan for Bosnia and Herzegovina" is set for 31/12/2021. - Completed		-	25/01/2024
ASP (By:01/2024)			
BHANSA		20%	Ongoing
Ongoing		-	25/01/2024

NAV12	**ATS IFR Routes for Rotorcraft Operations** ***Timescales:*** IFR ATS route above/below FL150, SID and STAR for Rotorcraft Operations, where established: 06/06/2030	**0%**	**Not yet planned**
	-		
There were no established ATS routes, SID or STAR for Rotorcraft operations. **In the case that ATM/ANS provider choose to establish ATS routes, SID routes, or STAR routes exclusively for rotorcraft operations, these routes will be designed in accordance with the requirements of the RNP0.3, RNAV 1, or RNP 1 specification. In this case, ATM/ANS provider will decide which of these tree sets of requirements to meet.** **In this moment operational need for NAV12 not yet proven.**			-
REG (By:06/2030)			
BHDCA		0%	Not yet planned
There were no established ATS routes, SID or STAR for Rotorcraft operations. In the case that ATM/ANS provider choose to establish ATS routes, SID routes, or STAR routes exclusively for rotorcraft operations, these routes will be designed in accordance with the requirements of the RNP0.3, RNAV 1, or RNP 1 specification. In this case, ATM/ANS provider will decide which of these tree sets of requirements to meet. In this moment operational need for NAV12 not yet proven.		-	-
ASP (By:06/2030)			
BHANSA		0%	Not yet planned
There were no established ATS routes, SID or STAR for Rotorcraft operations. In the case that ATM/ANS provider choose to establish ATS routes, SID routes, or STAR routes exclusively for rotorcraft operations, these routes will be designed in accordance with the requirements of the RNP0.3, RNAV 1, or RNP 1 specification. In this case, ATM/ANS provider will decide which of these tree sets of requirements to meet. In this moment operational need for NAV12 not yet proven.		-	-

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 completely implemented in the Sarajevo FIR and BHANSA AoR			**15/04/2014**
ASP (By:12/2017)			
BHANSA	Direct routing has been completely implemented in the Sarajevo FIR and BHANSA AoR	-	100%	Completed 15/04/2014

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 available in ATC system and operationally used			**13/11/2014**
ASP (By:01/2013)			
BHANSA	STCA function available in ATC system and operationally used	-	100%	Completed 13/11/2014

ATC02.9	**Short Term Conflict Alert (STCA) for TMAs** **(Outside Applicability Area)** ***Timescales:*** - not applicable -	**100%**	**Completed**
	-		
All TMAs in SARAJEVO FIR are class E, and this objective is not relevant for implementation			**-**
ASP (By:12/2020)			
BHANSA	completed	-	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**
	-		
The performance monitoring of ACAS in the ATC environment is part of the incident occurrence reporting, investigation and analysis process established by BHANSA.			**31/12/2018**
REG (By:12/2015)			
BHDCA	EU regulation 1332/2011 is not transposed in B&H legislation, not implemented in Bosnia and Herzegovina yet.	-	100%	Completed 31/12/2018
ASP (By:03/2012)			
BHANSA	The performance monitoring of ACAS in the ATC environment is part of the incident occurrence reporting, investigation and analysis process established.	-	100%	Completed 31/12/2017
MIL (By:12/2015)			
Mil. Authority	n/a	-	0%	Not Applicable -

COM10.1	**Migrate from AFTN to AMHS (Basic service)** ***Timescales:*** Initial Operational Capability: 01/12/2011 Full Operational Capability: 31/12/2018		**100%**	**Completed**
	-			
Completed in Q2 2020.				**05/03/2020**
ASP (By:12/2018)				
BHANSA	Completed in Q2 2020	-	100%	Completed 05/03/2020

FCM01	**Implement enhanced tactical flow management services** ***Timescales:*** Initial operational capability: 01/08/2001 Full operational capability: 31/12/2006		**71%**	**Ongoing**
	-			
Planned by end of 2021.				**31/12/2023**
ASP (By:07/2014)				
BHANSA	Ongoing	-	71%	Ongoing 31/12/2023

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	**6%**	**Ongoing**
	-		
Regulation (EU) 73/2010 which is amended by Commission Implementing Regulation (EU) No 1029/2014 has been transposed in national legislation (published in Official Gazette of Bosnia and Herzegovina under the number 61/14 and 9/18), but not implemented yet.			**31/12/2024**
REG (By:06/2017)			
BHDCA		0%	Planned
Regulation (EU) 73/2010 which is amended by Commission Implementing Regulation (EU) No 1029/2014 has been transposed in national legislation (published in Official Gazette of Bosnia and Herzegovina under the number 61/14 and 9/18), but not implemented yet.		-	31/12/2023
ASP (By:06/2017)			
BHANSA		1%	Ongoing
Implementation planned. Complete implementation plan depends on the prerequisites stated under implementation issues. BHANSA would need to adjust its plans and actions.		-	31/12/2024
APO (By:06/2017)			
SARAJEVO Airport		15%	Ongoing
Ongoing		-	31/12/2023

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**
	-		
OLDI function is implemented in the ATC system, supporting ground-ground coordination and transfer processes			**13/11/2014**
ASP (By:12/2012)			
BHANSA		100%	Completed
OLDI function is implemented in the ATC system, supporting ground-ground coordination and transfer processes		-	13/11/2014
MIL (By:12/2012)			
Mil. Authority		0%	Not Applicable
Military do no provide ATC service to civil flights		-	-

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.

AOP14.1	Remote Tower Services *Applicability and timescale: Local*		%	Not Applicable
LQSA - Sarajevo International Airport				
Not Applicable				-
REG (By:)				
BHDCA	Not Applicable	-		Not Applicable -
ASP (By:)				
BHANSA	Not yet planned	-		Not Applicable -
APO (By:)				
SARAJEVO Airport	Not applicable	-		Not Applicable -

AOP15	Enhanced traffic situational awareness and airport safety nets for the vehicle drivers *Applicability and timescale: Local*		0%	Not Applicable
LQSA - Sarajevo International Airport				
Not Applicable				-
REG (By:04/2019)				
BHDCA	-	-		Not Applicable -
APO (By:)				
SARAJEVO Airport	-	-		Not Applicable -

AOP16	Guidance assistance through airfield ground lighting *Applicability and timescale: Local*		%	Not Applicable
LQSA - Sarajevo International Airport				
Not applicable				-
ASP (By:)				
BHANSA	Not applicable	-		Not Applicable -
APO (By:)				
SARAJEVO Airport	Not applicable	-		Not Applicable -

AOP17	Provision/integration of departure planning information to NMOC *Applicability and timescale: Local*		%	Not Applicable
LQSA - Sarajevo International Airport				
The objective will be updated next year.				-

ASP (By:)				
BHANSA	Not applicable	-		Not Applicable -

AOP18	**Runway Status Lights (RWSL)** ***Applicability and timescale: Local***	**%**	**Not Applicable**
LQSA - Sarajevo International Airport			
Traffic density does not justify the implementation of the objective.			**-**
REG (By:)			
BHDCA	Not Applicable	-	Not Applicable -
ASP (By:)			
BHANSA	Not Applicable	-	Not Applicable -
APO (By:)			
SARAJEVO Airport	Not applicable	-	Not Applicable -

AOP25	**De-icing management tool** ***Applicability and timescale: Local***	**%**	**Not Applicable**
LQSA - Sarajevo International Airport			
Not Applicable			**-**
ASP (By:)			
BHANSA	-	-	Not Applicable -
APO (By:)			
SARAJEVO Airport	-	-	Not Applicable -

AOP26	**Reduced separation based on local Runway Occupancy Time (ROT) characterisation** ***Applicability and timescale: Local***	**%**	**Not yet planned**
LQSA - Sarajevo International Airport			
Not yet planned			**-**
ASP (By:)			
BHANSA	Not yet planned	-	Not yet planned -

ATC18	**Multi-Sector Planning En-route - 1P2T** ***Applicability and timescale: Local***	**%**	**Not Applicable**
-			
Not Applicable			**-**
ASP (By:01/2030)			
BHANSA	Not applicable	-	Not Applicable -

ATC20	**Enhanced STCA with down-linked parameters via Mode S EHS** ***Applicability and timescale: Local***	**%**	**Not Applicable**

-				
not applicable				-
REG (By:01/2030)				
BHDCA	Not Applicable	-		Not Applicable -
ASP (By:01/2030)				
BHANSA	Not Applicable	-		Not Applicable -

ATC26	**Point Merge in complex TMA** ***Applicability and timescale: Local***	**%**	**Not Applicable**
LQSA - Sarajevo International Airport			
Not Applicable			-
ASP (By:)			
BHANSA	Arriving and departing traffic are organized as head on head, so this cannot be applied all the time. There is a merge point but is not always applicable due to the complexity of ARR and DEP traffic.	-	Not Applicable -

COM13	**Air Traffic Services (ATS) datalink using SatCom Class B** ***Applicability and timescale: Local***	**%**	**Not Applicable**
-			
Not Applicable			-
REG (By:)			
BHDCA	Not Applicable	-	Not Applicable -
ASP (By:)			
BHANSA	Not applicable	-	Not Applicable -

ENV02	**Airport Collaborative Environmental Management** ***Applicability and timescale: Local***	**0%**	**Not yet planned**
LQSA - Sarajevo International Airport			
Not yet planned			-
ASP (By:)			
BHANSA	Not yet planned	-	Not yet planned -
APO (By:)			
SARAJEVO Airport	Not yet planned	-	Not yet planned -

ENV03	**Continuous Climb Operations (CCO)** ***Applicability and timescale: Local***	**0%**	**Not yet planned**
LQSA - Sarajevo International Airport			
Not Applicable			-
ASP (By:)			
BHANSA	not applicable	-	Not yet planned -

APO (By:)				
SARAJEVO Airport	Not yet planned	-		Not yet planned -

NAV11.1	Implement precision approach procedures using GBAS CAT II based on GAST C *Applicability and timescale: Local*	%	Not yet planned
-			
Not yet planned			-
REG (By:)			
BHDCA	Not yet planned	-	Not yet planned -
ASP (By:)			
BHANSA	Not yet planned	-	Not yet planned -

SAF10.1	Implement measures to reduce the risk to aircraft operations caused by airspace infringements *Applicability and timescale: Local*	%	Not yet planned
-			
Not yet planned			-
REG (By:)			
BHDCA	Not yet planned	-	Not yet planned -
ASP (By:)			
BHANSA	not yet planned	-	Not yet planned -
AIS (By:)			
BHANSA	Not Yet Planned	-	Not yet planned -

SAF11.1	Improve Runway Safety by Preventing Runway Excursions *Applicability and timescale: Local*	%	Planned
-			
Planned			31/12/2024
REG (By:)			
BHDCA	Planned	-	Planned 31/12/2024
ASP (By:)			
BHANSA	Planned	-	Planned 31/12/2024
APO (By:)			
SARAJEVO Airport	Almost all GAPPRE RECOMMENDATIONS TO AERODROME OPERATORS, are implemented. Two of them will be implemented in accordance with Implementation date. GAPRRE questionnaire is fulfilled.	-	Planned 31/12/2024

6. Annexes

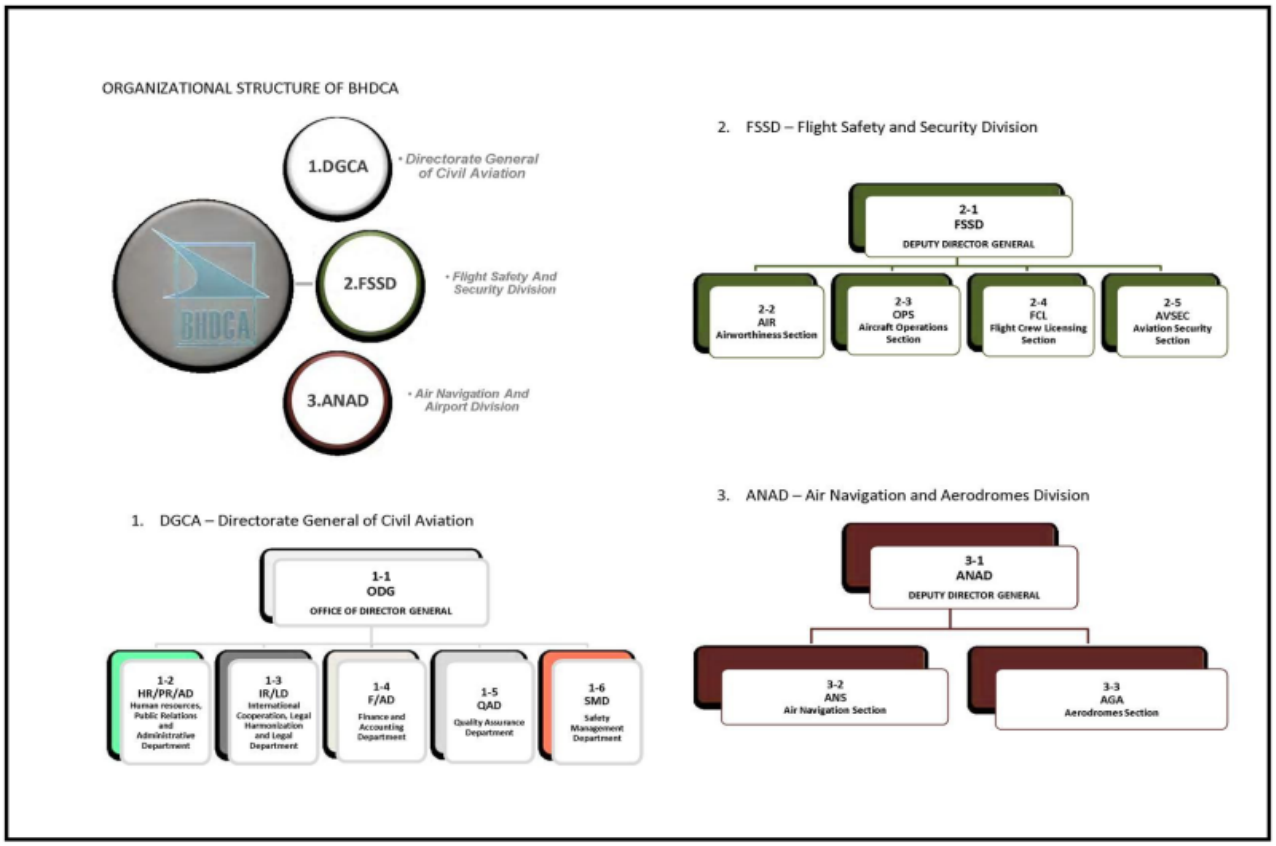
A. Specialists involved in the ATM implementation reporting for Bosnia and Herzegovina

LSSIP Co-ordination

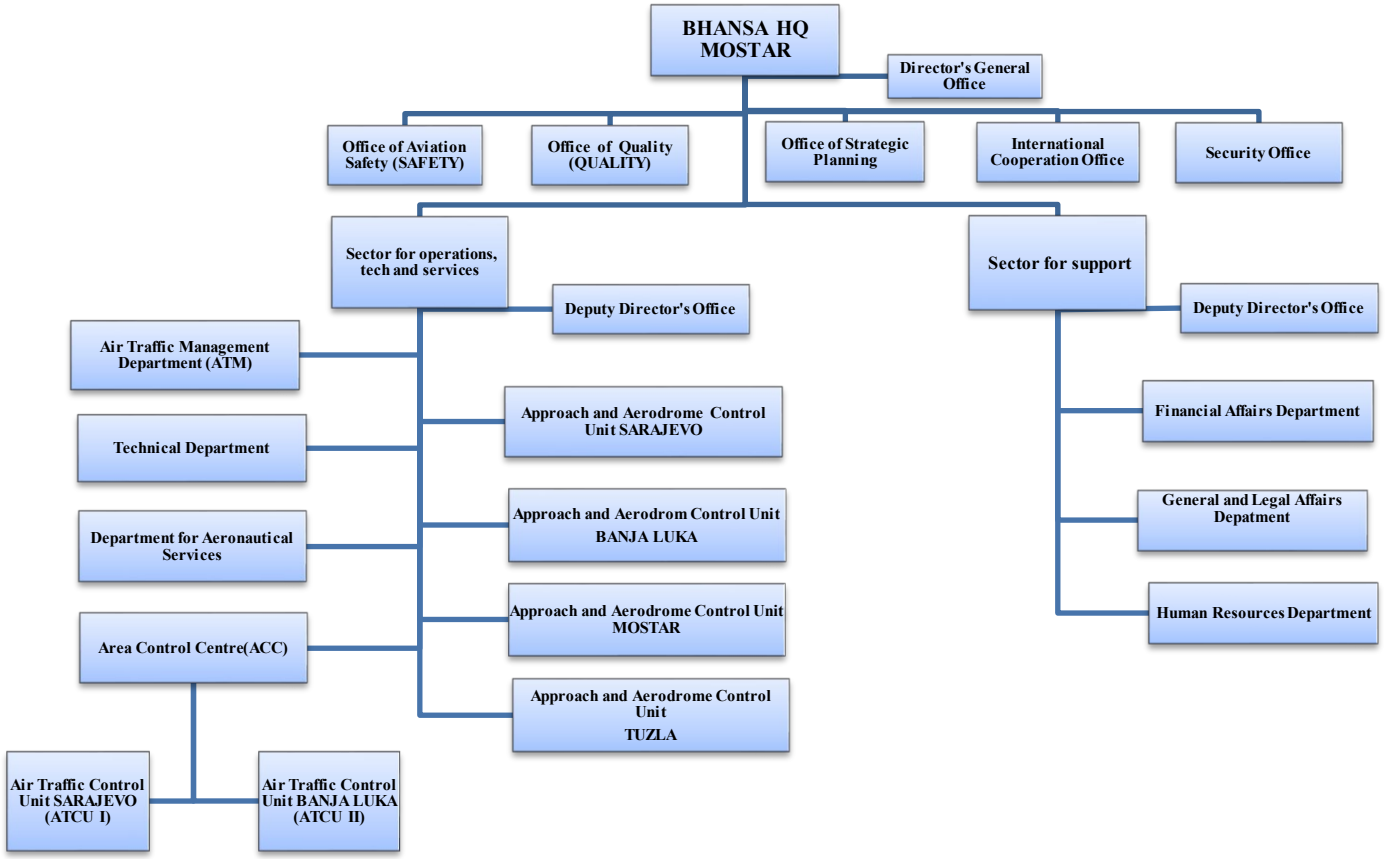
LSSIP Focal Points	Organisation	Name
LSSIP National Focal Point	BHDCA	Mrs. Martina Ćorić Mrs. Sara Sudar
LSSIP Focal Point for NSA/CAA	-	
LSSIP Focal Point for ANSP	-	Mr. Zoran Blažević Mr. Vlado Jurić Mr. Darijo Stojkić Mrs. Sanela Zekić Mr. Slavenko Buha Mrs. Selma Hajdarević Mr. Dalibor Ninković Mr. Aleksandar Škondrić Mr. Mirsad Hadžialić
LSSIP Focal Point for Airport	Airport Sarajevo	Mr. Nermin Zijadić Mr. Vahidin Zukanović
LSSIP Focal Point for Military	Ministry of Defense of Bosnia and Herzegovina	Mr. Slaven Hrkać Mr. Vladimir Grujić

Other Focal Points	Organisation	Name
Focal Point for SUR	Bosnia-Herzegovina	Mr. Vedad Vražalica

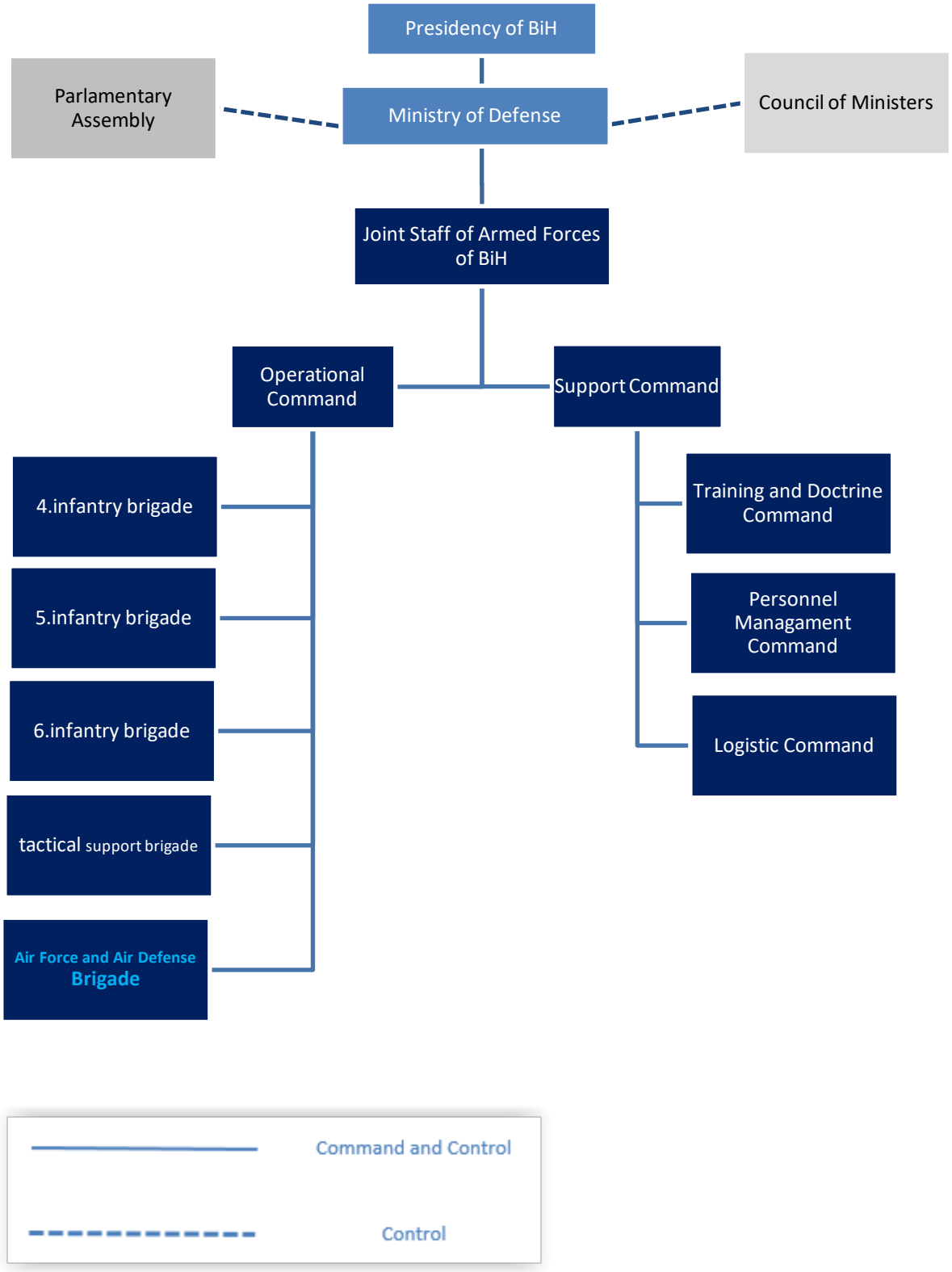
B. National stakeholders organisation charts



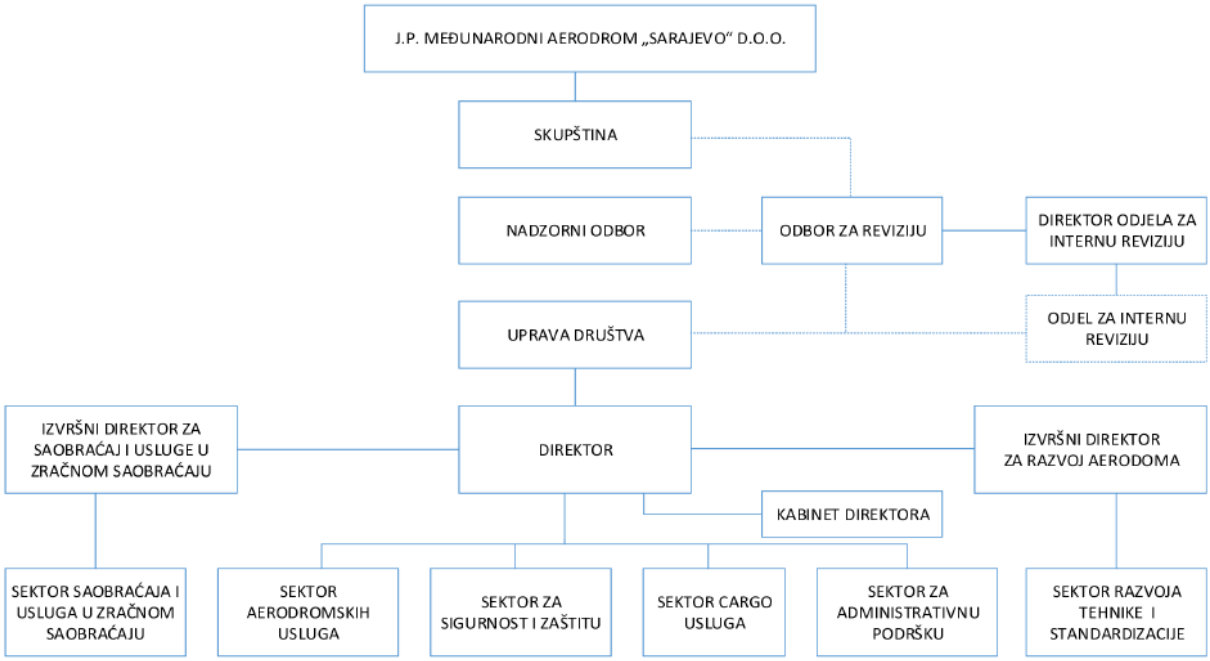
BHANSA Organisation Chart:



Defense organization in BiH



International Airport Sarajevo



C. Implementation Objectives' links with other plans

The table below (extracted from the MPL3 Plan 2022) 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.

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/ *Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
ATC21 – Composite surveillance ADS-B/WAM	#114	-	*CTE-S06, CTE-S05, CTE-S03a, CTE-S03b, CTE-S04a*	ASUR-B0/1 ASUR-B0/2	RMT.0679 RMT.0519	SO8/3 SO8/4	AM-1.17	EAI
COM10.2 – Extended AMHS	-	-	CTE-C06c	COMI-B0/7	-	SO7/4	-	EAI
COM11.1 – Voice over Internet Protocol (VoIP) in En-Route	-	-	*CTE-C05a* *CTE-C05b*	COMI-B2/1	-	SO8/4	AM-1.3	EAI
COM11.2 – Voice over Internet Protocol (VoIP) in Airport/Terminal	-	-	*CTE-C05a* *CTE-C05b*	COMI-B2/1	-	SO8/4	-	EAI
COM13 – Air Traffic Services (ATS) datalink using SatCom Class B	#109	-	POI-0018-COM	COMI-B1/3	-	-	AM-1.16	EAI
ITY-ACID – Aircraft identification	-	-	*GSURV-0101*	-	-	SO8/2	-	EAI
ITY-AGDL – Initial ATC air-ground data link services	-	-	AUO-0301	COMI-B0/4 COMI-B1/2	RMT.0524	SO4/1 SO8/3	AM-1.1	EAI

CNS infrastructure and services

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/ *Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
ITY-AGVCS2 – 8.33 kHz Air-Ground Voice Channel Spacing below FL195	-	-	*CTE-C01a*	-	-	SO8/1	-	EAI
NAV10 – RNP Approach Procedures to instrument RWY	#103	-	AOM-0602 AOM-0604 CTE-N06a CTE-N06b	APTA-B0/1 APTA-B1/1 NAVS-B0/2	RMT.0445 RMT.0643	SO6/5	-	AATS
NAV11.2 – Implement precision approach procedures using GBAS CAT II/III based on GPS L1 and/or GALILEO E1	#55	-	AO-0505-A	NAVS-B1/1	RMT.0682	-	-	HPAO

iN ATM interconnected network

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
AOM13.1 – Harmonise OAT and GAT handling	-	-	AOM-0301 AOM-0303	-	-	SO6/2	-	OANS
AOP11.1 – Initial Airport Operations Plan	#21	2.2.1	AO-0801-A	ACDM-B1/1	-	SO6/2	-	HPAO
AOP11.2 – Extended Airport Operations Plan	#21	2.2.2	AO-0801-A, AO-0802-A, AO-0803, DCB-0310	ACDM-B1/1	-	SO5/2	-	HPAO

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
AOP17 – Provision/integration of DPI to NMOC	#61	-	DCB-0304	NOPS-B0/4	-	-	-	HPAO
COM12 – NewPENS	-	-	*CTE-C06b*	COMI-B1/1	-	SO2/3, SO2/4, SO8/3, SO8/4	-	EAI
FCM03 – Collaborative flight planning	-	-	IS-0102	NOPS-B0/2	-	SO4/3	AM-1.14	OANS
FCM04.2 – Enhanced Short Term ATFCM Measures	#17	4.1.1	DCB-0308	NOPS-B1/1	-	SO4/5	AM-1.11	OANS
FCM06.1 – Automated Support for Traffic Complexity Assessment and Flight Planning interfaces	#19 PJ.18-02c	4.3.1	CM-0101 CM-0103-A IS-0102	NOPS-B0/2 NOPS-B1/4	-	SO4/3 SO4/5	AM-1.13	OANS
FCM10 – Interactive rolling NOP	#18 #20	4.2.1	DCB-0102	NOPS-B1/2 NOPS-B1/9	-	SO2/2, SO4/2, SO4/5	AM-1.9 AM-1.12	OANS
FCM11.1 – Initial AOP/NOP Information Sharing	#20 #21	4.2.2	DCB-0103-A AO-0801-A	NOPS-B0/4	-	SO4/4, SO4/5, SO5/2	AM-1.12	OANS
FCM11.2 – AOP/NOP integration	#18 #20 #21	4.4.1	AO-0801–A, AO-0802–A, AO-0803, DCB-0310, DCB-0103-A, DCB-0208	NOPS-B1/3	-	SO4/4, SO4/5, SO5/2	AM-1.12	OANS
INF10.2 – Stakeholders' SWIM PKI and cyber security	#46	5.2.1	IS-0901-A	SWIM-B2/3	RMT.0720	SO2/4	AM-1.5	EAI
INF10.3 – Aeronautical Information Exchange - Airspace structure service	#46	5.3.1	IS-0901-A	-	-	SO2/4	AM-1.5	EAI

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
INF10.4 – Aeronautical Information Exchange - Airspace availability service	#46	5.3.1	IS-0901-A	-	-	SO2/4	AM-1.5	EAI
INF10.5 – Aeronautical Information Exchange - Airspace Reservation (ARES) service	#46	5.3.1	IS-0901-A	-	-	SO2/4	AM-1.5	EAI
INF10.6 – Aeronautical Information Exchange - Digital NOTAM service	#34 #46	5.3.1	IS-0901-A IS-0205	-	-	SO2/4	AM-1.5	EAI
INF10.7 – Aeronautical Information Exchange - Aerodrome Mapping information exchange service	#34 #46	5.3.1	IS-0901-A IS-0205	-	-	SO2/4	AM-1.5	EAI
INF10.8 – Aeronautical Information Exchange - Aeronautical Information Features service	#34 #46	5.3.1	IS-0901-A IS-0205	-	-	SO2/4	AM-1.5	EAI
INF10.9 – Meteorological Information Exchange - Volcanic ash concentration service	#34 #35 #46	5.4.1	IS-0901-A IS-0205 MET-0101	-	-	SO2/4	AM-1.5	EAI
INF10.10 – Meteorological Information Exchange - Aerodrome Meteorological information Service	#34 #35 #46	5.4.1	IS-0901-A IS-0205 MET-0101	-	-	SO2/4	AM-1.5	EAI

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
INF10.11 – Meteorological Information Exchange - En-Route and Approach Meteorological information service	#34 #35 #46	5.4.1	IS-0901-A IS-0205 MET-0101	-	-	SO2/4	AM-1.5	EAI
INF10.12 – Meteorological Information Exchange - Network Manager Meteorological Information	#34 #35 #46	5.4.1	IS-0901-A IS-0205 MET-0101	-	-	SO2/4	AM-1.5	EAI
INF10.13 – Cooperative Network Information Exchange - ATFCM Tactical Updates Service	#46	5.5.1	IS-0901-A	-	-	SO2/4	AM-1.5	EAI
INF10.14 – Cooperative Network Information Exchange - Flight Management Service	#46	5.5.1	IS-0901-A	-	-	SO2/4 SO5/2	AM-1.5	EAI
INF10.15 – Cooperative Network Information Exchange - Measures Service	#46	5.5.1	IS-0901-A	-	-	SO2/4 SO4/5	AM-1.5	EAI
INF10.16 – Cooperative Network Information Exchange - Short Term ATFCM Measures services	#46	5.5.1	IS-0901-A	-	-	SO2/4 SO4/5	AM-1.5	EAI
INF10.17 – Cooperative Network Information Exchange - Counts service	#46	5.5.1	IS-0901-A	-	-	SO2/4	AM-1.5	EAI

iN ATM interconnected network

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
INF10.18 – Flight Information Exchange -Filing Service	#46	5.6.1	AUO-0207	FICE-B2/2	-	SO2/4	AM-1.5	EAI
INF10.19 – Flight Information Exchange - Flight Data Request Service	#46	5.6.1	AUO-0207	FICE-B2/4	-	SO2/4	AM-1.5	EAI
INF10.20 – Flight Information Exchange - Notification Service	#46	5.6.1	AUO-0207	FICE-B2/5	-	SO2/4	AM-1.5	EAI
INF10.21 – Flight Information Exchange - Publication Service	#46	5.6.1	AUO-0207	FICE-B2/6	-	SO2/4	AM-1.5	EAI
INF10.22 – Flight Information Exchange - Trial Service	#46	5.6.1	AUO-0219	FICE-B2/3	-	SO2/4	AM-1.5	EAI
INF10.23 – Flight Information Exchange - Extended AMAN SWIM Service	#46	5.6.1	AUO-0207	DAIM-B2/1 SWIM-B3/1	-	SO2/4	AM-1.5	EAI

dS Digital AIM and MET services

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*EnablerS*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
INF07 – Electronic Terrain and Obstacle Data (e-TOD)	-	-	*AIMS-16*	DAIM-B1/3 DAIM-B1/4	RMT.0703 RMT.0722	SO2/5	-	EAI

dS Digital AIM and MET services

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*EnablerS*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
INF11.1 – Enhanced Ground Weather Management System (GWMS) as local 4DWxCube	PJ.18-04b-01	-	POI-0044-MET	-	-	-	-	-
INF11.2 – Cb-global capability and service	PJ.18-04b-02	-	POI-0048-MET	-	-	-	-	-

ATp Airport and TMA performance

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
AOP04.1 – A-SMGCS Surveillance Service (former ICAO Level 1)	#70 #110	-	AO-0201 AO-0201-A POI-0071-SUR	SURF-B0/2	MST.0029	SO6/6	-	HPAO
AOP04.2 – A-SMGCS RMCA (former ICAO Level 2)	-	-	AO-0102	SURF-B0/3	MST.0029	SO6/6	-	HPAO
AOP05 – Airport CDM	-	-	AO-0501, AO-0601, AO-0602, AO-0603, TS-0201	ACDM-B0/1 ACDM-B0/2 NOPS-B0/4	-	SO6/4	-	HPAO
AOP10 – Time Based Separation	#64	-	AO-0303	WAKE-B2/7	-	SO6/5	-	HPAO
AOP12.1 – Airport Safety Nets	#02	2.3.1	AO-0104-A	SURF-B1/3	MST.0029	SP6/6	-	HPAO

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
AOP13 – Automated assistance to Controller for Surface Movement planning and routing	#22 #53	-	AO-0205 TS-0202	SURF-B1/4	MST.0029	SO6/6	-	HPAO
AOP15 – Safety Nets for vehicle drivers	#04	-	AO-0105 AO-0204	SURF-B2/2	MST.0029	-	-	HPAO
AOP16 – Guidance assistance through airfield lighting	#47	-	AO-0222-A	SURF-B1/1	MST.0029	-	-	HPAO
AOP18 – Runway Status Lights	#01	-	AO-0209	SURF-B2/2, SURF-B2/3-	MST.0029	-	-	HPAO
AOP19 – Departure Management Synchronised with Pre-departure sequencing	#53 #106	2.1.1	AO-0602 TS-0201	RSEQ-B0/2	-		-	HPAO
AOP20 – Wake Turbulence Separations for Departures based on Static Aircraft Characteristics (S-PWS-D)	PJ.02-01-06	-	AO-0323		RMT.0476		-	HPAO
AOP21 – Wake Turbulence Separations for Arrivals based on Static Aircraft Characteristics (S-PWS-A)	PJ.02-01-04	-	AO-0306		RMT.0476		-	HPAO
AOP22 – Minimum pair separations based on SRP	PJ.02-03	-	AO-0309	-	-		-	HPAO
AOP23 – Integrated runway sequence for full traffic	PJ.02-08-01	-	TS-0301	RSEQ-B2/1	-		-	HPAO

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
optimization on single and multiple runway airports								
AOP24 – Optimised use of runway configuration for multiple runway airports	PJ.02-08-02	-	TS-0313		-		-	HPAO
AOP25 – De-icing Management Tool	#116	-	POI-0070-AO	-	-	-	-	HPAO
AOP26 – Reduced separation based on local Runway Occupancy Time (ROT) characterisation	PJ.02-08-03	-	AO-0337	-	-	-	-	-
ATC07.1 – Arrival management tools	-	-	TS-0102	RSEQ-B0/1	-	SO4/1	-	AATS
ATC19 – Enhanced AMAN-DMAN integration	#54	1.2.1	TS-0308	RSEQ-B2/1	-	SO6/5 SO4/1	-	AATS
ATC26 – Point Merge in complex TMA	#107	-	AOM-0601	RSEQ-B0/3	-	-	-	AATS
ENV01 – Continuous Descent Operations	#11	-	AOM-0701 AOM-0702-A	APTA-B0/4 APTA-B1/4	-	SO6/5	-	AATS
ENV02 – Airport Collaborative Environmental Management	-	-	AO-0703, AO-0705, AO-0706	-	-	-	-	HPAO
ENV03 – Continuous Climb Operations	-	-	AOM-0703	APTA-B0/5 APTA-B1/5	-	SO6/5	-	AATS

ATp Airport and TMA performance

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
NAV03.1 – RNAV1 in TMA Operations	#62	-	AOM-0601 *CTE-N08*	APTA-B0/2	RMT.0445	SO6/5	-	AATS
NAV03.2 – RNP1 in TMA Operations	#09 #51	-	AOM-0603 AOM-0605	APTA-B1/2	RMT.0445	SO6/5	-	AATS
NAV11.1 – GLS CAT II operations using GBAS GAST-C	#119	-	AO-0506	NAVS-B1/1	RMT.0682 RMT.379	-	-	HPAO
SAF11.1 – Improve runway safety by preventing runway excursions	-	-	-	-	-	-	-	HPAO

dA Fully dynamic and optimised airspace

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
AOM19.4 – Management of Pre-defined Airspace Configurations	#31 #66	3.1.2	AOM-0202-A AOM-0206-A CM-0102-A	FRTO-B1/4, NOPS-B1/6	-	SO3/2 SO3/3	AM-1.10 AM-1.8-	OANS
AOM19.5 – ASM and A-FUA	#31 #66	3.1.1	AOM-0202 AOM-0202-A AOM-0206-A		-	SO3/2 SO3/3	AM-1.10 AM-1.8	OANS
AOM21.2 – Initial Free Route Airspace	#32 #33 #66	3.2.1	AOM-0501 AOM-0505 CM-0102-A	FRTO-B1/1	-	SO3/1 SO3/4	AM-1.10 AM-5.1	AATS

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
AOM21.3 – Enhanced Free Route Airspace Operations	#33 PJ.06-01	3.2.2	AOM-0501 AOM-0505	FRTO-B2/3	-	SO3/1 SO3/4	AM-1.6 AM-1.7	AATS
ATC12.1 – MONA, TCT and MTCD	#27 #104 # PJ.10-02a1	3.2.1	CM-0202, CM-0203, CM-0205, CM-0207-A	FRTO-B0/4 FRTO-B1/5	-	SO3/1 SO4/1	AM-1.15 AM-5.1	AATS
ATC15.1 – Initial Extension of AMAN to En-route	-	-	TS-0305	-	-	SO4/1	-	AATS
ATC15.2 – Arrival Management Extended to En-route Airspace	#05	1.1.1	TS-0305-A	RSEQ-B1/1 NOPS-B1/8	-	SO4/1	AM-1.3	AATS
ATC18 – Multi Sector Planning En-route – 1P2T	#63 #118 PJ.10-01a1	-	CM-0301	FRTO-B1/6	-	SO4/1	AM-4.3 AM-5.1	AATS
ITY-FMTP – Apply a common flight message transfer protocol (FMTP)	-	-	*CTE-C06*	-	-	SO8/3	AM-1.3	EAI
SAF10.1 – Implement measures to reduce the risk to aircraft operations caused by airspace infringements	-	-	-	-	SI.2025	-	-	AATS

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
ATC02.8 – Ground based safety nets	-	3.2.1	CM-0801	SNET-B0/2 SNET-B0/3 SNET-B0/4	-	SO4/1	-	AATS
ATC20 – Enhanced STCA with DAP via Mode S EHS	#69	-	CM-0807-A	SNET-B1/1	MST.0030	SO7/2	-	AATS
ATC22 – Initial Air-Ground Trajectory Information Sharing (Airborne Domain)	#115	6.1.1	IS-0303-A	-	RMT.0682	SO4/5	AM-1.2	EAI
ATC23 – Initial Air-Ground Trajectory Information Sharing (Ground Domain)	#115 PJ.18-06b1	6.1.2	IS-0303-A	-	RMT.0682	SO4/5	AM-1.2	EAI
ATC24 – Network Manager Trajectory Information Enhancement	PJ.18-06b1	6.2.1	POI-0011-IS POI-0013-IS	-	RMT.0682	SO4/5	-	EAI
ATC25 – Initial Trajectory Information Sharing ground distribution	#115	6.3.1	IS-0303-A	-	MST.0031		AM-1.2	EAI

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
NAV12 – ATS IFR Routes for Rotorcraft Operations	#113	-	AOM-0810	APTA-B0/6	MST.0031	SO6/5	-	AATS

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
-	-	-	-	-	-	-	-	-

Level 3 Implementation Objective	SESAR Solution	SDP Family	OI Steps/*Enablers*	ICAO ASBUs	EPAS	NSP	AAS TP	KF
AOP14.1 – Remote Tower Services	#12 #13 #52 #71	-	SDM-0201 SDM-0204 SDM-0205	RATS-B1/1	RMT.0624	SO6/5	-	HPAO
AOP14.2 – Multiple Remote Tower Module	PJ.05-02	-	SDM-0207	RATS-B1/1	RMT.0624	SO6/5	-	HPAO

D. SESAR Solutions implemented in a voluntary way[4]

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.

For practical reasons, a facilitated questionnaire using the existing ATM MP L3 / LSSIP methodology is added in the LSSIP tool to capture information on non-committed SESAR solutions.

Bosnia and Herzegovina opted to keep SESAR Solutions questionnaire as confidential.

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

E. Surveillance (SUR) Questionnaire

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.

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** (for new system, replacement/upgrade or decommissioning)	**Expected contribution to the Key Performance[5] Areas**	**Schedule**
Area/Name: Mode S radar **Activity type:** **Relationship with other projects:** **Will these projects lead to the decommissioning of legacy sensors (how many?):** **Objective:** Coverage **Airspace**: ENR and TMA **Service**: ATC	**Type:** Upgrade Mode S SSR **Number of sites**: 1 Mode S SSR **Provider**: BHANSA **Coverage:** TMA SArajevo and part of AoR BHACC	**Capacity:** Maintain capacity during the maintenance activities of Jahorina Mode S MSSR. **Operational-Efficiency:** **Safety:** Installation would improve operation safety. Higher data integrity and flow. Better air traffic situation awareness for inbound flights. **Security:** **Environment:** **RF/Spectrum:** **Cost-Efficiency:** Improve the surveillance performance and continuity.	**Sensor installation date:** 2023 Initial phase **Operational date:** **ADS-B operational integration date (ATCO CWP) where applicable:** **Estimated End of Life:**
Area/Name: Mode S radar **Activity type:** **Relationship with other projects:** **Will these projects lead to the decommissioning of legacy sensors (how many?):** **Objective:** Coverage **Airspace**: ENR and TMA **Service**: ATC	**Type: New Mode S SSR** **Number of sites**: 3 Mode S SSR **Provider**: BHANSA **Coverage:** TMA Mostar, TMA Banja Luka, TMA Tuzla and part of AoR BHACC	**Capacity:** **Operational-Efficiency:** **Safety:** Installation would improve operation safety. Higher data integrity and flow. Better air traffic situation awareness for inbound flights. **Security:** **Environment:** **RF/Spectrum:** **Cost-Efficiency**: Improve the surveillance performance and continuity.	**Sensor installation date:** 2024 **Operational date:** **ADS-B operational integration date (ATCO CWP) where applicable:** **Estimated End of Life:**
ANSP: BHANSA		**Last Modified:** 2023-3-16	**Validation Date:** 2023-3-20

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

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.

Sensor Type		2022	2023	2024	2025	2026	2027
Mode A/C	ENR/TMA						
	ENR only						
	TMA only						
CMB PSR Mode A/C	ENR/TMA						
	ENR only						
	TMA only	1	1				
Mode S	ENR/TMA	1	1	1	1		
	ENR only						
	TMA only						
CMB PSR Mode S	ENR/TMA						
	ENR only						
	TMA only			1	1		
PSR stand alone	ENR/TMA						
	ENR only						
	TMA only						
WAM	Systems/Clusters						
	Sensors (Rx, Tx, Rx/Tx)						
ADS-B receivers (not part of MLAT/WAM)							
Space-based ADS-B							
Surface Movement Radar (SMR)							
Airport MLAT	Systems/Clusters						
	Sensors (Rx, Tx, Rx/Tx)						
ADS-B equipped Vehicles							
ANSP: BHANSA		**Last Modified**: 2023-3-17			**Stabilisation Date**: 2023-3-20		

Surveillance Data Use

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

ADD/DAP data usage

ADD/DAP data item	Usage of DAP/ADD			
	Indicate if and how the data is used by ATCOs: - not used - Displayed for information - Part of operational procedure - Other (please indicate) **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Indicate if and how the data is used by TOOLS:** - Please indicate tools and status per tool (e.g. operational, evaluation, other) **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Indicate if and how the data is used by the Tracker:** - Operational usage - Evaluation - Other **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Other**
Selected Altitude			Not used	
Barometric pressure setting			Operational usage, Mode S, 2014	
Roll angle			Operational usage, Mode S, 2014	
True track angle			Operational usage, Mode S, 2014	
Ground speed			Operational usage, Mode S, 2014	
Track angle rate			Operational usage, Mode S, 2014	
Magnetic heading			Operational usage, Mode S, 2014	
Indicated airspeed			Operational usage, Mode S, 2014	
Mach No			Operational usage, Mode S, 2014	
Vertical rate (Baro, Inertial)			Operational usage, Mode S, 2014	

ADD/DAP data item	Usage of DAP/ADD			
	Indicate if and how the data is used by ATCOs: - not used - Displayed for information - Part of operational procedure - Other (please indicate) **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Indicate if and how the data is used by TOOLS:** - Please indicate tools and status per tool (e.g. operational, evaluation, other) **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Indicate if and how the data is used by the Tracker:** - Operational usage - Evaluation - Other **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Other**
True Airspeed			Operational usage, Mode S, 2014	
Other data items				
ANSP:			**Last Modified**: 2023-3-20	**Stabilisation Date**: 2023-3-20

ADS-B integration

ADS-B use case and integration date	Operational date or planned ops date	Sites
ACC ATC integration ENR		
ACC ATC integration TMA		
ATC integration TWR CTR/TMA		
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		
Other:		
ANSP:	**Last Modified**:	**Stabilisation Date**: 2023-3-20

F. EAPAIRR and GAPPRE Questionnaire

- **European Action Plan for Airspace Infringement Risk Reduction**

This section aims at gathering data/information in order to monitor, and therefore try reducing the risk of mid-air collision caused by infringement. Tackling airspace infringements is a high priority for many European ANSPs, based on the data from the ECR (European Central Repository for Aviation accident and Incident Reports), and retrieved by EASA.

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
Airspace Design (AD)						
AD1	The design principles should encompass the safety, environmental and operational criteria, and the strategic policy objectives that the change sponsor seeks to achieve in developing the airspace change proposal.	Design principles must be set through a two-way process and involve effective engagement. The change proposal should include the maintenance of a high level of safety and avoid overflying densely populated areas where possible. The proposal should also include other design principles that reflect local considerations or impacts on other airspace users so that they are considered as part of the design process. The development of these design principles can be undertaken by the change sponsor without additional engagement. All design options will need to demonstrate how they meet (or don't meet) the design principles. The design principles should consider U-Space and UAS operations.				
AD2	Any change must be transparent and involve stakeholder engagement throughout the entire process.	Those potentially affected by a change in airspace design should feel confident that their voice has a formal place in the process if trust is not to be eroded. Openness also allows change sponsors to see more clearly what is expected from them. The change should include assessing the impact of airspace changes on certified navigation systems and apps.				
AD3	Maintain and enhance safety by design	States should perform an assessment of the impact of airspace complexity on the workload for all affected airspace users and publish the results of an agreed objective				

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		measurement either for each airspace change or at regular intervals.				
AD4	Where possible, design airspace boundaries with ground features that are not susceptible to significant change, and do not delimit airspace by national borders	Features such as roads, railways and major topographical features aid navigation and situational awareness. This is less true of towns, cities, and industrial parks as they grow with economic expansion.				
AD5	Where new airspace is established provision should be made for ATS outside of controlled airspace to facilitate airspace infringement prevention. See also recommendation ANSP8	ATS should provide airspace infringement warning and navigational assistance.				
AD6	The design should be as simple as possible to avoid confusion or pilot overload in interpreting the airspace.	Complex airspace with multiple CTAs or differing levels and complex shapes are inherent airspace infringement hot spots. The design should consider adjacent controlled airspaces to avoid creating narrow corridors that increase funneling and risk of airspace infringement and mid-air collision.				
AD7	Base levels of CTA should be as high as possible to allow containment of SIDs and STARs but also elevate lower limits of TMAs where possible.	Enable the retention of as much uncontrolled airspace as possible.				
AD8	National authorities should play the	While airspace infringement is an important operational risk across much of Europe, the nature and scale of the problem				

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
	leading role in establishing and promoting local implementation priorities and actions in consultation with airspace users and service provider organisations.	varies between States. There are several key factors which will shape the local airspace infringement risk reduction strategies. These will determine the most appropriate and effective actions to be taken by individual States. These are: the complexity of the airspace structure; the scale of military flying activity; the scale and maturity of both commercial and general aviation sectors; the scope and nature of air traffic service provision; and the State's regulatory and legislative frameworks. Therefore, the number of Action Plan recommendations that can be implemented is likely to vary from State to State.				
AD9	Review the controlled airspace structure and simplify boundaries where possible.	A safety assessment must be made for all changes at the functional system level with regard to the Airspace Structure. This action is particularly relevant to areas of dense VFR traffic. It should aim to simplify, where possible, the numerous boundary level changes of TMAs and CTRs that can contribute to vertical navigation error. It should also aim to ensure the protection of the IFR traffic established on the extended runway centreline and within 15 NM from the runway threshold from nearby uncontrolled VFR traffic. This would reduce the number of operationally unnecessary RAs generated by TCAS. Alignment of the <FL195 airspace structure, boundaries and of ATS routes for VFR flights (hereinafter referred to VFR routes) with prominent ground features and landmarks should be sought to make them more easily identifiable by pilots during flights. The review should be informed by identification of hot spots based on the analysis of incident reports (e.g., airspace infringements) or other appropriate methods. Automated tools may also be used to plot actual flight tracks in a particular area onto the existing airspace structures in order to identify potential inconsistencies in the design of protected (controlled) airspaces. Such methods will also facilitate the identification of under-utilised portions of controlled or restricted airspaces that may be released for use by GA VFR flights. This action concerns ANSPs that have been delegated the responsibility of developing and implementing changes to the airspace organisation subject to the approval of the National authorities.				

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
AD10	Harmonise airspace classification below FL195 in line with the strategic airspace design principles.	An appropriate strategic design of the airspace is crucial in permitting the ATM System to provide the right services, at the right time and in the right places decreasing routine tasks and the requirement for tactical intervention. Harmonisation of airspace classification below FL195 should be based on the ICAO-defined airspace classes. It should aim for the establishment of common vertical limits, as far as practicable. It should also include harmonised application of associated rules, procedures, and air traffic services. It is highly recommended deploying airspace structures that provide a greater degree of strategic de-confliction with particular consideration of cross-border operations. The EUROCONTROL Agency should support and facilitate the harmonisation efforts of the Member States within the framework of the existing EATM working arrangements (NETOPS and sub-groups) providing the required expertise, and in line with the approved Strategic Guidance in support of the execution of the European ATM Master Plan and SES regulations.				
AD11	Eliminate class A from TMAs and airspace below FL195 wherever and whenever possible.	This increases the availability of airspace for General Aviation while providing a more tailored approach to retaining the necessary controlled airspace for commercial flights to operate.				
AD12	Resize CTRs and TMAs on a case-by-case basis, especially at lower levels.	This increases the availability of airspace for General Aviation while providing a more tailored approach to retaining the necessary controlled airspace for commercial flights to operate.				
AD13	Create VFR routes in the CTRs if they are deemed beneficial in accordance with the needs of all stakeholders in this area.	This may lead to a more predictable traffic behaviour for both pilots and controllers, with routes between easily identifiable points.				
AD14	Resize special activities airspace to limit them to the minimum required	This increases the availability of airspace for General Aviation and reduces the frequency of 'technical' airspace infringements, i.e., those 'infringements' where the airspace is notified as restricted but eventually no activity is taking				

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
	and restrict their activation to what is strictly necessary. Eliminate those areas/zones that are no longer needed.	place in it. These concerns: Prohibited, Restricted and Danger Areas Military Exercise Area, Military Training Area, Air Defence Identification Zone (ADIZ), Cross-Border Area (CBA), Temporary Reserved Area (TRA), Temporary Segregated Area (TSA) Flight plan Buffer Zone (FBZ)				
ANSPs						
ANSP1	Ensure ATCO and FISO communication skills and discipline is included in FIS training and licensing/certification. See also recommendation AU8	This action reinforces the objectives and provisions of the Action Plan for Air Ground Communications, focusing on the aspects that are of particular importance in the communication exchange between ATS units and VFR flights. ATS staff should be trained to: Strictly apply the readback/hearback procedure; Actively seek confirmation in case of doubt; Use unambiguous call-signs - full call-sign or call-sign coupled with type of aircraft; Use published reference points in ATS messages to pilots as far as possible; Use simple ATC clearances and instructions; Use more concise transmissions, if necessary broken into shorter segments; Use reduced rate of speech and better articulation when talking to VFR pilots; Issue pre-warning of instructions to be passed; Provide FIS in English language; Acquire adequate knowledge of and apply communication failure procedures as required. Improve and harmonise FISO training curriculum. The training curriculum should be improved to adequately match the level of service to be provided. FIC staff should receive dedicated training to improve their awareness and understanding of VFR flights' needs, specificities, and light aircraft performances. Best practices already exist (e.g., in Germany) to deliver emergency situation training to FIC staff and VFR pilots in a coordinated manner. A sufficient number of FIC staff should be made available to support the provision of enhanced FIS. A number of ATS providers have already implemented dedicated training programmes for staff that become redundant or underutilised due to the	ATS Units	Completed	01/01/2014	

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		increasing automation of ATS provision (e.g., implementation of OLDI). See also 6.20 and 6.23 above. Add familiarization basic training for: ATCO and FISO in training meetings; for Pilots at ATC/FIS Centres.				
ANSP2	Implement a properly tuned Area Proximity Warning function.	The objective is to implement an automated safety net function that should systematically alert controllers of airspace infringements, i.e., of unauthorised entries into controlled and restricted airspaces. Implementation decision should be based on positive cost-benefit-analysis and safety assessment. Area Proximity Warning (APW) is a ground-based safety net intended to warn the controller of unauthorised penetration into an airspace volume by generating, in a timely manner, an alert of a potential or actual infringement. Use APW Safety net data to highlight "hotspots" where potential or actual airspace infringements have occurred. This can in turn be used to focus work on airspace infringement causes and mitigations This can also be used for the investigation of the causes of the potential airspace infringements and later for the mitigations. It is recommended that a survey is undertaken to determine the relevant implementation of this function and its effectiveness.	BH ACC/ATS Unit Sarajevo	Completed	05/12/2019	
ANSP3	Establish a platform to discuss procedures, incidents and hotspots between aerodromes, local ATS units and flying clubs. See also recommendation AU7.	This action aims to establish standard coordination procedures between closely located ATS units, military, and user sites. The implementation of such procedures will reduce the volume of routine coordination, and thus controller and pilot workload. The FUA concept implementation work should also take account of the specific needs of the GA VFR flights with regard to the timely dissemination of information about the activation/deactivation of reserved airspaces (including those for glider activity). Implementation of (direct) communication lines or means between local ATS units, military units and GA airports/airfields should be considered in this respect. The implementation of the above referred coordination procedures, which would enhance the FUA procedures in <FL195 airspace at local level, should be preceded by careful safety assessment Establish Local Airspace Infringement Teams (LAITs) to be	ATS Units	Completed	01/01/2014	

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		run by the airspace owner. Participants should be included from ANSP's, airspace users (GA, CA and MA), local airports and regulators. Provide more general information on hotspots and ways of communication.				
ANSP4	The ANSP & Regulator should establish a procedure to provide feedback on individual incidents to the 'Airspace Infringer'.	Set up a process to allow direct access to individual pilots to acquire the relevant information immediately after an incident. Be aware that information provided «right after an incident» may not be sufficiently considered. It is useful to have information as soon as possible in order to avoid repeated mistakes if the infringer continues operating. However, all parties should assess whether the completeness of the available information might risk cancelling out the advantages brought by immediate access to the pilot. This direct process should respect Just Culture principles to avoid any negative consequences e.g., TXPD off. Anonymous ways of providing the relevant safety information could be considered.	Safety Department	Ongoing	31/12/2025	
ANSP5	Enhance and harmonise FIS provision to VFR flights	Harmonisation of FIS provided to VFR flights should be based on European IRs/AMCs/GMs, ICAO SARPs and existing best practices. Examples of best practices are thus the Low Airspace Radar Service provided in UK airspace and the radar information services provided in German airspace. Radar-derived information available at ATS units should be used to enhance the information passed to pilots. It should include, as appropriate, navigational assistance, coordination of controlled airspace entry/crossing clearance, passing traffic information and information about restricted airspace activation/deactivation and concerned traffic, as well as provision of other aeronautical information and information about potentially hazardous conditions. The service could include provision of warnings to pilots of any unfavourable factors including airspace infringement and traffic warnings. FIS "level" could be raised to enable proactive prevention of potential conflict situations. The scope of this action should include the harmonisation of services provided by civil and military FIS provider organisations. Provision of FIS across Europe is not consistent. There are good reasons for different levels of service	FIS	Planned	31/12/2025	

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		provision under FIS. Level of service is a decision that rests with the state. As long as the service meets the minimum required by the state then the state is deemed compliant. At the moment there are no ongoing initiatives to harmonise FIS at the European level. EASA is waiting for the implementation of Part ATS and will review this later to see if any further action is needed. The principles and fundamentals of provision of FIS are established in Commission Implementing Regulation No. 923/2012. The upcoming PART-ATS which will be included in Commission Implementing Regulation 2017/373, will further detail the specific technical requirements for FIS and provide harmonization to the suitable extent. Based on the implementation feedback, consideration for further refinement of existing FIS provision could be undertaken.				
ANSP6	Review the controlled airspace structure and simplify boundaries where possible	This action is particularly relevant to areas of dense VFR traffic. It should aim to simplify, where possible, the numerous boundary level changes of TMAs and CTRs that can contribute to vertical navigation error. It should also aim to ensure the reliable protection of the IFR traffic established on the extended runway centreline and within 15 NM from the runway threshold from the nearby VFR traffic. This would reduce the number of operationally unnecessary RAs generated by TCAS. Alignment of <FL195 airspace structure boundaries and of VFR routes (corridors) with prominent ground features and landmarks should be sought to make them more easily identifiable by pilots during flights. The review should be informed by identification of hot spots based on the analysis of incident reports (e.g. airspace infringements) or other appropriate methods. Automated tools may also be used to plot actual flight tracks in a particular area onto the existing airspace structures in order to identify potential inconsistencies in the design of protected (controlled) airspaces. Such methods will also facilitate the identification of underutilised portions of controlled or restricted airspaces that may be released for use by GA VFR flights. This action concerns ANSPs that have been delegated the responsibility of developing and implementing changes to the airspace organisation subject to the approval of the National		Not Applicable		

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		authorities. Introduce, where necessary, standard VFR entry, exit and crossing procedures and/or routes in busy controlled airspaces. Meet with relevant stakeholders for review of proposals, e.g., Airlines, ANSP's, GA, etc. Add the promotion of implementing VFR routes/corridors in controlled airspace – if they are deemed beneficial – where simplification is not possible.				
ANSP7	Facilitate the exchange of information and operational experience between ATCOs/FISOs and pilots at local level.	"Open doors days" at ATS units and familiarisation visits by ATS staff to flying clubs and military sites should improve the understanding of each other's operational needs, capabilities, and concerns. ATS staff will improve their awareness of single-pilot aircraft operation (pilot workload, limits, priorities, etc.) and mission/training requirements (for military). Pilots will improve their knowledge of controllers' tasks, ways of working and the assistance that may be provided to them by ATS. Other approaches that could be adopted are dedicated safety seminars with the participation of all airspace user types, service provider organisations and regulatory authorities, or periodic safety analyses (e.g., bi-annual) of the common use of airspace. Pilot associations and flying clubs could play a role in improving the interface with ATC. Knowledge exchange programmes should include pilots with different experience from the various type of operations, e.g., pilots of light aircraft, gliders, helicopters, etc.	ATS Units	Completed	01/01/2014	
ANSP8	Ensure adequate Radio and Surveillance data coverage in the airspace where FIS is provided. See also recommendation AD5	Review and improve, if necessary, the low-level radio coverage in particular around CTRs/TMAs and of airspaces containing high density VFR routes and choke points. Some receiver/transmitter sites, built for IFR traffic, may not be appropriate for FIS provision due to the terrain. Subject to availability, the number of ATS frequencies for the provision of FIS in busy areas may need to be reviewed and increased to ensure the required quality of service provision and better controlled airspace protection. There are new and increasing options available in non-radar surveillance available, e.g. Non-cooperative Radar Air Target Identification radar detection, ADS-B, multi-static primary, RadNet etc.		Not yet planned		

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
ANSP9	For VFR traffic in uncontrolled airspace, transfer services from ATC sectors to dedicated FIS positions at ACCs, Mil centres or aerodromes.	The objective is to ensure provision of FIS from dedicated positions that will not reduce the level of service to VFR flights when there is a high level of IFR traffic in the airspace assigned to the ATC sector(s). Procedures may be established for the delegation of services to VFR flights in class E airspace from the control sectors to FIC, if appropriate and depending on the specific operational environment and regulatory framework. The aim should always be to have a dedicated FIS position at an ACC ideally with a Surveillance display, including offshore services.		Not yet planned		
ANSP10	Include a dedicated and harmonised VFR services training module in ATCO/FISO training curriculum.	The objective is to ensure that ATS staff: Are aware of the different levels of training and experience of PPL holders, military, and airline pilots: • Have improved knowledge of light aircraft, ultra-light, gliders and balloons and their performance characteristics, which will ensure correct understanding and communication with GA pilots. (ATS/FIC controllers should be trained to ask, not to assume). • Are familiar with the cockpit workload of VFR flights (mostly single-pilot operated aircraft) in the various conditions and flight phases. • Are aware of the fact that a VFR GA flight might not be able to follow the clearance due to the need to stay in VMC. Inclusion of dedicated limited training in VFR flying may be considered. It will improve ATCO/FISO understanding of VFR flying	ATS Units	Completed	01/01/2014	
ANSP11	Optimise SSR code assignment procedures to make best use of transponders' MODE-S, MODE A/C data and other surveillance methods, e.g., ADS-B, etc.	Better utilisation of SSR codes can assist in the identification of traffic in congested airspace. Existing best practices should be applied as widely as possible. For example, a "FIR or AC lost" SSR code applied by FIS units to aircraft when pilots are unsure of their position draws attention to the aircraft and its predicament without multiple communications taking place across sectors. MODE-S data, and ADS-B are all useful tools for reducing the risk of airspace (and even separation) infringements by increasing the controller's ability to monitor and anticipate aircraft intentions. Implementing Frequency Monitoring SSR codes would identify that the aircraft is listening on their frequency		Not yet planned		

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		should the ATCO/FISO wish to call them. It is specifically valuable for aircraft operating outside of a busy CTR. Other examples are: implementation of mandatory transponder areas or zones (e.g., at and above a certain altitude or flight level); SSR codes and frequency coupling; GA single event codes; dedicated codes for VFR routes etc.				
ANSP12	Improve tactical coordination procedures between adjacent civil/military control units.	Improved civil - military coordination (ASM level 3) will enable: The provision of up-to-date, correct information to all flights about current airspace restrictions and their use; Timely action by the controllers/officers (in the control units concerned) in the case of imminent or actual infringement of controlled or restricted airspace to reduce the severity of the possible consequences. Implementation of this action should be considered within the scope of efforts for further enhancement of the FUA concept.	ATS Units	Completed	01/01/2018	
ANSP13	Early provision of weather data to assist GA pilots in avoiding adverse weather in accordance with SERA.9005.	Additional navigation support should be provided to VFR flights in compliance with ICAO Doc 4444 PANS-ATM, section 15.4.1 “Strayed VFR flights and VFR flights encountering adverse meteorological conditions” in order to help pilots avoid flying into meteorological conditions not conforming with the required minima Technology now allows for data uplink with weather information directly to the aircraft, although it should be noted that this kind of ADS-B is not yet mandated in Europe. The requirement to provide relevant weather information as part of the FIS is already included in SERA.9005, without specifying the means of transmission. An EASA Best Intervention Strategy to promote existing methods to facilitate the availability of weather information to pilots (CA and GA) in flight is being developed and will be submitted to stakeholders for consultation.	ATS Units/MET	Ongoing	31/12/2025	
ANSP14	Promote the use of SSR and/or radio mandatory airspace in the vicinity of busy and/or complex controlled airspace.	The objective of this action is to ensure the protection of high-density controlled airspaces, like busy TMAs and CTRs. Implementation decisions should be taken following analysis of safety data and records. It should be noted that establishing mandatory R/T buffer zone may not always be possible. Indeed, the feasibility of implementing such buffer airspace depends on the typology of adjacent airspace (continuous controlled airspace, military airspace, etc.) and		Not yet planned		

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		relevant consultation with other stakeholders and airspace users. Implementation of mandatory R/T buffer zones should also include a review of existing «buffer airspace» at the TMA or CTR boundaries and corresponding optimisation of such airspace to the necessary minimum due to the additional protection provided by the R/T buffer zone. A possible implementation may include tracking all flights operating within a certain range of the controlled airspace in question. Depending on the operational need a minimum altitude/level above which the requirement will be applicable may be defined. Since radio communication is not required in class G airspace, an alternative means of reducing the probability of severe airspace infringement incidents occurring is to require GA flights to maintain listening watch on 121.5 MHz, except when in contact with an ATS unit. This would help ATC contact an airspace infringing aircraft early enough to prevent the infringement from evolving into high-risk incident. A potential solution for a buffer is the use of Transponder Mandatory Zones around/below Controlled Airspace, with a co-located Radio Mandatory Zone.				
ANSP15	Harmonise the requirements for the provision of FIS and licensing of ATCOs/ FISOs, including: a harmonised FISO training curriculum and improved communication training of FISOs.	Improve and harmonise FISO training curriculum. Training curriculum should be improved to adequately match the level of service to be provided. FIC staff should receive dedicated training improving their awareness and understanding of the VFR flights' needs, specialties, and light aircraft performance characteristics. Best practices already exist to deliver emergency situation training to FIC staff and VFR pilots in a coordinated manner. Enough FIC staff should be made available to support the provision of enhanced FIS. Several ATS providers have already implemented dedicated training programmes for staff that become redundant or underutilised due to the increasing automation of ATS provision. This action reinforces the objectives and provisions of the Action Plan for Air Ground Communications, focusing on the aspects that are of particular importance in the communication exchange between ATS units and VFR flights. ATS staff should be trained to: Strictly apply the readback/hearback procedure; Actively seek confirmation in	FIS	Planned	31/12/2024	

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		case of doubt; Use unambiguous call-signs - full call-sign or call-sign coupled with type of aircraft; Use published reference points in ATS messages to pilots, to the extent possible; Use simple ATC clearances and instructions; Use more concise transmissions, if necessary broken in segments; Use reduced rate of speech when talking to VFR pilots; Issue pre-warning of instructions to be passed; Provide FIS in English language; Acquire adequate knowledge of and apply communication failure procedures as required Harmonisation of FIS provided to VFR flights should be based on European IRs/AMCs/GMs, ICAO recommendations and existing best practices. Examples of best practices are i.e the Low Airspace Radar Service provided in UK airspace and the radar information services provided in German airspace. Radar-derived information available at ATS units should be used to enhance the information passed to pilots. It should include, as appropriate, navigational assistance, coordination of controlled airspace entry/crossing clearance, passing traffic information and information about restricted airspace activation/deactivation and concerned traffic, as well as provision of other aeronautical information and information about potentially hazardous conditions. The service could include provision of warnings to pilots of any unfavourable factors including airspace infringement and traffic warnings. FIS level could be raised to enable proactive prevention of potential conflict situations. The scope of this action should include the harmonisation of services provided by civil and military FIS provider organisations. In some states, this is believed to be urgently required, including the provision of FIS with Surveillance data by FIS staff (not ATC).				
ANSP16	Ensure all MORs are timely and comprehensive to enable review/ investigation and collation of causal factors.	This is particularly important in states where there is post-infringement communication between the ANSP and the pilot. Timely reporting and investigation allow for greater accuracy in causal factor identification when recollections are fresh in the memories of all parties.	Safety department	Completed	01/01/2014	

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		AIM/MET				
AIM1	Examine ways of making AIS available to pilots, with real-time information, in a format that is suitable for handheld devices.	Real-time AIS information increases the situational awareness of the pilot. By providing ways to have this information available in the cockpit, activation of various types of special airspace and other NOTAMs can be pushed by the software. Careful and thorough flight preparation is still key to a safe flight execution, tools like this will help to reduce the risk of airspace infringements.		Not yet planned		
AIM2	Standardise (harmonise) VFR en-route charts.	Improved VFR publications will contribute to better IFR traffic protection. Standardisation of VFR en-route charts is considered the highest priority. The products provided by commercial sources (different from the State AIS organisations) should be considered within the scope of this standardisation effort. There must be a standard representation of airspace to prevent confusion in cross-border flights. Compliance with and common interpretation of ICAO Annex 4 requirements needs to be achieved. This includes common map layout conventions, consistent use of colour coding, symbols etc. High priority should be assigned to the standardisation of the most commonly used ICAO VFR chart (1:500 000). The action aims to improve the readability and simplify VFR en-route charts as much as possible. Only information relevant to VFR flights should be printed. There are instances of VFR en-route charts saturated by the volume of printed information. It takes the pilot too long to consult during flight and may lead to distraction. However, simplification should not lead to loss of important features. The clarity of frequency information should be improved. Frequencies should be indicated clearly on electronic and paper maps, allowing easy reference by pilots during flights. Harmonisation may include a review of needs and an agreement to publish charts with more appropriate scales (e.g., 1:250 000) for local flights. Harmonisation of VFR AIPs (manuals) should also be considered. The involvement of GA representatives in such reviews and in the process of VFR	AIS/ATM Department	Completed	01/01/2020	

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		publications' standardisation is essential. The EUROCONTROL Agency should support and coordinate AIS providers' chart harmonisation efforts through the existing working arrangements.				
AIM3	Investigate the feasibility of providing aeronautical information free of charge for GA.	The action aims to make aeronautical and MET information, that is relevant to airspace and airports/ airfields open to VFR flights, freely available to the GA VFR flying community. This would reduce the probability of inadequate pre-flight preparation. For example, VFR en-route charts should be freely accessible and downloadable via internet from the service provider sites. There is a need for a dedicated study to identify what kind of information will bring the highest benefit to the users of the concerned airspace. EUROCONTROL, national authorities and AIS service providers should support GA establishments in their efforts to improve the briefing facilities on airfields (for example feeding them with the relevant aeronautical data, making necessary HW/SW available, etc.). A variety of solutions and business models (or combinations thereof) could be considered in this context. For instance, the service provision cost could be recovered through license fees or public (state or European Community) funds. The development of the SES2 package offers an opportunity to support the implementation of a high quality and «publicly accessible» AIS portal.	AIS/MET/ATM Department	Completed	01/01/2020	
AIM4	Provide and enhance on-line (web-based) accessibility of aeronautical information services	NOTAMs, maps, charts, and current weather information should be made easily accessible at the service provider websites. Dedicated pages for GA VFR flights that provide access to all information needed for a flight could be designed. Visualisation of information should be improved: it should be user-friendly and intuitively comprehensible. The mechanisms, processes and means for delivery of the actual airspace structures' status to users (in particular GA) should be reviewed and optimised. Online AIS provision should not totally replace the traditional methods. Pilots should be provided with the option to obtain pre-flight briefing materials in hard copy or to contact the appropriate briefing office whichever is the preferred method of preparing for the flight.	AIS/MET	Planned	31/03/2024	

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
AIM5	Harmonise, enhance, and classify AIS provision to VFR flights and promote classification rules and usage of keywords.	The implementation of this action should include: Provision of dedicated VFR sections in the AIPs or VFR AIPs (manuals); Provision of up-to-date VFR charts; Implementation of a user-friendly NOTAM system for VFR flights. The NOTAM briefing facilities should provide for: Graphical visualisation of information about changes to airspace structures and activation/deactivation of restricted airspaces; Narrow route briefing for (long distance) route flights; NOTAM selection and prioritisation tool; Grouping NOTAMs by topic. Enabling the generation of briefing packages tailored to the needs of the various user types may be considered (e.g., a glider pilot would need different information to a pilot planning a cross country flight). In case of generation of NOTAM update packages, the type of users the update is intended for should be taken into account (e.g., GA VFR flight). It would be desirable to include a short summary outlining the changes in traffic schemes and airspace. The readability of NOTAMs and other publications (AIC) of potential interest to VFR flights should be improved using plain language rather than encoded text where possible. The names of towns, villages and other well-known geographic notions should be used instead of coordinates, which most of pilots cannot use in-flight. In the case of military ATS providers, the airspace status information should be made available to the units providing services to the VFR flights. Military controllers should pass this information to concerned flights which maintain radio contact. In cases where FIS is provided by a civil entity, the airspace status information should be made available according to the implemented FUA procedures. Concerned FIC(s) may be informed directly or through the responsible FUA structures.	AIS / ATM Department	Completed	01/01/2020	
AIM6	Improve availability of and access to VFR en-route charts and dissemination of updates to pilots.	Both electronic and hard copy (paper) versions of maps/charts should be maintained in order to provide the preferred means of flight briefing to the different generations of GA pilots. Enabling downloads of current charts or sections thereof is an improved service requested by pilots. Further improvement could be achieved by alerting subscribers (users) to implemented	AIS/ATM Department	Completed	01/01/2020	

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		changes/updates, for example by means of e-mail notification messages. In addition, site visits and seminars should be considered in the case of major airspace changes.				
AIM7	Include geographical coordinates in information items containing position details wherever possible.	Geographical coordinates are a major issue in GPS systems. Most GPS systems provide an extensive data file including all kinds of way points, navigational aids etc. The availability of LAT/LONG information on VFR maps would support the crosscheck and input of correct data in the GPS set. However, increasing clutter on VFR en-route charts must be avoided. Therefore, more appropriate vehicle appears to be ENR and/or AD part of the AIP, rather than charts. This information can also be provided on-line (on the service provider or CAA website) and can be picked up by commercial data providers.	AIS/ATM Department	Completed	01/01/2020	
AIM8	Implement MET products tailored to low level VFR flights in line with ICAO requirements.	The recommendation concerns the implementation of weather reports and forecasts in line with ICAO Annex 3 requirements, e.g., GAMET and AIRMET. Where possible, integrated on-line provision of aeronautical and meteorological information should be ensured, for example on the AIS/ATS providers websites.	MET	Completed	01/06/2022	
AIM9	Promote standard and free maps on GPS. Promote standards to describe maps and add-ons.	GPS moving maps on portable devices provide the pilot with real time information on position and airspace. When used correctly, the increase in situational awareness is a benefit to the safety of air traffic. By providing free maps, according to set standards, the number of users is likely to increase.		Not yet planned		
Regulators						
REG1	Increase harmonisation for navigation and communication licensing requirements for private pilots, to include the use of	Basic navigation and communication skills training requirements for all private pilot licences should be harmonised. Knowledge and use of GPS systems should be addressed as well. A minimum adequate level of pilot navigation and communication skills should be achieved and maintained by the introduction of mandatory refresher training. Competence checks should include exercises on basic navigation and communication exchange (e.g.,		Completed		

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
	VFR Moving Maps in PPL training.	requests for clearance to cross controlled airspace) irrespective of the pilot's qualification. The flight check should include "pass/fail" criteria and could include some basic theory as well. Oversight of the pilot training process should be improved by strengthening the regulatory oversight of flying schools, training, and licensing process. The competency and proficiency of instructors and examiners will need to be assessed and appropriate standards established. The currency of instructors' knowledge of aviation regulations should be ensured. Integrate the use of VFR Moving maps in PPL training curriculums. Enable pilots to use mobile devices like smartphones and tablets with VFR Moving maps effectively during training. By learning to use the devices and software in a training environment, pilots will be better prepared to use them in flight while not compromising lookout, scan, or pilot capacity.				
REG2	Harmonise the licensing of FIS staff and ATC staff across the Europe in the use of Surveillance data to provide FIS. See also recommendation ANSP15	Harmonisation of FIS provided to VFR flights should be based on European IRs/AMCs/GMs, ICAO recommendations and existing best practices. Examples of best practices are i.e., the Low Airspace Radar Service provided in UK airspace and the radar information services provided in German airspace. Radar-derived information available at ATS units should be used to enhance the information passed to pilots. It should include, as appropriate, navigational assistance, coordination of controlled airspace entry/crossing clearance, passing traffic information and information about restricted airspace activation/deactivation and concerned traffic, as well as provision of other aeronautical information and information about potentially hazardous conditions. The service could include provision of warnings to pilots of any unfavourable factors including airspace infringement and traffic warnings. FIS level could be raised to enable proactive prevention of potential conflict situations. The scope of this action should include the harmonisation of services provided by civil and military FIS provider organisations. Other types of surveillance data (e.g., ADS-B) are now available in addition to Radar. The use of these new sources of available information can increase the situational awareness of the FISO or ATCO.		Not Applicable		UNTIL THE TECHNICAL REQUIREMENTS FOR THE USE OF SURVEILLANCE DATE PROVIDED BY FIS ARE ACQUIRED, WE CANNOT OFFER ANY SPECIFIC DATES BECAUSE IT DEPENDS ON THE AVIATION SERVICE PROVIDER

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		To support the best practices and information sharing in this area, a working Group on FIS provision has been created. According EASA, at the time of writing, there is no initiative to establish a harmonised FISO licensing and training scheme. Additionally, the qualification and training of ATCOs and FISOs is a national prerogative, with observed noteworthy differences. Moreover, the use of ATS surveillance in FIS provision is a subject for which various practices are observed throughout the EU Member States, and for which a thorough technical debate is being initiated. The proposed harmonization should be verified and addressed carefully.				
REG3	The National Regulator should form an Airspace Infringement Strategic Working Group to review airspace infringement risk dimensions and establish national safety improvement priorities.	The responsible national authority should review in consultation with the concerned airspace user and service provider organisations the dimensions of airspace infringement risk in their particular operational environment and establish local safety measure implementation priorities. This will enable the identification of the most relevant (for the given operational environment) recommended and proposed actions contained in this plan for implementation at national and local level. Risk awareness should be raised by dedicated safety seminars and workshops with the participation of the service providers and all airspace user types. The safety related efforts of GA organisations should be supported. Strengthening the voice and influence of GA organisations and establishments will help proactively shape pilot safety culture by campaigning on different safety issues. Various means and best practices could be used to this effect: publications (safety letters, notices, magazines), dedicated safety evenings at flying clubs, participation at flight safety seminars, dedicated safety webpages, etc. This brings together GA Associations, ANSPs, Airport Operators, Weather Service Providers, and safety partners to develop strategies. It should be an ongoing and permanent process. Promote the establishment of Local Airspace Infringement Teams (LAITs).		Not yet planned	31/12/2027	

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
REG4	Ensure that airspace change processes take due account of the different airspace users' requirements.	The applicable airspace change processes, methodology and practices should be reviewed and, as necessary, modified to ensure that the needs of the various airspace user categories are fairly considered in the process of designing and implementing changes to airspace organisation. All stakeholders affected by the intended change should be afforded the chance to (at best) influence the shapes and volumes of airspace structures, or (at least) to make change sponsors aware of airspace user requirements so that the impacts of an airspace change can be minimised or mitigated through, for example, operating arrangements (that in effect be in the spirit of the FUA concept). Changes to airspace structures should be introduced following consultation with GA user representatives and organisations. See also 6.50 below. It is important to have a transparent and comprehensive consultation/engagement process in line with national practices.		Completed		The procedure for airspace processes was astablished in December of 2022 and it is applicable
REG5	Harmonise airspace classification below FL195 in line with the strategic airspace design principles.	An appropriate strategic design of the airspace is crucial in permitting the ATM System to provide the right services, at the right time and in the right places decreasing routine tasks and the requirement for tactical intervention. Harmonisation of airspace classification below FL195 should be based on the ICAO-defined airspace classes. It should aim for the establishment of common vertical limits, as far as practicable. It should also include harmonised application of associated rules, procedures, and air traffic services. It is highly recommended deploying airspace structures that provide a greater degree of strategic de-confliction with particular consideration of the cross-border operations. The design of airspace should be as simple as possible, whilst not compromising safety. Where possible, reduce the amount of controlled airspaces and mitigate risk through establishment of TMZ/RMZ.		Ongoing		AIRSPACE MENAGMENT COMMITTEE togather with Ministry of transport and comunication, Ministry of defence , BHDCA and BHANSA
REG6	Establish a requirement for regular update of the on-board GPS systems database.	It is recognised that there is no mandatory requirement for VFR pilots to have a GPS set in their aircraft. However, a considerable number of incidents occurred due to use of out-of-date GPS maps or due to other GPS use related issues (e.g., power failure). Therefore, aircraft operators and pilots, who intend to use a GPS set in the planning and execution		Not Applicable		

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		phases of a flight, should be required to operate a GPS system with the correct database only. The suitability of placing appropriate requirements on GPS database providers could be considered in this context.See also 6.2.				
REG7	Review and harmonise requirements for the carriage and use of transponders and other conspicuity devices by light aircraft.	To reduce the risk on a mid-air collision. The use of transponder equipment is recommended. It improves: • Situational awareness for pilots and FISOs/ATCOs • Occurrence reporting regarding airspace infringements • The ability to provide traffic information There are several options to be considered when reviewing the requirements for the use of transponders: • ADS-B • FLARM • Mode-S		Ongoing		It is not mandatory
REG8	Optimise and harmonise occurrence reporting requirements and taxonomy, including those related to airspace infringement.	Regulation (EU) No. 376/2014 is clear in the ANSP and pilot reporting requirements. It is recommended to increase the scope to include ULMs, gliders and paragliders as reporting is currently not mandatory for these users. This type of airspace infringement is mainly notified if another pilot or ATC reports.		Completed		
REG9	Ensure updated maps and charts are made available to flying clubs and schools and encourage the use of VFR moving map technology.	Updated VFR en-route charts should be available on-line. Frequent changes should be avoided. Sponsorship should be considered to ensure that as a minimum the GA clubs directly affected by airspace changes (located in the vicinity) obtain the updated maps and charts for use by their members. Both electronic and hard copy (paper) versions of maps/charts should be maintained in order to provide the preferred means of flight briefing to the different generations of GA pilots. Enabling downloads of current charts or sections thereof is an improved service requested by pilots. Further improvement could be achieved by alerting subscribers (users) to implemented changes/updates, for example by means of e-mail notification messages. In addition, site visits and seminars should be considered in the case of major airspace changes.		Completed		AIP and eAIP BIH

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
		Moving maps provide enhanced situational awareness and timely warnings of airspace and airspace activity. The safe use of moving maps is beneficial to minimizing the risk of airspace infringements. Regulators should encourage the use, and work with ATOs and flying clubs on a safe concept to operate the devices in flight.				
REG10	Undertake periodic reviews of airspace allocation and structures within the respective FIRs and improve oversight of airspace management.	The action is designed to support the implementation of an optimised airspace organisation that takes into account, to the extent possible, the requirements of the different airspace user categories, while ensuring the safe use of airspace. Improved efficiency of airspace allocation and management will reduce the probability (hence the risk) of airspace infringements caused by the practice of 'cutting the corners' of controlled and restricted airspaces. It should include a review and optimisation of the number and volume of restricted airspace volumes according to their actual utilisation parameters. The regime of restricted airspaces should be reviewed, and tactical airspace management procedures improved, if needed. The review should include all airspace structures within the respective FIRs. It should be carried out in consultation with the concerned military organisations, airspace users and service providers. Given its scope and the amount of effort required, it is expected that the optimisation of the airspace structure will be performed in incremental steps over a number of years. Priorities may be established, as necessary (For example areas of dense VFR traffic maybe reviewed first).		Completed		AIRSPACE MENAGMENT COMMITTEE togather with Ministry of transport and comunication, Ministry of defence , BHDCA and BHANSA.IT WORKS IN CONTINUITY
REG11	Promote membership of flying clubs and GA associations among private pilots.	Encouraging private pilots to become members of flying clubs, schools and/or GA associations (for example AOPA, FAI, etc.) would support an improved downward flow of aeronautical information (e.g., notification of airspace changes), guidance materials and information supply in general. It would improve availability and accessibility of education and awareness materials and thus contribute to raising pilots' general knowledge and awareness of risk. However, flying schools and clubs may have to accept that this will place additional responsibility on them.		Ongoing		
REG12	Establish	Implementation of the action should reduce the probability		Ongoing		

EAPAIRR Recommendation Code	EAPAIRR recommendation	Recommendation Description	Location	Status	(Planned) Date of implementation	Comment
	requirements for correct GPS equipment installation and maintenance.	of GPS system failure, in particular due to loss of power supply or signal.				
REG13	Harmonise the regulation of flights by ultra-lights, microlights and gliders (including hang-gliders and para gliders).	A minimum level of pilot navigation and communication skills should be achieved. While the operation and licensing of sailplane/glider pilots is under EASA's remit and action has already been taken, the other mentioned categories (e.g., micro-lights) are operated under national rules because they are Annex II aircraft. Subject to individual national air navigation orders/regulations.		Ongoing		
REG14	Introduce formal Just Culture and Human Factors training as part of all flight crew licensing training	By introducing a formal Just Culture and Human Factors training, as part of all flight crew licensing training, pilots will acquire information to help their performance in flight but also in briefing/debriefing, Topics to be included are: improved reporting, safety awareness, airmanship and Threat and Error Management.		Ongoing		
REG15	Introduce a process for Regulatory post-Infringement review and action.	Conduct this process under a "Just Culture", where blame is not apportioned for an infringement. Instead, the facts are sought to fully-understand why the infringement occurred and actions are identified to prevent a repeat.		Ongoing		
REG16	National Regulators to reassess requirements for obtaining a private pilot license.	NSAs should consider other measures to enhance pilot skill levels. These measures are collated in the toolbox below. The necessity/applicability of these recommendations differs per country and therefore have no separate listing in the recommendations' list. 1. NSA's to review the competencies required to maintain for their licenses. Evidence would be needed to justify changes. 2. Pilot associations to encourage Pilots to consider voluntary hours with instructors to improve proficiency. 3. Pilot associations to recommend/suggest a list of items for the mandatory annual flight with an instructor (refresher training). To include R/T communication and navigation.				

- **Global Action Plan for Prevention of Runway Excursions**
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This section aims at collecting data in order to monitor the Prevention of Runway Excursions. Following the IATAs global accident database reports majority of incidents/accidents involve Runway Excursion.

GAPPRE Recommendation Code	GAPPRE recommendation	Location	Status	(Planned) Date Of implementation	Comment
Aerodrome Operators					
ADR1	Ensure that runways are constructed, resurfaced and repaired in accordance with the national or regional (e.g., EASA) regulations, so that effective friction levels and drainage are achieved.	LQSA	Ongoing	31/12/2023	Runway at LQSA is constructed, resurfaced and repaired in accordance with the ICAO and EASA regulations, and effective friction levels and drainage is achieved.
ADR2	An appropriate program should be effectively implemented to ensure the removal of contaminants from the runway surface as rapidly and completely as possible to minimize accumulation and preserve friction characteristics.	LQSA	Completed	31/12/2021	An appropriate program is implemented and ensure the removal of contaminants from the runway surface as rapidly and completely as possible to minimize accumulation and preserve friction characteristics.
ADR3	If provided, ensure that approach radio navigation aids (e.g., ILS) and visual aids (e.g., AGL, PAPIs and surface markings) are maintained in accordance with ICAO Standards and Recommended Practices. An appropriate method for the inspection and assessment of markings deterioration should be implemented.	LQSA	Completed	31/12/2021	Approach radio navigation aids (ILS) and visual aids (AGL, PAPIs and surface markings) are maintained in accordance with ICAO Standards and Recommended Practices and EASA regulation. An appropriate method for the inspection and assessment of markings deterioration is implemented.
ADR4	Ensure that the runway holding positions are clearly marked, signed and if required, lit. If intersection takeoffs are conducted, install at the relevant runway holding positions signs to indicate the Takeoff Run Available (TORA).	LQSA	Completed	31/12/2022	The runway holding positions are clearly marked and signed. Intersection takeoffs are not conducted.
ADR5	Ensure robust procedures are in place for calculating temporary reduced declared distances e.g., due to work in progress on the runway. When reduced declared distances are in operation, ensure that the temporary markings, lighting and signs accurately portray the reduced distances and that they are well communicated in a timely manner to the state's aeronautical information services for publication and to the relevant ATS units.	LQSA	Completed	31/12/2021	Procedures are in place for calculating temporary reduced declared distances e.g., due to work in progress on the runway. When reduced declared distances are in operation, the temporary markings, lighting and signs accurately portray the reduced distances, and they are well communicated in a timely manner to the state's aeronautical information services for publication and to the relevant ATS units.

GAPPRE Recommendation Code	GAPPRE recommendation	Location	Status	(Planned) Date Of implementation	Comment
ADR6	Ensure that the procedures to assess runway surface conditions according to ICAO Global Reporting Format include reactive as well as proactive surface assessment to make sure hazardous changes are all identified and communicated in a timely manner.	LQSA	Completed	31/12/2021	There is procedure to assessing runway surface conditions according to ICAO Global Reporting Format include reactive as well as proactive surface assessment to make sure hazardous changes are all identified and communicated in a timely manner.
ADR7	Ensure robust procedures are in place for communicating information regarding changing surface conditions as frequently as practicable to the appropriate services according to the ICAO Global Reporting Format. Roles, responsibilities of stakeholders and coordination procedures should be formalised.	LQSA	Completed	31/12/2021	There is procedure in place for communicating information regarding changing surface conditions as frequently as practicable to the appropriate services according to the ICAO Global Reporting Format. Roles, responsibilities of stakeholders and coordination procedures are formalised.
ADR8	In accordance with ICAO standards (and regional, e.g., EASA regulations), wind sensors and wind direction indicators (wind socks) should be sited to give the best practicable indication of conditions along the runway and touchdown zones.	LQSA	Planned	31/12/2025	Wind sensors and wind direction indicators (wind socks) will be sited to give the best practicable indication of conditions along the runway and touchdown zones in accordance with ICAO standards and EASA regulations.
ADR9	Consider equipping for digital transmission of ATIS as appropriate to ensure that ATIS information is updated in a timely manner.	LQSA	Planned	31/12/2025	Equipping for digital transmission of ATIS as appropriate to ensure that ATIS information is updated in a timely manner will be install in coordination with BHANSA (ANS provider).
ADR10	If installed, RWY centreline lights should also be used together with the runway edge lights whenever runway edge lights are switched on and when the runway is in use.	LQSA	Completed	31/12/2021	RWY centreline lights are installed, and they used together with the runway edge lights whenever runway edge lights are switched on and when the runway is in use.
ADR11	Ensure appropriate coordination with the meteorological service provider, the ANSP and the aircraft operators to regularly assess the relevancy of weather data, in particular at large aerodromes where there could be spatial differences in weather data.	LQSA	Completed	31/12/2021	There is coordination with the meteorological service provider (through SLA), the ANSP and the aircraft operators for regularly assessing the relevancy of weather data.
ADR12	Ensure runway exits are appropriately named according to a logic of succession of numbers and letters avoiding possible ambiguity.	LQSA	Completed	31/12/2021	Runway exits are appropriately named according to a logic of succession of numbers and letters avoiding possible ambiguity.
ADR13	Runway surroundings should be considered when designing or modifying strips or RESA. It is necessary to consider the local constraints against ICAO provisions and regional (e.g., EASA) regulations so as to ensure relevant mitigation.	LQSA	Ongoing	31/12/2025	Runway surroundings will be considered when designing or modifying strips or RESA. It will be consider the local constraints against ICAO provisions and regional (e.g. EASA) regulations so as to ensure relevant mitigation.

GAPPRE Recommendation Code	GAPPRE recommendation	Location	Status	(Planned) Date Of implementation	Comment
ADR14	Information related to air operations hazard or specificities in the airport vicinity should be identified and addressed to pilots in the Local Runway Safety Team (LRST) and published through an appropriate means.	LQSA	Completed	31/12/2021	Information related to air operations hazard or specificities in the airport vicinity will be identified and addressed in the Local Runway Safety Team (LRST) and published through an appropriate means.
ADR15	Runway condition codes assessed should be compared against braking action reports by the pilots to ensure the accuracy of the information provided to the pilots.	LQSA	Completed	31/12/2021	Runway condition codes assessed are comparing against braking action reports by the pilots to ensure the accuracy of the information provided to the pilots.
ADR16	Consider using Approach Path Management (APM) in coordination with local ATC and aircraft operators. Associated issues should be addressed by the LRST.	LQSA	Planned	31/12/2024	Consideration about using Approach Path Management (APM) will be discuss with local ATC and aircraft operators.
ANSPs					
ANSP1	ANSPs should ensure the importance of stabilised approach, its elements and compliance with final approach procedures and aircraft energy management are included in initial and refresher training of ATCOs conducted by ANSPs and ATCO Training Organisations, as well as in AFISOs training, as applicable.	LQSA/LQBK/LQTZ/LQMO	Planned	31/12/2024	
ANSP2	With regard to assignment of or change to runway assignment for arriving or departing traffic: ANSP2 a. Whenever the runway change is pre-planned, notify it as early as practicable together with the expected time of the change to flight crews, including by adding relevant information in ATIS, where available. ANSP2 b. As far as practicable, avoid changing the assigned runway to aircraft on approach or taxiing for departure. ANSP2 c. ANSPs should ensure ATCOs are aware that RWY changes create additional workload, increase vulnerability to error and flight crews need time to re-brief and prepare for it. ANSP2 d. ANSPs should ensure that the runway configuration change procedure/process takes account of the above points and of the tailwind information as appropriate. ANSP2 e. When operationally possible, accept the flight crew preference for a runway when requested “due to performance limitations”.	LQSA/LQBK/LQTZ/LQMO	Not Applicable		

GAPPRE Recommendation Code	GAPPRE recommendation	Location	Status	(Planned) Date Of implementation	Comment
ANSP3	ANSPS should: ANSP3 a. Review available data (e.g., occurrence reports, go-around / missed approach data etc.) with the aim of identifying the ANSP-related runway excursion contributing factors and relevant mitigations, for example enhanced airspace design and procedures and ATCO training and procedures. ANSP3 b. Share at network level the identified runway excursion contributing factors and relevant mitigations.	LQSA/LQBK/LQTZ/LQMO	Ongoing	31/12/2024	
ANSP4	Review processes covering the provision of essential information on aerodrome conditions such as weather, wind and runway surface conditions (e.g., when 'wet' or contaminated) to ensure: ANSP4 a. A consistent, timely and accurate broadcast of aerodrome information. ANSP4 b. The integrity of the essential information supply chain from the originator (e.g. Met Office/Aerodrome Operator) to the user (e.g. flight crews, ATS, Met Office, aerodrome operator and AIS provider). ANSP4 c. Training on the use of ATIS/D-ATIS is provided to relevant operational staff. ANSP4 d. Compliance with the ICAO Global Reporting Format for runway surface conditions assessment and reporting, including the training of the relevant ANSP personnel.	LQSA/LQBK/LQTZ/LQMO	Completed	30/09/2021	
ANSP5	ANSP5 a. ANSPs should ensure that flight crews are informed of the Takeoff Run Available (TORA) or the Landing Distance Available (LDA) if these differ from the published data using appropriate means. The information should include any alter-native runways which may be available. ANSP5 b. ATS providers should collaborate with the aerodrome operators to determine the runway entries from which intersection takeoffs may be performed, and develop coordinated procedures for such operations.	LQSA/LQBK/LQTZ/LQMO	Completed	05/12/2019	
ANSP6	Participate in runway excursion safety information sharing at network level to facilitate, using just culture principles, the free exchange of relevant information on actual and potential safety deficiencies.	LQSA/LQBK/LQTZ/LQMO	Completed	01/01/2022	
ANSP7	If installed, RWY centreline lights should also be used together with the runway edge lights whenever runway	LQSA/LQBK/LQTZ/LQMO	Completed	05/12/2019	

GAPPRE Recommendation Code	GAPPRE recommendation	Location	Status	(Planned) Date Of implementation	Comment
	edge lights are switched on and when the runway is in use.				
ANSP8	Consider equipping for digital transmission of ATIS, as appropriate (e.g., via telephone or other means).	LQSA/LQBK/LQTZ/LQMO	Completed	31/12/2010	
	Regulators				
REG1	Regulators should ensure that: • The national/regional regulations are in line with the relevant ICAO standards and recommended practices; and • All infrastructure, practices and procedures relating to runway operations are designed and remain in compliance with such national/regional regulations.	LQSA/LQBK/LQTZ/LQMO	Ongoing	31/12/2024	Civil aviation authority BH implemented EU regulation 139/2014
REG2	Regulators should enhance the focus on the prevention of runway excursions in their oversight activities by taking into account best practices (e.g., GAPPRE), in addition to their national/regional regulatory requirements.	LQSA/LQBK/LQTZ/LQMO	Ongoing	31/12/2024	
REG3	Ensure that the risk of runway excursion is included as part of runway safety in the State Safety Plan and provide safety performance indicators to monitor/demonstrate the effectiveness of any State or industry initiatives.	LQSA/LQBK/LQTZ/LQMO	Ongoing	31/12/2025	
REG4	As part of their oversight activities, Regulators should ensure close cooperation between ground handling service providers, aircraft operators, aerodrome operators and air navigation service providers, with regard to the prevention of runway excursions. This cooperation will be a part of an effective implementation of SMS of the relevant organisations, verified by the respective regulator through regular assessments and safety performance indicator monitoring.	LQSA/LQBK/LQTZ/LQMO	Ongoing	31/12/2025	
REG5	Ensure that any noise mitigation rules required to be implemented by aerodromes should be subject to regular and coordinated hazard identification and risk assessment, to ensure they do not increase the likelihood of runway excursions, in particular in relation to operations on contaminated runways.	LQSA/LQBK/LQTZ/LQMO	Not yet planned		
AIM6	Ensure a continued focus on training for pilots, air traffic controllers, AFISOs, and aerodrome personnel, which includes runway excursion prevention. Ensure the	LQSA/LQBK/LQTZ/LQMO	Completed	31/12/2022	Completed training for Aerodrome staff by Training programme in accordance EU regulation 139/2014

GAPPRE Recommendation Code	GAPPRE recommendation	Location	Status	(Planned) Date Of implementation	Comment
	continuous review and improvement of the respective training programmes by the regulator and Training Organisations, through the use of performance indicators.				
AIM7	Assess the performance of aircraft operators' processes for: • Safety data collection (e.g. flight data monitoring and reporting). • Identification and analysis of precursors and causal factors. Ensure that aircraft operators are participating in safety data sharing programs, e.g. Data4Safety.	LQSA/LQBK/LQTZ/LQMO	Not yet planned		
REG8	As part of safety promotion, ensure GAPPRE is shared with relevant stakeholders to ensure that the causal and contributory factors of runway excursion continue to be understood, enabling organisations to further enhance effective runway excursion prevention measures.	LQSA/LQBK/LQTZ/LQMO	Not yet planned		
REG9	States should assess the performance and success of safety information sharing networks among all users of the aviation system including the extent of free exchange of information on actual and potential safety deficiencies.	LQSA/LQBK/LQTZ/LQMO	Not yet planned		
REG10	States should establish a national runway safety forum/network which includes representatives from aircraft operators, ANSPs, aerodromes and regulators where best practices and learning can be shared. The National forum/network should include key representatives from Local Runway Safety Teams. National best practices should be shared regional/globally through regional/global knowledge platforms.	LQSA/LQBK/LQTZ/LQMO	Not yet planned		
REG11	States should measure the effectiveness of the GAPPRE recommendations, for example by collaboratively developing harmonised performance indicators or success factors.	LQSA/LQBK/LQTZ/LQMO	Planned	31/12/2025	
REG12	REG12 a. Regulators and ICAO should consider and adopt regulatory measures for preventing visual confusion during line-up between runway edge and centreline lights leading to misalignment with the runway centreline. This should also take into account the effects of low visibility and runway contamination and the effect of using various light colours and patterns to differentiate the runway centreline and edge lighting systems. REG12 b. Regulators and ICAO should consider the guidance needs of the individual aircraft, and adopt provisions that disassociate the installation of taxiway centreline lights from	LQSA/LQBK/LQTZ/LQMO	Not yet planned		

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	the aerodrome traffic density.				
REG13	Except where runway TDZ lights are provided, regulators and ICAO should upgrade to a standard the use of simple TDZ lighting as an aid to enhance landing (touch down point) accuracy.	LQSA/LQBK/LQTZ/LQMO	Not yet planned		

G. Glossary of abbreviations

This Annex mainly shows the abbreviations that are specific to the LSSIP Document for Bosnia and Herzegovina.

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

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

Term	Description
AF	ATM Functionality
BH	Bosnia and Herzegovina
BHDCA	Bosnia and Herzegovina Directorate of Civil Aviation
BHANSA	Bosnia and Herzegovina Agency for Air Navigation Services
FAB-CE	Central European Functional Airspace Block
DPS	Data Processing Systems
MoD BH	Ministry of Defence of BH
SES	Single European Sky
SMATSA	Serbia and Montenegro Air Traffic Service Agency