EUROCONTROL

2019

LSSIP 2019 - CROATIA
LOCAL SINGLE SKY IMPLEMENTATION

Level 1 - Implementation Overview

FOREWORD

"We manage a seamless European airspace by linking together the elements of the European air traffic management system. Focusing on performance of the European network, we ensure that flights reach their destination safely, on time, with the least possible impact on environment and in a cost-efficient way".

With this mission, as Director NM, I must ensure to develop and operate effectively and efficiently the air traffic management network in Europe and beyond, to meet current and future airspace and ground capacity needs, in full partnership with all operational stakeholders.

In particular, one of the NM activities through the Infrastructure Division, is to focus on the planning and monitoring of the European ATM implementation of the SES objectives at the local level according to EU legislation.

For more than 26 years, the Local Single Sky ImPlementation (LSSIP) documents are expressing yearly the commitment of civil and military national organisations (Regulators and National Supervisory Authorities), Air Navigation Service Providers and Airport Operators, towards the implementation of the European ATM Master Plan (Level 3).

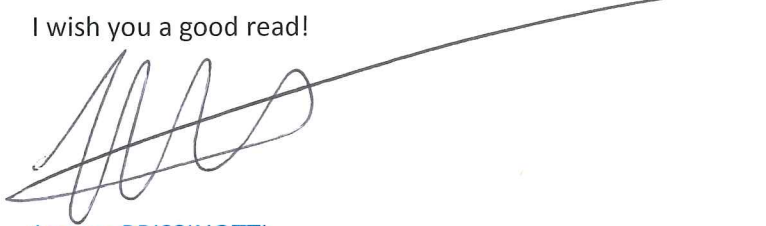
These documents provide an extensive and harmonised picture, for the benefit of the ATM community at large, of how all ECAC States as well as States having a Comprehensive Agreement with EUROCONTROL, and stakeholders concerned, are progressing in planning and deploying the mature elements of the European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

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

In addition, EUROCONTROL is developing efficient practices to avoid unnecessary duplication of reporting. We are cooperating with the SESAR Deployment Manager, the SESAR Joint Undertaking, the European Defence Agency and NATO on optimising the reporting mechanisms for relevant stakeholders by collecting some of the information needed on their behalf through the LSSIP process.

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

I wish you a good read!



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Master Plan Level 3 – Report Year 2019	https://www.eurocontrol.int/publication/european-atm-master-plan-implementation-report-level-3-2019
European ATM Portal	https://www.atmmasterplan.eu/
STATFOR Forecasts	https://www.eurocontrol.int/statfor
National AIP	http://www.crocontrol.hr/UserDocsImages/AIS%20produkti/eAIP/start.html
FAB Performance Plan	Latest FABCE Performance Plan V2.0 For details contact: Mr Matej Eljon: matej.eljon@fab-ce.eu

APPROVAL SHEET

The following authorities have approved all parts of the LSSIP Year 2019 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 2019.

Stakeholder / Organisation	Name	Position	Signature and date
Ministry of the Sea, Transport and Infrastructure	Tomislav Mihotić	State Secretary	
Croatian Civil Aviation Agency	Marin Puh	Director	
Croatia Control Ltd.	Vlado Bagarić	Director General	
Air, Maritime and Railway Traffic Accident Investigation Agency	Danko Petrin	Acting Director	19.03.2020
Military Aviation and Maritime Authority	Col Saša Crnec	Head of MAMA – Military Aviation and Maritime Authority	17.03.2020
Zagreb International Airport Jsc.	Hüseyin Bahadir Bedir	CEO	

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Executive Summary

National ATM Context

Member State of:

The Ministry of the Sea, Transport and Infrastructure (hereinafter referred to as: the Ministry) is competent, among other activities prescribed in the Air Traffic Act, for the overall civil aviation policy of the Republic of Croatia, establishment of a national strategy on aviation development, ensuring the proper implementation of international aviation agreements concluded by the Republic of Croatia, adoption of secondary legislation as set out in this Act and the international agreements binding on the Republic of Croatia and preparation of draft proposals for laws in the field of civil aviation.

In international relations, organizational unit competent for civil aviation within the Ministry shall have, as the "Directorate General for Civil Aviation, Electronic Communications and Post (hereinafter referred to as: the DGCA), the competences in civil aviation as delegated by the minister competent for civil aviation (hereinafter referred to as: the Minister); provided, however, that the Minister shall remain overall responsible for ensuring the lawful exercise of those competences.

The Croatian Civil Aviation Agency (hereinafter referred to as: the CCAA) has been established and works separately from the Ministry of the Sea, Transport and Infrastructure. The CCAA is a fully independent body set up in June 2009 in accordance with the provisions set out in the Air Traffic Act which was published in the Official Gazette issue no. 69/09, 17 June 2009 (and amended since, Official Gazette issue no. 84/11, and also OG 54/13 and 127/13 and 92/14). The Functions of National Supervisory Authority (NSA), in accordance with Regulation (EC). No. 549/2004 are performed by the CCAA which is responsible for oversight of ANSPs and drafting of regulations in ATM fields, when so prescribed by the EU law or if the subject matter is within the competence of member states.

Military Aviation Authority of Croatia was established in 2007 to regulate Military Aviation (MIL OAT Rules, MIL Aircraft Certification, MIL Air crew and maintenance licensing and MIL Aerodromes – Helipads certification. In Croatia, the military aviation is located on combined – civil/military airports (Zagreb, Pula, and Zadar).

The Air, Maritime and Railway Traffic Accident Investigation Agency is functionally and organizationally independent from all other Croatian aviation entities and from all natural and legal persons possibly having a conflict of interests. The Agency has been established by the Law on the establishment of the Air, Maritime and Railway Traffic Accident Investigation Agency (Official Gazette, issue no. 54/13) and has been registered as a legal person into the court register.

Croatia Control Ltd is an independent limited liability company established by the Republic of Croatia. The Republic of Croatia is also the sole owner of the company. The primary mission of Croatia Control Ltd. is provision of air navigation services, pursuing the basic principle of a high level of air traffic safety. Croatia Control Ltd. has been certified as an air navigation services provider, which complies with the Common Requirements for the following services: ATS, CNS, AIS, and MET. Pursuant to the certification process performed by the DGCA a certificate has been issued to Croatia Control Ltd. on 31 March 2009 by the DGCA. Croatia Control Ltd. is the designated provider of ATS and MET services in FIR Zagreb.

Airport authorities are limited liability companies functionally and organizationally independent from civil aviation authorities. There is no centralised management on all airports in Croatia. Major airports are owned by the Republic of Croatia (majority owner, 55% stake) and municipal authorities (counties and cities). Franjo Tuđman Airport in Zagreb is the main national airport and was awarded to the consortium in a 30-year concession. It is also the biggest and main international airport in the country whose traffic activity is predominantly based on scheduled traffic (apart from coastal airports whose main activities are based on seasonal summer charter traffic). Other international airports in Croatia are Split, Dubrovnik, Pula, Rijeka, Zadar, Osijek, Brač and Mali Lošinj. At these Airports, ATC service provision (TWR and APP) is provided by Croatia Control Ltd.

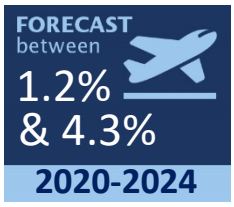
Main national stakeholders:

- The Directorate General of Civil Aviation, Electronic Communications and Postal Service of the Ministry of the Sea, Transport and Infrastructure and called DGCA in the document;
- The Croatian Civil Aviation Agency (hereinafter referred to as CCAA);
- Croatia Control Ltd. (hereinafter referred to as CCL);
- Air, Maritime and Railway Traffic Accident Investigation Agency (hereinafter referred to as AIA);
- The Ministry of Defence (hereinafter referred to as MoD).

Main airport covered by LSSIP: **Franjo Tuđman Airport** (LDZA) in Zagreb

Traffic and Capacity

Summer Forecast (May to October inclusive)



Minute, Per ACC

Croatia is part of: FABCE AIRSPACE ALLIANCE The FAB CE – FAB Central Europe

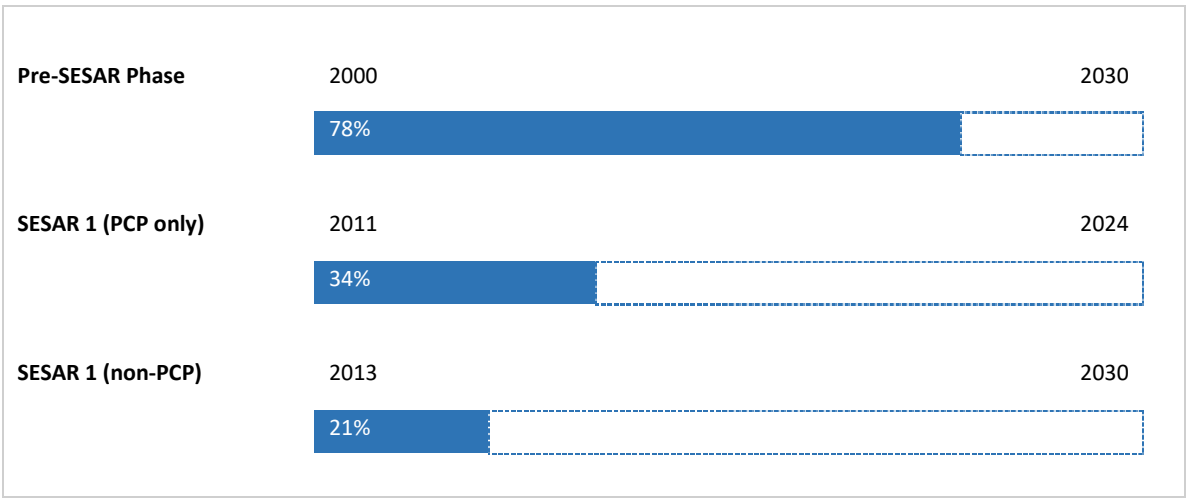
Number of national projects: 8
Number of FAB projects: 2
Number of multinational projects: 1

Progress per SESAR Phase

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

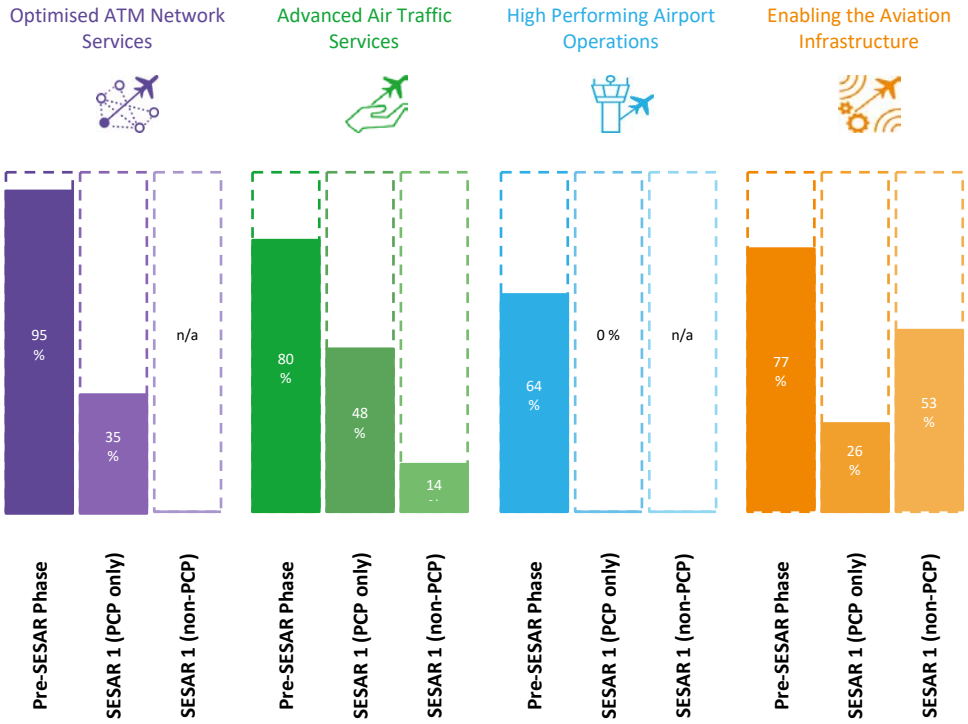
It shows the average implementation progress for all objectives grouped by SESAR Phases, excluding those for which the State is outside the applicability area as defined on a yearly basis in the European ATM Master Plan (Level 3) 2019, i.e. disregarding the declared "NOT APPLICABLE" LSSIP progress status.

The SESAR 1 (non-PCP) progress in the graphics below for this State is based on the following objectives: ATC02.9, ATC19, ATC20, COM11.2 and NAV12.



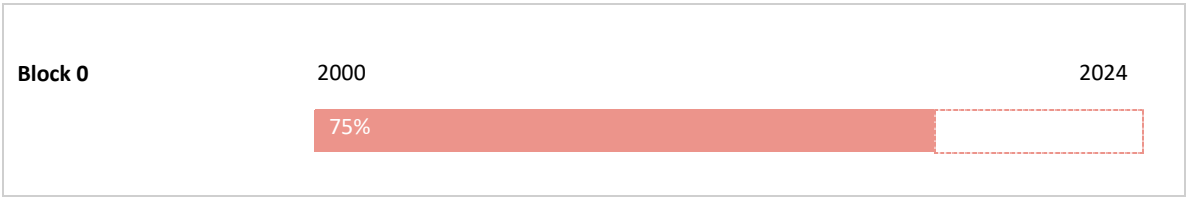
Progress per SESAR Key Feature and Phase

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



ICAO ASBUs Progress Implementation

The figure below shows the progress made so far in the implementation of the ICAO ASBUs Block 0. The overall percentage is calculated as an average of the relevant Objectives contributing to each of the relevant ASBUs; this is a summary of the table explained in Chapter 5.3 – ICAO ASBU Implementation Progress.



ATM Deployment Outlook

State Objectives

✓ **Deployed in 2018 - 2019**

- Migrate from AFTN to AMHS
COM10 - 100 % progress
- Aircraft Identification
ITY-ACID - 100 % progress

By 2020	By 2021	By 2022	By 2023+
- ASM Support Tools to Support Advanced FUA (AFUA) AOM19.1 - 96 % progress **- Ensure Quality of Aeronautical Data and Aeronautical Information** ITY-ADQ - 73 % progress **- 8,33 kHz Air-Ground Voice Channel Spacing below FL195** ITY-AGVCS2 - 62 % progress **- Collaborative Flight Planning** FCM03 - 84 % progress **- New Pan-European Network Service (NewPENS)** COM12 - 47 % progress **- Short Term Conflict Alert (STCA) for TMAs** ATC02.9 - 56 % progress	**- Short Term ATFCM Measures (STAM) - Phase 2** FCM04.2 - 03 % progress **- Free Route Airspace** AOM21.2 - 83 % progress **- ASM Management of Real-Time Airspace Data** AOM19.2 - 50 % progress **- Interactive Rolling NOP** FCM05 - 00 % progress **- Surveillance Performance and Interoperability** ITY-SPI - 78 % progress **- Arrival Management Extended to En-route Airspace** ATC15.2 - 06 % progress **- Management of Pre-defined Airspace Configurations** AOM19.4 - 00 % progress **- Full Rolling ASM/ATFCM Process and ASM Information Sharing** AOM19.3 - 88 % progress **- RNP Approach Procedures to instrument RWY** NAV10 - 91 % progress **- Information Exchange with En-route in Support of AMAN** ATC15.1 - 03 % progress **- Voice over Internet Protocol (VoIP) in En-Route** COM11.1 - 53 % progress **- Implementation of ground-ground automated co-ordination processes** ITY-COTR - 92 % progress **- Electronic Terrain and Obstacle Data (eTOD)** INF07 - 00 % progress **- Traffic Complexity Assessment** FCM06 - 07 % progress	**- Ground-Based Safety Nets** ATC02.8 - 67 % progress	**- Voice over Internet Protocol (VoIP) in Airport/Terminal** COM11.2 - 53 % progress **- Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring** ATC12.1 - 53 % progress **- Information Exchanges using the SWIM Yellow TI Profile** INF08.1 - 05 % progress **- RNP 1 in TMA Operations** NAV03.2 - 00 % progress **- RNAV 1 in TMA Operations** NAV03.1 - 89 % progress

Airport Objectives - Zagreb Airport

✓	**Deployed in 2018 - 2019**	None

By 2020	By 2021	By 2022	By 2023+
- Continuous Descent Operations (CDO) ENV01 - 78 % progress	**- Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)** AOP04.2 - 55 % progress **- Airport Collaborative Decision Making (A-CDM)** AOP05 - 1 % progress **- Initial Airport Operations Plan** AOP11 - 0 % progress		

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 2019, 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;

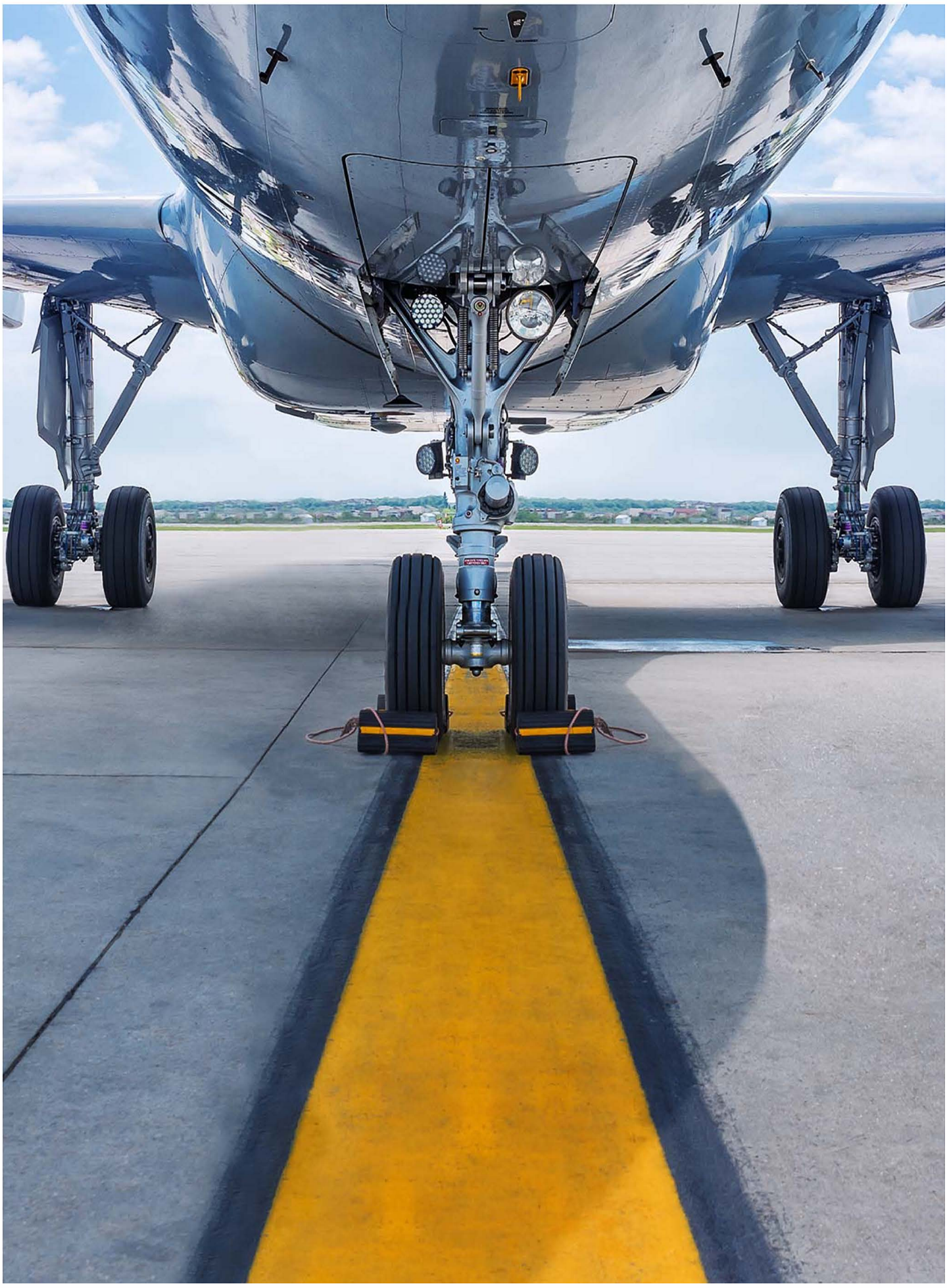
Chapter 3 provides the main Implementation Projects (at national, FAB and multinational level) which contribute directly to the implementation of the MP Operational Improvements and/or Enablers and Implementation Objectives. The Level 1 document covers a high-level list of the projects showing the applicable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

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

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

The Level 1 document is completed with a separate document called LSSIP Level 2. This document consists of a set of tables organised in line with the list of Implementation Objectives. Each table contains all the actions planned by the four national stakeholders (REG, ASP, MIL and APO) to achieve their respective Stakeholder Lines of Action (SLoAs) as established in the European ATM Master Plan L3 Implementation Plan Edition 2019. In addition, it covers a detailed description of the Implementation Projects for the State as extracted from the LSSIP Data Base.

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



1. National ATM Environment

1.1. Geographical Scope

International Membership

Croatia is a Member of the following international organisations in the field of ATM:

Organisation		Since
ECAC	✓	July 1992
EUROCONTROL	✓	April 1997
European Union	✓	July 2013
EASA	✓	Full member
ICAO	✓	May 1992
NATO	✓	April 4, 2009
ITU	✓	June 3, 1992
EDA	✓	July 2013

Geographical description of the FIR(s)

Zagreb ACC has been delegated for ATS provision for:

- En-route traffic inside the Zagreb FIR (Fig. 1)
- En-route traffic inside the western part of the FIR Sarajevo above 9500 ft MSL, as depicted on the LOWER map, below, (see Figure 2)
- the En-route traffic inside the western part of FIR Sarajevo from FL 325 up to FL 660 as on the UPPER airspace map below (see Figure 2).

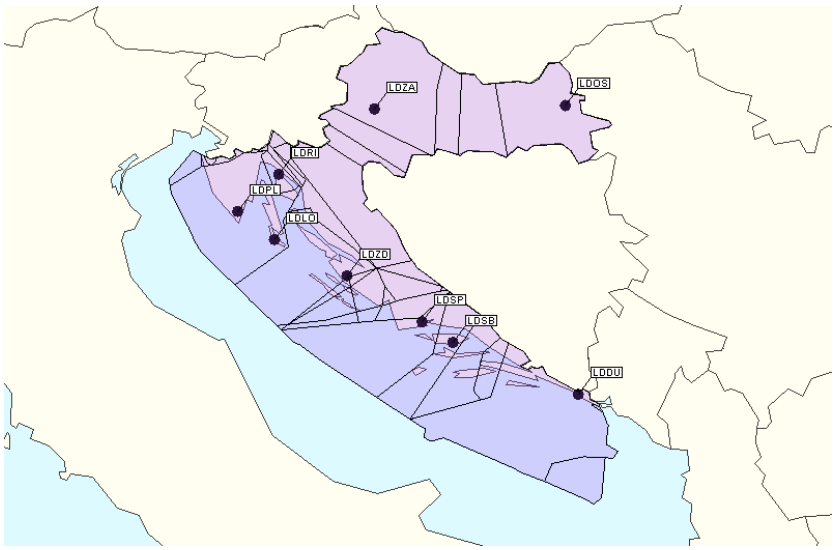


Figure 1 Zagreb FIR

The geographical scope of this document addresses the Croatia FIR Zagreb and a part of FIR Sarajevo where the ATS service provision is still delegated to CCL (see Figure 1.)

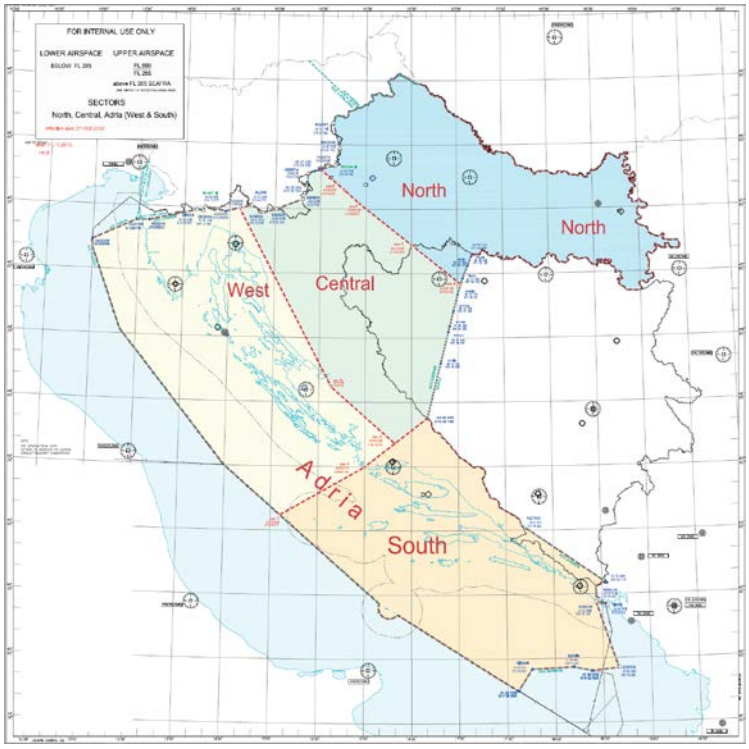


Figure 2 CCL AoR

Zagreb FIR is surrounded by FIRs of 7 States, Hungary (Budapest FIR), Slovenia (Ljubljana FIR and Wien ACC within delegated MURA sector), Italy (Padova and Brindisi), Bosnia and Herzegovina (Sarajevo FIR), Serbia (Belgrade FIR) and Montenegro (Belgrade FIR).

Airspace Classification and Organisation

1. Airspace class C applied to:

- Zagreb CTA from FL 115 to FL 660
- Within the lateral limits of Zagreb TMA between 1000 ft AGL and FL 205
- Within the lateral limits of Pula, Zadar, Split and Dubrovnik TMA between 7500 ft MSL and FL135/FL155/FL 205

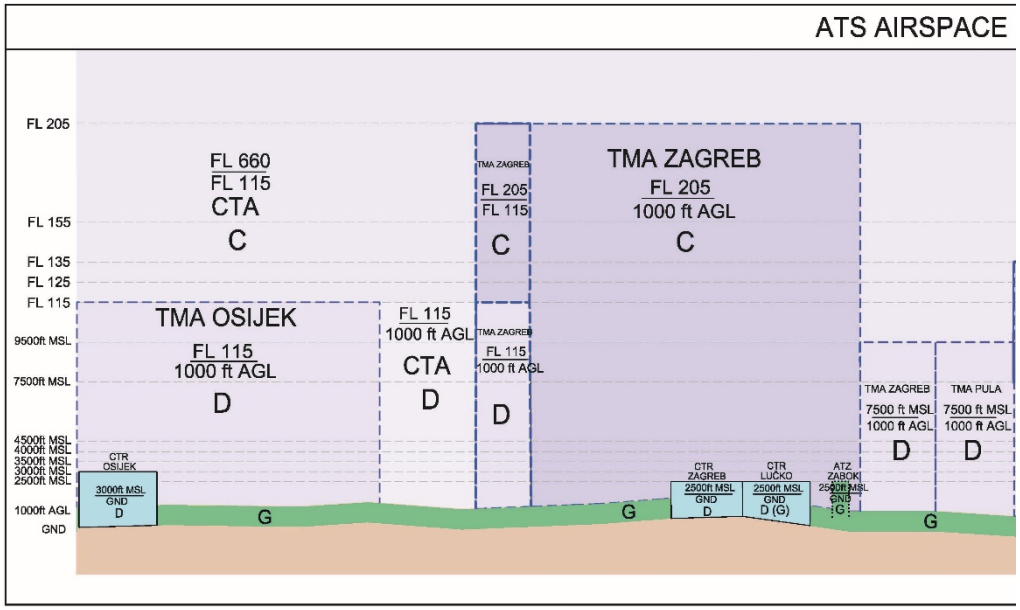
2. Airspace class D applied to:

- CTA Zagreb between FL 115 and 1000 ft AGL
- Osijek and portion of Zagreb TMA's from 1000 ft AGL up to FL115
- Pula, Dubrovnik, Rijeka and Zadar TMA's within their lateral and boundaries from 1000 ft AGL up to 7500 ft MSL
- All Croatian CTRs within their lateral and vertical boundaries

3. Airspace class G applied with lateral limits of Zagreb FIR with exemption of CTRs, from GND to 1000 ft AGL.

Metric system is not used, only imperial system is available in accordance with national regulations.

The Division Flight Level (DFL) separating upper from lower ATS airspace is FL 285.



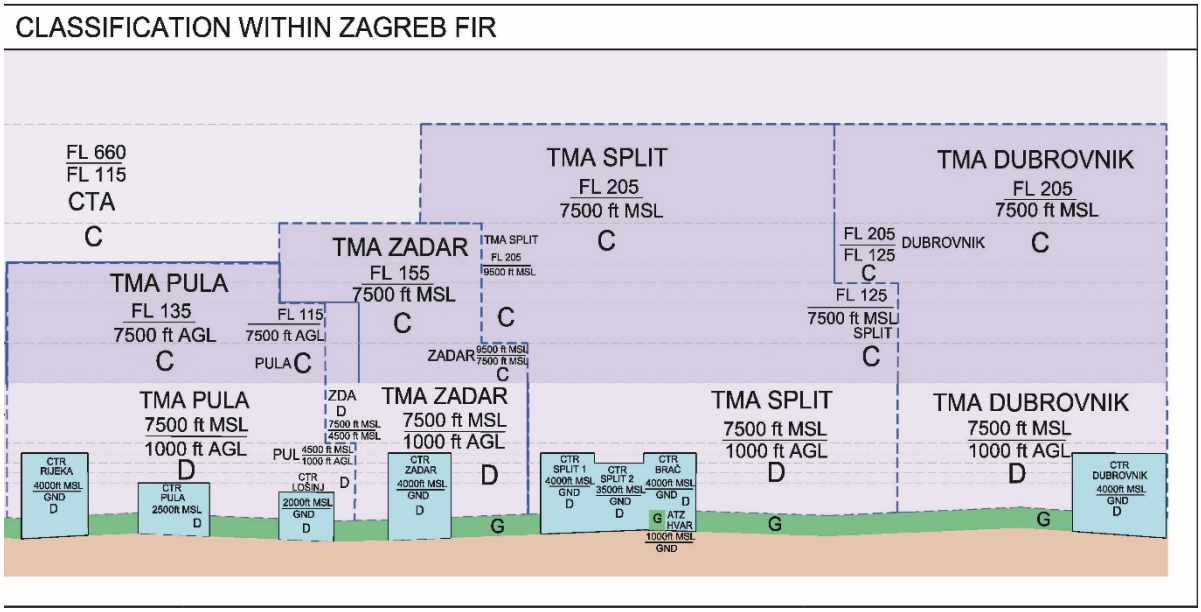


Figure 3 ATS Airspace classification within FIR Zagreb

SEAFRA h24

Since December 2016, cross-border Free-route Airspace (FRA) procedures are available H24 from FL325 up to FL660 in the airspace formed from airspaces of Zagreb FIR/UIR, Sarajevo UIR and Belgrade FIR.

SECSI FRA

South East Common Sky Initiative (SECSI) is crossborder free route airspace initiative covering the airspace of Austria, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, and Serbia.

SECSI FRA encompasses the area of former SAXFRA and SEAFRA, forming one cross-border free route airspace from 01 February 2018 and is available h24 daily.

The part covering former SAXFRA remains vertically unchanged, with FRA operations starting above the lowest available level (LAL).

The part covering former SEAFRA has a lower FRA operations level change from FL325 to FL205.

Both parts are laterally merged into one cross border FRA without compulsory intermediate points except as described in RAD.

ATC Units

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

ATC Unit	Number of sectors		Associated FIR(s)	Remarks
	En-route	TMA		
Zagreb ACC	**9/10**	1	Zagreb FIR and part of Sarajevo FIR	Serving CIV and MIL tfc.
Dubrovnik		1		Serving CIV and MIL tfc.
Osijek		1		Serving CIV and MIL tfc.
Pula		1		Serving CIV and MIL tfc.
Rijeka		1		Serving CIV and MIL tfc.
Split		1		Serving CIV and MIL tfc.
Zadar		1		Serving CIV and MIL tfc.

U-Space services

An overview of the current implementation progress and short to medium term planning information on the main elements underlying the provision of the U-Space services enabling Very Low Level drones operations is provided in Annex to this document.

The following table contains a list of the 16 services expected to be available in phases U1 (2019) to U3 (2025), as described in the European ATM Master Plan add-on: Roadmap for the safe integration of drones into all classes of airspace.

Phase	Service	
U1 Foundation Services	U1.1	e-Registration
	U1.2	e-Identification
	U1.3	Pre-tactical Geo-fencing
U2 Initial Services	U2.1	Tactical Geo-fencing
	U2.2	Flight Planning Management
	U2.3	Weather Information
	U2.4	Tracking

Phase	Service	
	U2.5	Monitoring
	U2.6	Drone Aeronautical Information Management
	U2.7	Procedural Interface with ATC
	U2.8	Emergency Management
	U2.9	Strategic De-confliction
U3 Advanced Services	U3.1	Dynamic Geo-fencing
	U3.2	Collaborative Interface with ATC
	U3.3	Tactical De-confliction
	U3.4	Dynamic Capacity Management

1.2. National Stakeholders

The main National Stakeholders involved in ATM in Croatia are the following:

- The Directorate General of Civil Aviation, Electronic Communications and Postal Service of the Ministry of the Sea, Transport and Infrastructure and called DGCA in the document;
- The Croatian Civil Aviation Agency (CCAA);
- Croatia Control Ltd. (hereinafter referred to as the CCL);
- Air, Maritime and Railway Traffic Accident Investigation Agency (hereinafter referred to as the AIA);
- The Ministry of Defence (hereinafter referred to as the MoD).

Other main National Stakeholders in Croatia are the largest Croatian airports. They are owned by the Republic of Croatia (majority owner, 55% stake) and municipal authorities (45% stake is divided between counties, cities and municipalities, as applicable). Zagreb Franjo Tuđman Airport was awarded to the consortium in a 30-year concession.

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

Civil Regulator(s)

General Information

The competent bodies for civil aviation in Croatia are:

a) The Ministry of the Sea, Transport and Infrastructure (MSTI);
b) The Croatian Civil Aviation Agency (CCAA);
c) Air, Maritime and Railway Traffic Accident Investigation Agency (AIA).

Different national entities having regulatory responsibilities in ATM are summarised in the table below. The responsibility of each Stakeholder is further detailed in the following sections.

Activity in ATM:	Organisation responsible	Legal Basis
Rule-making	MSTI CCAA	Air Traffic Act
Safety Oversight	CCAA	Air Traffic Act
Enforcement actions in case of non-compliance with safety regulatory requirements	CCAA	Air Traffic Act
Airspace	National Airspace Management Committee MSTI Ministry of Defence	Air Traffic Act
Economic	CCAA	Air Traffic Act Ordinance on conditions and manner of issuing the Air navigation service provider certificate
Environment	Ministry of environment and energy Croatian Environment Agency CCAA	Environment Protection Act Air Traffic Act
Security	National Civil Aviation Security Committee	Air Traffic Act National Civil Aviation Security Programme National Civil Aviation Security Quality Programme
Accident investigation	Air, Maritime and Railway Traffic Accident Investigation Agency	Air Traffic Act Act on the establishment of the Air, Maritime and Railway Traffic Accident Investigation Agency

a) For Rulemaking the competent authorities are MSTI and CCAA, according to Air Traffic Act. MSTI is responsible for the adoption of secondary legislation and for preparation of draft proposals for laws in the field of civil aviation. CCAA is responsible for preparation of draft proposals for secondary legislation relating to its activities, adopted by the Minister on the basis of the Air Traffic Act, and for issuing binding air safety orders to implement its competencies established by the Act and the regulations adopted on the basis of the Act.

b) For Establishment of Acceptable Safety Levels the competent authorities are the Government of the Republic of Croatia and the Aviation Safety Committee. The Government of the Republic of Croatia, with the aim of achieving an acceptable level of safety in the Republic of Croatia, in accordance with the relevant ICAO documents, adopts the State Aviation Safety Programme based on the proposal of the Aviation Safety Management Board.

c) For environment the competent authorities are Ministry of environment and energy and CCAA. Ministry of environment and energy gives consent to proposed draft ordinances on conditions for design, construction, and marking of airports, on construction and placement of barriers at airport area, on maximum allowed levels of emission during aircraft take-off and landing, on conditions and methods for establishing noise protection areas and construction conditions in those areas. CCAA is responsible for execution of its duties stemming from ordinances, mostly relating to oversight of entities covered by those ordinances and imposing administrative sanctions in case of found non-compliances.

Ministry of the Sea, Transport and Infrastructure (DGCA Croatia)

The Ministry of the Sea, Transport and Infrastructure is competent, among other activities prescribed in the Air Traffic Act, for the overall civil aviation policy of the Republic of Croatia, establishment and development of a national strategy on aviation, ensuring the proper implementation of international aviation agreements concluded by the Republic of Croatia, adoption of secondary legislation as set out in this Act and the international agreements binding on the Republic of Croatia and preparation of draft proposals for laws in the field of civil aviation.

In international relations, organizational unit competent for civil aviation within the Ministry shall have, as "Directorate General for Civil Aviation, Electronic Communications and Postal Services (DGCA)", the competences in civil aviation as delegated by the minister competent for civil aviation; provided, however, that the Minister shall remain overall responsible for ensuring the lawful exercise of those competences.

Organisation of the Directorate General of Civil Aviation, Electronic Communications and Postal Services:

The Directorate General of Civil Aviation, Electronic Communications and Post is a public service of the MSTI, organized as an internal administrative organization of the Ministry. It is managed by the Assistant Minister/Director General.

The Act on the State Administration System ("Official Gazette", issue no. 150/11, 12/13, 93/16 and 104/16) (Zakon o sustavu državne uprave) sets down the state administration responsibilities as follows: direct implementation of acts, establishment of rules for acts implementation, conducting of administration surveillance as well as other administration and professional responsibilities and Government Decision: Regulation Concerning the Internal Structure of the MSTI ("Official Gazette" issue no. 27/12, 36/12, 79/13 and 65/15, 76/17 and 116/17) (Uredba o unutarnjem ustrojstvu Ministarstva pomorstva, prometa i infrastrukture).

With this regulation the internal structure of the MSTI, the names of administrative organizations that are part of the Ministry and the names of internal structural units as well as their domain, the administrative methods, approximate number of administrative officials and employees have all been established.

The Ministry is in particular competent for the following activities in the field of civil aviation:

1. the overall civil aviation policy of the Republic of Croatia;
2. establishment of a national strategy on aviation development;
3. representation of the Republic of Croatia at international civil aviation organisations and organizations in the framework of the ECAA Agreement;
4. conclusion of bilateral and multilateral aviation agreements (preparation, negotiation, signature...);
5. to ensure the proper implementation of international aviation agreements concluded by Croatia;
6. matters relating to the establishment and operation of scheduled air services ensuing from bilateral and multilateral aviation agreements;
7. the adoption of secondary legislation as set out in the Air Traffic Act and the international agreements binding on the Republic of Croatia;
8. to prepare draft proposals for laws in the field of civil aviation;
9. to perform administrative monitoring of the Agency and Agency for investigation;
10. high level decisions on Air Navigation matters except safety;
11. to conduct proceedings on concession arrangements for aerodromes in accordance with the Act on Concessions and international agreements binding on the Republic of Croatia;
12. to decide on the status of the airports and to appoint if necessary the independent slot allocation co-ordinator;
13. performing proceedings on offences determined by the Air Traffic Act;
14. other activities as prescribed in the Air Traffic Act.

Further to the institutional separation, the DGCA at the Ministry continues to carry out 3 functions:

1. Legal affairs
2. International affairs
3. Economic regulation

An organisation chart representing all DGCA's sectors in the Annexes of this document.

National Committees

The Air Traffic Act ("Official Gazzette" issue no. 69/09, 84/11, 54/13, 127/13 and 92/14) provides for the establishment of four different National Committees:

- National Aviation Security Committee;
- National Airspace Management Committee;
- Aviation Safety Committee;
- National Facilitation Committee.

The Ministry's site: http://www.mmpi.hr

Annual Report published:	https://mmpi.gov.hr/	

Croatian Civil Aviation Agency (CCAA)

Croatian Civil Aviation Agency (hereinafter: CCAA) has been established in 2009 and works separately and independently from the Ministry of Transport.

The CCAA is a fully independent body with public authority set up in June 2009 in accordance with the Air Traffic Act (OG 69/09, 84/11, 54/13, 127/13, 92/14).

The CCAA is in particular responsible for:

- preparation of draft proposals for secondary legislation relating to the Agency's activities, adopted by the Minister on the basis of this Act;
- monitoring of implementation of State Aviation Safety Programme
- certification and issuing licences to air carriers;
- certification of aircraft including the necessary inspections of technical and operational conditions of the aircraft;
- the civil aircraft registry of the Republic of Croatia and any other civil aviation registry;
- licensing and rating of civil aeronautical personnel;
- certification of civil aerodromes;
- collection of data on civil aeronautical personnel and aircraft and its distribution;
- collection, analysis and dissemination of statistics, reports, documents and other data on aviation technology, operation of aircraft, aerodromes and aeronautical personnel to the extent that this is of relevance for performing the functions under this Act;
- oversight of the technical and operational conditions and economic fitness of aviation undertakings of the Republic of Croatia and aviation training facilities;
- oversight of security in civil aviation;
- matters relating to environment protection concerning air traffic;
- oversight and inspection of the air traffic safety as provided for in this Act;
- other functions as stipulated in this Act and regulations adopted on the basis of this Act.

The same provision of the Air Traffic Act also states that CCAA acts as a National Supervisory Authority, to which end a separate entity has been established within CCAA.

The Statute describes role and responsibilities of the CCAA as well as the important provisions for its governance and management.

The remit of the NSA is in line with applicable provisions of EU acquis.

CCAA Board is the high-level governing body of the CCAA. It consists of 5 independent and recognized, competent officials with various backgrounds.

CCAA reports directly to the Government of Croatia - primarily through its duty to provide the Annual Report.

Within the scope of its activities the Agency, and in close cooperation with the Ministry, CCAA participates in international activities, including the negotiation processes leading to the conclusion of international air service agreements, meetings in International Civil Aviation Organisation (ICAO) and other international organisations and institutions in civil aviation, and participates in the working of their professional bodies and working groups, and co-operates with international bodies responsible for civil air transport.

The set-up of the CCAA was done in a seamless transition with very limited impact on the DGCA/NSA business.

The Agency is a legal entity with public authority having its headquarters in Zagreb. The Republic of Croatia is the founder of the Agency. By public authority, the Agency carries out the activities laid down in the Air Traffic Act as activities in the interest of the Republic of Croatia.

The Agency is autonomous in the performance of activities within its competence and is responsible to the Government.

Remarks on Safety Oversight - The Air Traffic Law (OG 69/09, 84/11, 54/13, 127/13, 92/14) in the Articles 5 - Competences of Civil Aviation Agency reads:

“The CCAA is acting as the National Supervisory Authority (NSA), and performs tasks assigned under the relevant EU acquis. These tasks include establishment and oversight of Performance plan in accordance with Single European Sky regulations, the certification of air navigation service providers, the continuing oversight of the provision of air navigation services with the purpose of ensuring continuing compliance with the common requirements, as well as for other matters in accordance with the regulations adopted on the basis of this Act and relevant EU acquis. The Republic of Croatia shall notify the European Commission the name and address of the NSA, as well as changes thereto, and of the measures taken to ensure compliance with paragraph 9 of this Article”.

Article 96. of the Air Traffic Act:

(1) “Air navigation services shall be provided within flight information region of the Republic of Croatia in accordance with the provisions of this Act, regulations adopted on the basis on this Act and in accordance with relevant EU acquis subject to the conditions and modalities set out in the international agreements binding on the Republic of Croatia.”

(5) To a legal person submitting evidence of compliance with the requirements referred to in paragraph 1 of this Article the Agency shall issue an Air Navigation Service Provider Certificate.

(6) For the provision of certain air navigation services the Ministry shall, with consent from the minister competent for defence, designate an air navigation service provider, in accordance with the regulation from paragraph 7. of this Article.

(7) The requirements and procedure for the issuing of an Air Navigation Service Provider Certificate and the designation of an air navigation service provider shall be performed according to a regulation adopted on the basis of this Act and in accordance with relevant EU acquis.

(8) A certified air navigation service provider shall at any time comply with the applicable common requirements or with the conditions attached to the Certificate and shall notify the Agency on planned changes to its provision of air navigation services, which can influence compliance with the applicable common requirements or with the conditions attached to the Certificate.

(9) If it is ascertained that certified air navigation service provider no longer complies with the applicable common requirements or with the conditions attached to the Certificate, the Agency shall request that air navigation service provider takes corrective measures, set the deadline for their implementation, monitor implementation and take necessary measures if needed, in a way determined by a regulation adopted on the basis of this Act in accordance with relevant EU acquis.

(10) A statutory fee shall be paid for the auditing process to confirm compliance with the requirements for the issuing of an Air Navigation Service Provider Certificate and for the continuing oversight over the service provider concerned to ensure continuous compliance with these requirements.

According with the Letter ref 303-03/08-01/484 and 530-09/08-01 dated 17.11.2008, the Ministry of the Sea, Transport and Infrastructure was nominated as the Croatian NSA (i.e. Civil Aviation Authority and Civil Aviation Inspection Department).

According to Article 5 of Air Traffic Act (OG 69/09, 84/11, 54/13, 127/13), on 10th April 2009.with Letter 303-03/08-01/484 and 530-09/09-04, the Republic of Croatia has notified the European Commission the name and address of the NSA. Croatian NSA is Croatian Civil Aviation Agency (CCAA).

According the Article 96(6), Ordinance on the conditions and means of providing air navigation services (OG 81/08 and OG 115/09-2, now OG 49/13) was issued. Based on this Ordinance, the NSA issued a certificate to Croatia Control Ltd. on 31st March 2009 for ATS, CNS, MET and AIS services.

The requirements of EC Commission Regulation (EU) 1034/2011 on the subject of Safety Directives have been transposed through Ordinance on the conditions and means of providing air navigation services (OG 81/08 and OG 138/2009, now OG 49/13).

NSA (CCAA) is continuously making oversight of certified service provider according to ANS Oversight Programme.

Annual Report published:	Y	http://www.ccaa.hr/download/documents/read/godisnje-izvjesce-o-radu-hrvatske-agencije-za-civilno-zrakoplovstvo-za-2018-_4163

Air, Maritime and Railway Traffic Accident Investigation Agency (AIA)

Air, Maritime and Railway Traffic Accident Investigation Agency (hereinafter referred as: AIA) on the basis of public authority, as activities of interest for the Republic of Croatia conducts:

- investigation of aircraft accident and serious incidents,

- investigation of maritime accidents and incidents,

- investigation of serious accidents and incidents in railway traffic.

In the framework of activities, the AIA performs the following tasks:

1. Investigates aircraft accidents, serious incidents and occurrences;
2. Gives safety recommendations to improve air traffic safety;
3. Manages the National database;
4. Submits data on occurrences from the National database to the European Commission Central Database;
5. Exchanges data from its National Database with other investigative bodies under the condition of data confidentiality;
6. Provides expert assistance to competent investigative bodies of the Republic of Croatia;
7. Cooperates with other aircraft accident investigation bodies members of the International Civil Aviation Organization (ICAO);
8. Publishes the results of the investigation while respecting the principles of confidentiality;
9. Creates a list of experts for investigation of aircraft accidents.

Technical Investigation

The AIA conducts investigations for Civil Aviation aircraft accidents and serious incidents, whereas an occurrence shall be investigated by the AIA if it should assess that the investigation would result in lessons for air traffic safety. AIA is functionally and organisationally independent from all other Croatian aviation entities and from all natural and legal persons possibly having a conflict of interests.

AIA web site: www.ain.hr

Collection, Evaluation & Processing of Data

The AIA is competent for management and regular updating of National Database on aircraft occurrences, accidents and serious incidents and for exchange and passing of data incorporated in it. In order to carry out this function, AIA established ECCAIRS tools. Data from the National database are submitted to the European Commission Joint Research Center.

Civil-Military Accidents/Incidents

If the accident or serious incident involve civil and military aircraft, the investigation of accident or serious incident are carried out by AIA with the participation of representatives of the MoD appointed by the minister of defence.

Croatia Control Ltd. (CCL), Croatian Air Navigation Service Provider

Services provided

Governance:	Independent Business entity	**Ownership:**	State owned
Services provided	**Y/N**	**Comment**	
ATC en-route	Y		
ATC approach	Y		
ATC Aerodrome(s)	Y		
AIS	Y		
CNS	Y		
MET	Y		
ATCO training	Y		
Others	Y	CCL is responsible for service provision to Military flights	
Additional information:			
Provision of services in other State(s):	Y	Bosnia and Herzegovina	
Annual Report published:	Y	https://www.crocontrol.hr/UserDocsImages/OSJ/Publikacije/CCL_Annual_Report_2018.pdf	

Croatia Control Ltd web site: http://www.crocontrol.hr

CCL organisational chart is given in Annexes.

ATC systems in use

Main ANSP part of any technology alliance[1]	Y	COOPANS

FDPS

Specify the manufacturer of the ATC system currently in use:	Thales TopSky ATM for Main ATM system (CroATMS_C)
Upgrade[2] of the ATC system is performed or planned?	Yearly at Q1
Replacement of the ATC system by the new one is planned?	Yes
ATC Unit	Co-flight or similar, after 2023

SDPS

Specify the manufacturer of the ATC system currently in use:	EUROCONTROL ARTAS
Upgrade of the ATC system is performed or planned?	regularly
Replacement of the ATC system by the new one is planned?	no
ATC Unit	EUROCONTROL ARTAS

The main ATM system is being developed through COOPANS (COOPeration between ANS providers) partnership together with Austrocontrol, IAA, LFV, Naviair and NAV Portugal. With unified ATM system in 6 ANSPs, COOPANS members are significantly optimizing life cycle cost through harmonization of functions and procedures and with a joint investment. Service provision is secured by main and back-up ATM system (ARES). In case of main and back-up ATM system failure, completely independent emergency ATM system (SkyPad) is used for "clear the sky" procedures.

Continuous development and upgrade of main and back-up ATM system will cover software functionality and hardware enhancements all that might be required by the regulators and operational requirements to achieve the SES goals, and to further increase safety and capacity.

The VCCS provides CCL with the ability to control and manage all voice communications at the ACC and the airport sites as well as managing the radio equipment offsite. It includes also an emergency/backup solution for the ACC and regional airports (Split, Zadar, Dubrovnik and Pula).

To improve coverage area and increase capacity (number of frequencies) introduction of new radio sites is constantly planned. The upgrade of existing VHF and UHF radio network will be compliant with the Regulation (EU) 1079/2012, and will also enable future seamless migration to VoIP technology. CCL is connected to PENS and X-bone (FAB CE regional IP network) G-G networks. Some modernization will be needed to support Air/Ground Data-Link Service as a means to comply with the Regulation (EC) 29/2009.

Existing ground-based surveillance data system consists of data from one own combined PSR+MSSR Mode-S radar (near Zagreb airport), three own secondary Mode-S radars and three secondary Mode-S radars from Croatian military surveillance system.

Because own infrastructure does not ensure the sufficient level of radar coverage in some volumes some new systems deployment (the new MSSR Mode-S station and TMA ADS-B system) is planned to fully enable at least dual coverage throughout the FIR airspace and better data resolution, enhancing both performance and safety markers. This is compliant with Regulation (EU) 1207/2011.

AMC Croatia became fully operational in April 2014. Tools that are available are Lara and CHMI, and a development of a local real time ASM booking tool available to all stakeholders on a dedicated live AMC Portal.

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

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

ATFCM function is supported 24/7 by Zagreb FMP, equipped to the same common ECAC standards (CHMI and other NM applications). Dynamic Demand-Capacity Balancing tools are being developed at FAB CE level, with STAM Phase 1 implemented among FAB CE states in April 2017.

AIS uses an EAD system, which is aligned with EU regulatory requirements on a regular basis, through a controlled "release" once every year. A local database, which will serve as a connector between the data originators and AIS, is under process of deployment.

A state PBN implementation plan is being developed by a group represented by each stakeholder. PRNAV and RNAV-GNSS procedures are completed for the main airport in Croatia (LDZA), and the others are in the process. All procedures are validated first on the ground, and later through a dedicated flight check. Safety assessments are done for each implementation, and are delivered to the NSA for approval.

Airports

General information

Airport authorities are functionally and organizationally independent from civil aviation authorities. There is no centralised management on all airports in Croatia. According to Law on Airports, ownership on airports is shared among state, counties and cities.

Franjo Tuđman Airport (Zagreb)

Franjo Tuđman Airport in Zagreb is the main national airport. It is also the biggest and main international airport in the country whose traffic activity is predominantly based on scheduled traffic throughout the year. The airport is managed by the consortium in a 30-year concession.

Other Airports in the Republic of Croatia

Other international airports in Croatia are Pula, Split, Dubrovnik, Rijeka, Zadar, Osijek, Brač and Mali Lošinj. At these Airports, ATC service provision (TWR and APP) is provided by CCL.

Airport(s) covered by the LSSIP

Referring to the List of Airports in the European ATM Master Plan Level 3 Implementation Plan Edition 2019 – Annex 2, it is up to the individual State to decide which additional airports will be reported through LSSIP for those Objectives.

Therefore, the following airports are covered in this LSSIP: **Zagreb, Franjo Tuđman Airport** (LDZA, ZAG).

As stated in the previous section, in Croatia, the military aviation is located on combined – civil/military airports (Zagreb, Pula, and Zadar).

AIRPORT	ICAO Code	IATA Code	IATA Level
Brač	**LDSB**	**BWK**	**1**
Dubrovnik	**LDDU**	**DBV**	**1** **2 summer season**
Mali Lošinj	**LDLO**	**LSZ**	**1**
Osijek/KLISA	**LDOS**	**OSI**	**1**
Pula	**LDPL**	**PUY**	**1**
Rijeka	**LDRI**	**RJK**	**1**
Split	**LDSP**	**SPU**	**1** **2 summer season**
Zadar	**LDZD**	**ZAD**	**1** **2 summer season**
Franjo Tuđman Airport	**LDZA**	**ZAG**	**1** **2 summer season**

The list of International Airports in Croatia

Split Airport (LDSP) is declared as IATA Level 2 airport (schedule-facilitated airport) on weekends during the summer months. In 2015. Dubrovnik and Zagreb airports have also declared IATA Level 2 for the summer as the benefits of coordinating airport resources with the users becomes obvious during the busy summer months. In 2019, this also became true for Zadar Airport. Traffic demand on these airports has reached the available airport capacities on weekends, and prior coordination is required for an arrival operation during summer.

Military Authorities

The regulation (Aviation Act and Rules of the Air) dealing with the military aviation are prepared and agreed with the participation of the Ministry of Defence (MoD).

According to the Law on Defence (Official Gazette, No 37/2002, 76/2007, 75/2015) (Zakon o izmjenama i dopunama zakona o obrani) Minister of Defence is responsible to regulate Military Aviation (MIL OAT Rules, MIL Aircraft Certification, MIL Air crew and maintenance licensing and MIL Aerodromes - Helipads certification).

Military Aviation Authority of Croatia was established in 2007 to implement above mentioned tasks according to the Law on Defence (Official Gazette, No 37/2002, 76/2007, 75/2015) (Zakon o izmjenama i dopunama zakona o obrani) and Government Decision: Regulation Concerning the Internal Structure of the MoD ("Official Gazette" No 2/17) (Uredba o unutarnjem ustrojstvu Ministarstva obrane).

CCL is responsible for the provision of Air Navigation Services in Croatia and for controlling all military flights.

The Flight Safety Department of the Croatian Air Forces supervises the implementation of regulation. General Staff Special Unit acts as UAV operator and Croatian Air Force acts as Aircraft operator and airspace user (tactical: Mig-21, training: Pilatus PC-9, Bell 206, Zlin 242 L and Transport: An-32B, Mi-8 MTV).

ATC, FIS, AIS, MET, COMM and NAV services to military traffic are provided by CCL.

SAR service is provided by Military. Air defence units are responsible for air defence missions within TSA.

In Croatia, the military aviation is located on combined – civil/military airports (Zagreb, Pula, and Zadar).

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

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: State Law.		Level of such legal provision: N/A	
Authority signing such legal provision: Minister of Defence in cooperation with the MSTI		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	Organisation of military ATS for GAT	N/A
OAT/GAT Co-ordination	Y	OAT/GAT Co-ordination	N/A
ATCO Training	N	ATCO Training	N/A
ATCO Licensing	N	ATCO Licensing	N/A
ANSP Certification	N	ANSP Certification	N/A
ANSP Supervision	N	ANSP Supervision	N/A
Aircrew Training	Y	ESARR applicability	N/A
Aircrew Licensing	Y		
Additional Information: N/A		Additional Information: N/A	
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	N	National AIP	N/A
National Military AIP	N	National Military AIP	N/A
EUROCONTROL eAIP	N	EUROCONTROL eAIP	N/A
Other:	N/A	Other:	N/A

Oversight

OAT	GAT
National oversight body for OAT: "Samostalna Služba Za Vojni Zračni i Pomorski Promet" – Military Aviation and Maritime Authority only for above provisions with a "Y".	NSA (as per SES reg. 550/2004) for GAT services provided by the military: N/A
Additional information: N/A	Additional information: N/A

Service Provision role

OAT			GAT	
Services Provided:			Services Provided:	
En-Route		CCL	En-Route	CCL
Approach/TMA		CCL	Approach/TMA	CCL
Airfield/TWR/GND		CCL	Airfield/TWR/GND	CCL
AIS		CCL	AIS	CCL
MET		CCL	MET	CCL
SAR		MoD	SAR	MoD
TSA/TRA monitoring		CCL/Air Defence	FIS	CCL
Other:		N/A	Other:	N/A
Additional Information: N/A			Additional Information: N/A	

Military ANSP providing GAT services SES certified?	N/A	If YES, since:	N/A	Duration of the Certificate:	N/A
Certificate issued by:	N/A		If NO, is this fact reported to the EC in accordance with SES regulations?		N/A
Additional Information: N/A					

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

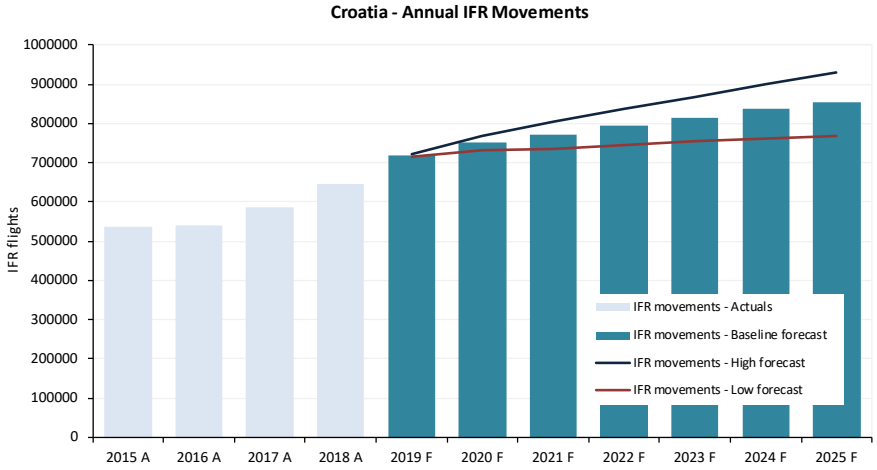
If Military fly GAT-IFR inside controlled airspace, specify existing special arrangements:								
No special arrangements					Exemption from Route Charges	Y		
Exemption from flow and capacity (ATFCM) measures	Y				Provision of ATC in UHF			
CNS exemptions:	RVSM	Y	8.33	N	Mode S	N	ACAS	N
Others:	N/A							

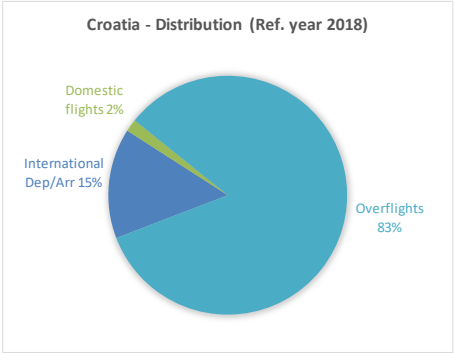
Flexible Use of Airspace (FUA)

Military in HR applies FUA requirements as specified in the Regulation No 2150/2005: Y
FUA Level 1 implemented: Y Implemented through a national high-level body for ASM (National Airspace Management Committee)
FUA Level 2 implemented: YFUA Level 2 was implemented in April 2014, with the start of operations of AMC Croatia
FUA Level 3 implemented: Y Tactical coordination between ATCO and MIL exists in practice

2. Traffic and Capacity

2.1. Evolution of traffic in Croatia





A = Actual

F = Forecast

EUROCONTROL Seven-Year Forecast (Autumn 2019)											
IFR flights yearly growth		2016 A	2017 A	2018 A	2019 F	2020 F	2021 F	2022 F	2023 F	2024 F	2025 F
Croatia	H				11.4%	6.4%	4.9%	4.1%	3.7%	3.8%	3.3%
	B	0.9%	8.7%	10.2%	11.0%	4.5%	2.8%	2.9%	2.6%	2.7%	2.0%
	L				10.4%	2.4%	0.6%	1.2%	1.1%	1.2%	0.6%
ECAC	B	2.8%	4.0%	3.8%	1.1%	2.3%	1.9%	2.2%	1.8%	1.9%	1.4%

2019

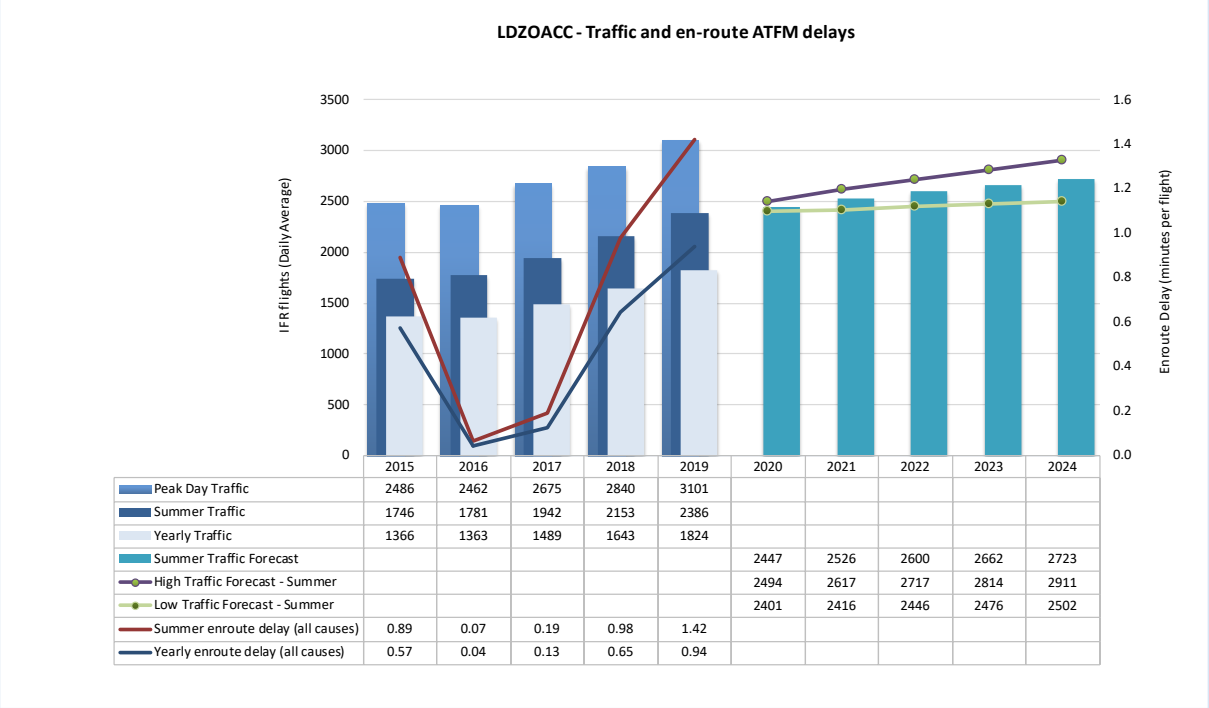
Traffic in Croatia increased by 10.6% in 2019 compared to 2018.

2020-2024

The EUROCONTROL Seven-Year Forecast predicts an average annual increase between 1.2% and 4.3% during the planning cycle, with a baseline growth of 2.9%.

2.2. ACC Zagreb

Traffic and en-route ATFM delays 2015-2024



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Peak Day Traffic	2486	2462	2675	2840	3101					
Summer Traffic	1746	1781	1942	2153	2386					
Yearly Traffic	1366	1363	1489	1643	1824					
Summer Traffic Forecast						2447	2526	2600	2662	2723
High Traffic Forecast - Summer						2494	2617	2717	2814	2911
Low Traffic Forecast - Summer						2401	2416	2446	2476	2502
Summer enroute delay (all causes)	0.89	0.07	0.19	0.98	1.42					
Yearly enroute delay (all causes)	0.57	0.04	0.13	0.65	0.94					

Performance summer 2019

Zagreb ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.8% B: 4.7% L: 2.6%	+13%	+11.0%	0.94	0.24			
Summer			+10.8%	1.42		160 (+3%)	166 (+7%)	Yes

Summer 2019 performance assessment

The average en-route delay per flight increased from 0.98 minutes per flight in Summer 2018 to 1.42 minutes per flight in Summer 2019.

59% of the Summer delays were for the reason ATC Capacity, 37% for Weather and 3% for ATC Staffing.

The capacity baseline was measured using ACCESS at 166. During the measured period, the average peak 1 hour demand was 178, and the average peak 3 hour demand was 163.

Operational actions	Achieved	Comments
Upgrade and extension of AMC Portal	Yes	
Integration of TMAs in the network through the implementation of the FABCE concept of seamless operations for the TMAs within Zagreb FIR	Yes	
Implementation of PBN procedures in TMA airspace	Yes	
Enhanced ATFM techniques (STAM Phase II)	Yes	
Enhanced sectorisation according to the FABCE Airspace Plan	Yes	
Changes of areas of responsibility between Zagreb and BH ACCs (Phase 2 BHANSA)	Yes	Preparations finalised to the cutover on 05 Dec. '19
Full lateral and vertical implementation of Central sector below FL355	No	Postponed for Feb. 2020
Optimization of manpower planning	Yes	
Additional ATCOs as required (~6 per year)	Yes	
Development of supporting tool for sector configuration management	No	To be implemented in 2020

Re-assessment of sector capacities according to new CAPAN study	Yes	
Improved sector opening times	Yes	
Maximum configuration: 11 sectors	Yes	

Planning Period 2019-2024

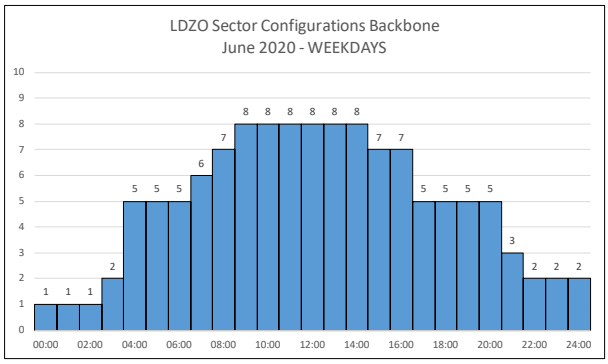
The planning focuses on the summer season to reflect the most demanding period of the year from a capacity perspective. This approach ensures consistency with the previous planning cycles.

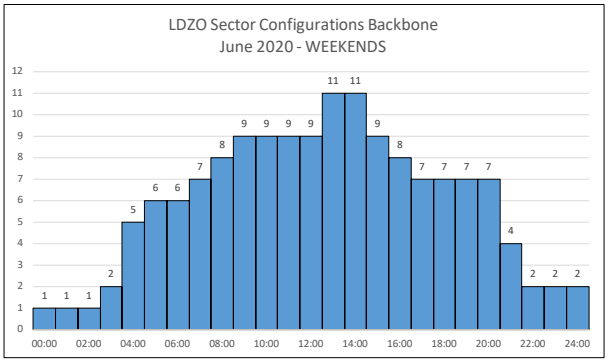
The measures for each year are the measures that will be implemented before the summer season.

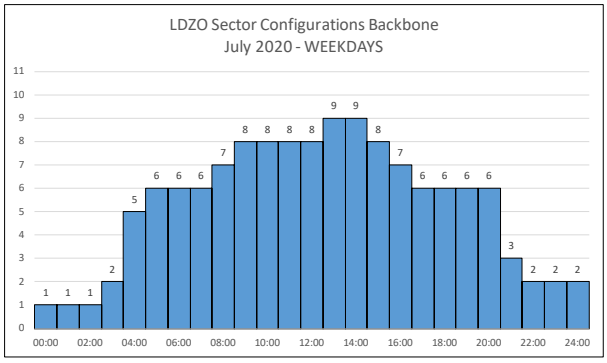
<table>
<tr><th colspan="6">Summer Capacity Plan</th></tr>
<tr><th></th><th>2020</th><th>2021</th><th>2022</th><th>2023</th><th>2024</th></tr>
<tr><td>Free Route Airspace</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="4">Airspace Management
Advanced FUA</td><td>Implementation of FUA restrictions</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td>LARA B2B connection with NM</td></tr>
<tr><td>Integration of MALE system</td></tr>
<tr><td colspan="5">Improvement of CDM process and procedures ASM/ATS/ATFCM</td></tr>
<tr><td>Airport & TMA Network Integration</td><td colspan="4">Upgrade and extension of AMC portal</td></tr>
<tr><td></td><td>Redesign of Adria TMA airspace</td><td></td><td></td><td>Multi-use facility in Zadar with enhanced APP service</td></tr>
<tr><td>Cooperative Traffic Management</td><td></td><td colspan="2">Enhanced ATFM techniques (STAM Phase II</td><td></td><td></td></tr>
<tr><td>Airspace</td><td>Full lateral and vertical implementation of Central sector</td><td></td><td>Implementation of Adria TMA airspace</td><td></td><td></td></tr>
<tr><td>Procedures</td><td>New ops procedures in line with implementation of Central sector</td><td></td><td>New ops procedures in line with implementation of Adria TMA airspace</td><td></td><td></td></tr>
<tr><td rowspan="3">Staffing</td><td colspan="5">Optimization of manpower planning</td></tr>
<tr><td colspan="5">Additional ATCOs as required (No. per year below)</td></tr>
<tr><td>9</td><td>9</td><td>11</td><td>6</td><td>7</td></tr>
<tr><td rowspan="3">Technical</td><td></td><td>COOPANS FRA package upgrade</td><td rowspan="2">Installation of a national Wide Area Multilateration (WAM) system</td><td rowspan="2"></td><td rowspan="2">Multi-use facility in Zadar- extended ACC (contingency)</td></tr>
<tr><td colspan="2">Supporting tool for sector configuration management</td></tr>
<tr><td colspan="5">Continuous ATM system upgrades</td></tr>
<tr><td>Capacity</td><td>New opening scheme according to implementation of Central sector</td><td></td><td>New opening scheme according to implementation of Adria TMA airspace
Re-assessment of sector capacities according to implementation of Adria TMA airspace
Supporting tool for complexity management</td><td></td><td></td></tr>
<tr><td>Significant Events</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

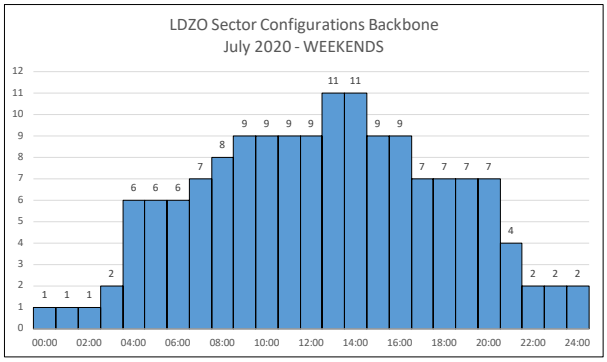
	2020	2021	2022	2023	2024
Max sectors	12	12	12	12	12
Planned Annual Capacity Increase	7%	5%	7%	3%	4%
Reference profile Annual % Increase	25%	3%	3%	4%	3%
Current Routes Profile % Increase	13%	4%	4%	3%	2%
Difference Capacity Plan v. Reference Profile	-14,4%	-12,6%	-9,5%	-10,4%	-9,3%
Difference Capacity Plan v. Current routes Profile	-4,8%	-4,1%	-1,0%	-1,4%	0,0%
Annual Reference Value (min)	0.36	0.36	0.25	0.15	0.15
Additional information					

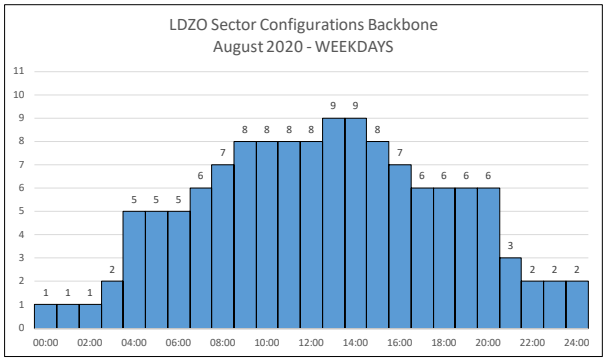
An outline of available sector configuration for a typical weekday and a weekend day for the summer months 2020 (all times UTC)

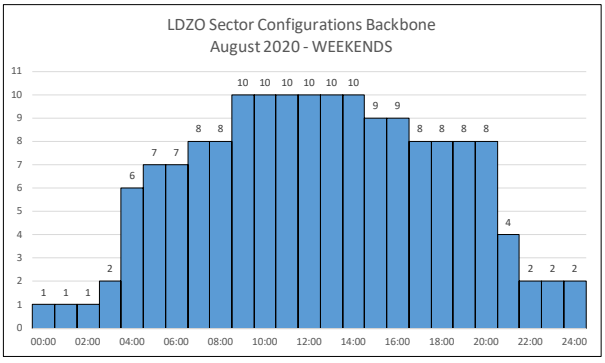


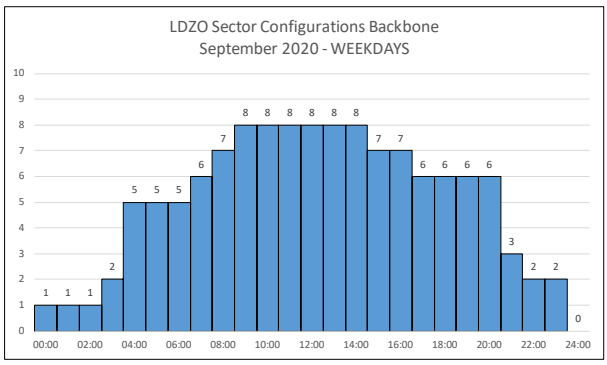


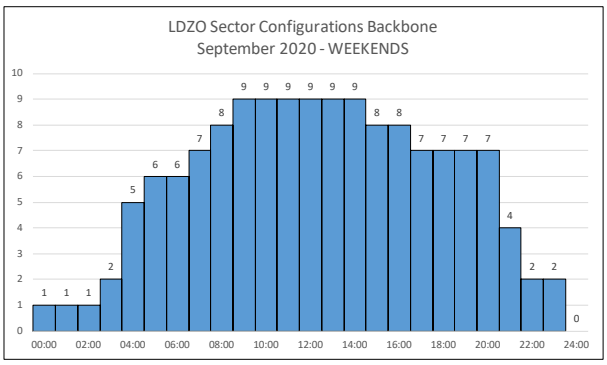


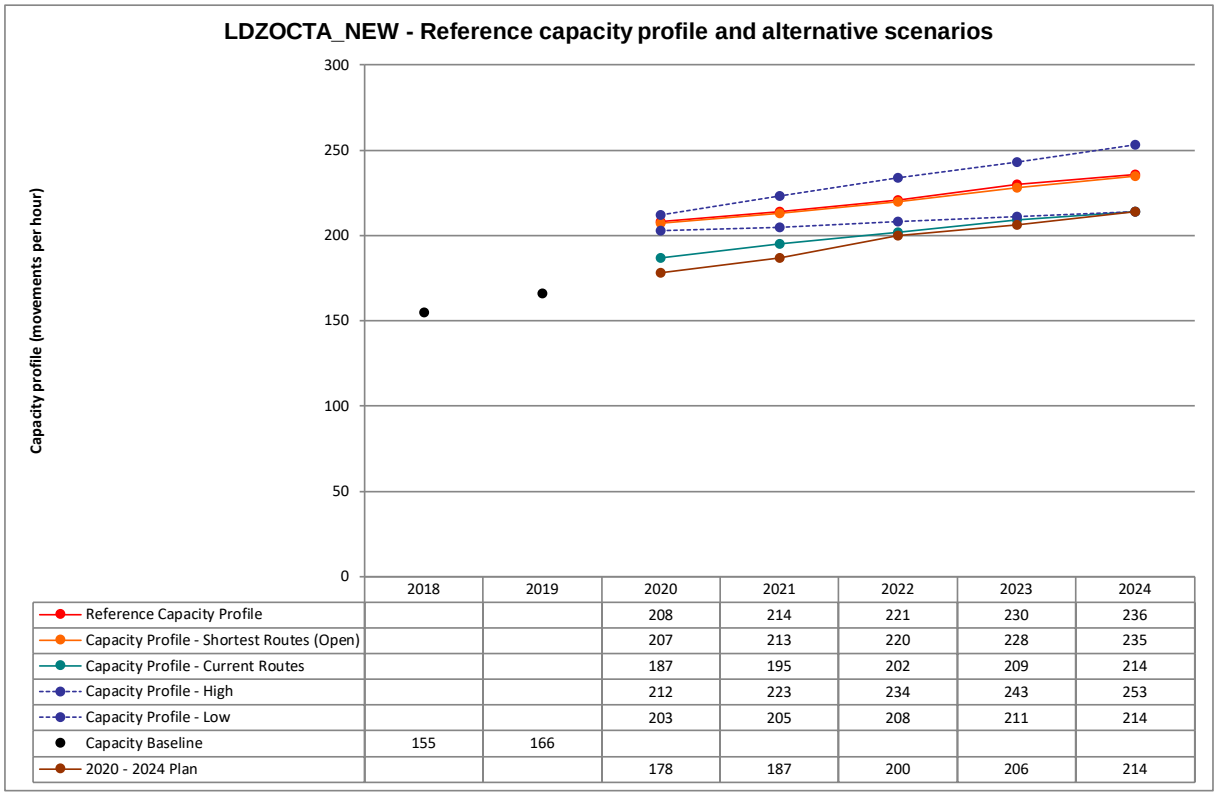












	2018	2019	2020	2021	2022	2023	2024
Reference Capacity Profile			208	214	221	230	236
Capacity Profile - Shortest Routes (Open)			207	213	220	228	235
Capacity Profile - Current Routes			187	195	202	209	214
Capacity Profile - High			212	223	234	243	253
Capacity Profile - Low			203	205	208	211	214
Capacity Baseline	155	166					
2020 - 2024 Plan			178	187	200	206	214

2020-2024 Planning Period Outlook
Even though continuous improvements are planned, a potential capacity gap could be expected during the planning period depending on the actual evolution of the traffic distribution over the current routes.

3. Implementation Projects

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

3.1. National projects

Name of project:	Organisation(s):	Schedule:	Status:	Links:
ATM System Upgrade	CCL Service Provider (HR)	-	active	L3: ATC02.5, ATC02.6, ATC02.7, ATC07.1, ATC12.1, ATC15.1, ATC16, ATC17
AWOS/MET Systems Modernization and Replacement Project	CCL Service Provider (HR)	-	active	-
Ground-based Surveillance Systems Upgrade	CCL Service Provider (HR)	-	active	L3: ITY-SPI
NAV Systems Modernization and Replacement Project	CCL Service Provider (HR)	-	active	L3: NAV03.1, NAV10
Reconstruction of Old Buildings	CCL Service Provider (HR)	-	active	-
VARP - VoIP ATC Radio Project (2015_051_AF3)	CCL Service Provider (HR)	15/02/2016 - 05/11/2020	-	DP: 2015_051_AF3
VOICE-COM Systems Modernization and Replacement Project	CCL Service Provider (HR)	-	active	L3: COM11, ITY-AGVCS2
Zadar Facility	CCL Service Provider (HR)		planned	

3.2. FAB projects

Name of project:	Organisation(s):	Schedule:	Status:	Links:
DEVOPS: FABCE Development of Operational Performance and ATM Strategies (previously Project 1) (DEVOPS)	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Project 1: Start 3.1.2011, End: Continuous	FAB CE FRA Study was completed in 2017 Other activities described below are ongoing	L3: AOM21.2 DP: 102AF3 Free route airspace from the Black Forest to the Black Sea RP2 PP: FAB CE FRA Project (described under NSP actions 'FAB CE Airspace and route structure planning' and 'Free Route Airspace')
Navigation infrastructure optimization project	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Start: April 2018, End: April 2019	On-going	-

3.3. Multinational projects

Name of project:	Organisation(s):	Schedule:	Status:	Links:
Harmonisation of Technical ATM Platform in 5 ANSP including support of free Route Airspace and preparation of PCP program (COOPANS B3.3 , B3.4 and B4.1) (2015_207_AF3_A; 2015_207_AF3_B)	Austrocontrol (AT), CCL Service Provider (HR), IAA-ATS Provider (IE), LFV (SE), Naviair (DK)	01/01/2016 - 31/12/2019	-	DP: 2015_207_AF3_A and 2015_207_AF3_B

4. Cooperation activities

4.1. FAB Co-ordination

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

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

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

There have been a number of important achievements in 2019 focusing on several key areas. The following bullets summarise the most important activities delivering the benefits to airspace users:

- Airspace planning and network development activities focusing on continuous improvements to enable optimum use of airspace, taking into account air traffic flows are the top priority for FAB CE. The FAB CE ANSPs have transformed themselves into a 'FAB CE Airspace Alliance' in 2018 and dedicated a lot of effort to initiate actions to be taken by FAB CE ANSPs in support of the Network Manager's (NM) European Airspace Architecture Study (EAAS) airspace re-configuration programme Transition Plan. The ANSPs agreed a number of important airspace design improvement studies and related technical programmes to ensure airspace users can further optimise their trajectories through FAB CE airspace over the coming years. This triggered also a complete revision of the FAB CE Strategy for 2020-2030 to be fully aligned with the EAAS vision which has been mostly completed in 2019 and is now pending approval. More detailed actions how to achieve the vision are now being elaborated in the new FAB CE High Level Plan.
- FAB CE has established a Task Force to study further areas of regional cooperation with the aim of establishing an airspace design optimized for all airspace users aligned with the EAAS activities. FAB CE is fully prepared to cooperate with the Network Manager, supporting the planning and implementation of proposed concepts in a network centric approach and the implementation of Digital European Sky functionality, which was confirmed at the joint meetings with NM under the umbrella of this activity. FAB CE invited the NM to participate directly in the FAB CE Airspace Task Force activities and started to gather all requirements and views on NM roadmap proposals for a major re-sectorisation of FAB CE airspace.
- The FAB CE states, together with their neighbouring partners, are still at the frontline of the Free Route Airspace (FRA) implementation in the region. The NM confirmed at the that FAB CE is the most advanced FAB in terms of FRA deployment and very few elements are missing from the complete deployment of FRA procedures in the FAB CE area. Further organic expansion of FRA through the Introduction of the new sectorisation programme will need to be performed gradually. The completion of the SEE FRA project (South East Europe Free Route Airspace) on November 7, 2019 has opened up 24/7 cross border free route operations across the airspace of Bulgaria, Hungary and Romania. As a future step, Slovakia (as a part of SEEN FRA project - South East Europe Night Free Route Airspace together with Bulgaria, Hungary and Romania), will assess the opportunities to join the SEE FRA airspace as 24/7 free route operations are already implemented within Slovakian airspace.

To enable the full benefits of FRA implementation the FAB CE ANSPs agreed to start work on the implementation plan for the merger of the current SEE(N) FRA and SECSI FRA areas to enable FAB CE-wide seamless and traffic flow-oriented FRA area. Full FRA coverage in FAB CE will be achieved following the implementation in 2021 by ANS Czech Republic of FRA in the Prague flight information region (FIR).

- FAB CE ANSPs have completed Phase I of an activity to develop a joint contingency concept in cooperation with the Network Manager in 2018. Phase I resulted in commonly agreed concept, procedures and technical enablers for the management of short- and medium-term (less than 2 hours) contingency event. FAB CE has now initiated Phase II which will address management of long-term contingency events (beyond 2 hours duration) and will provide for a common coordination platform for coordinating and monitoring the implementation activities of Phase I. Due to the delays in NM coordination the project mobilisation has been however delayed and activities are planned to take place during 2020.
- The NAVAID optimisation project (which will improve interoperability and data-sharing through the optimisation of navigational aid infrastructure, reducing duplication and unnecessary complexity) significantly progressed in 2019. The processes for coordinated NAVAID infrastructure and preventive maintenance planning and information-sharing where operational dependencies are evident have been developed and are in the process of implementation. The second part of the project is focusing on an analysis of NAVAID infrastructure and coverage - including those of neighbouring countries, is ongoing and is expected to be completed in the first quarter of 2020. The objective is to identify potential areas for improvement, including operational interdependencies and requirements. The third part, which is now completed, focused on solving operational issues – namely, assessing vulnerabilities within the global navigation satellite system (GNSS) network. This will require addressing signal monitoring and interference issues while assessing how free route airspace will influence the requirements for ground-based NAVAIDs in this new era of area navigation operations.
- FAB CE ANSPs finalised their common approach to meeting the requirements for Air Traffic Safety Electronics Personnel (ATSEP) training required by European Commission Regulation 2017/373, the “Air Traffic Management Common Requirements Implementing Regulation” (ATM IR), which comes into effect on 2 January 2020. It has required a considerable level of cooperation among FAB CE partners to develop a common approach to certifying ATSEP competency levels as each ANSP has deployed different technologies, and has different support and training requirements.
- In 2019, FAB CE has identified and initiated a number of cooperation activities in the technical domain. These include a coordinated approach to ADS-B deployment, coordinated monitoring and protection of surveillance frequencies, common approach to datalink monitoring. Several ANSPs participate in the smart procurement of spare parts procurement and equipment suppliers have been contacted to investigate procurement pooling arrangements. The processes established under the previous project on surveillance infrastructure and services optimisation are ongoing. A group of the ANSPs is working on coordinated testing to enable sharing of the experience between ANSPs and allow more efficient planning of VoIP. Other cooperation activities include the assessment of the future FAB CE communication network called X-bone, joint RCOM and NAV workshops and coordination of the cyber security activities.

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.

4.2. Multinational cooperation initiatives

In order to achieve some of the objectives of the ATM MP Level 3, Croatia will have to co-ordinate some of its actions with a number of foreign adjacent ACCs/UAC. The LSSIPD will also help to foster regional coordination with neighbouring states by identifying mutually dependent actions. Croatia constantly promotes and boosts the co-operation in the region through their active participation in several regional initiatives and agreements.

Inter-Centre Agreements on co-ordination procedures, which are in accordance with EUROCONTROL Common Format Letter of Agreement, LoAs, are signed with the following ACCs:

- BUDAPEST,
- VIENNA (for Slovenian MURA Sector),
- LJUBLJANA,
- PADOVA
- BRINDISI
- BELGRADE
- SARAJEVO

EUROCONTROL Revised Convention has been ratified in September 2005 by the Croatian Parliament. The accession protocol of the EU to the EUROCONTROL revised convention has been ratified in December 2016.

The European Common Aviation Area agreement has been ratified by Croatian Parliament in 2008.

The "A6 Alliance" was set up informally in 2007 between the ANSPs interested in accession to SJU membership, i.e.:

- ENAIRE, the Spanish ANSP;
- DFS, the German ANSP;
- DSNA, the French ANSP;
- ENAV, the Italian ANSP;
- NATS, the British ANSP;
- NORACON, (the NORth European and Austrian CONsortium).

After the successful cooperation for accession to SJU membership, it was decided to formalize the A6 Alliance through a Memorandum of Cooperation, which was concluded in June 2011.

The aim of the cooperation and coordination between the 6 parties was to provide customer value through improving the ATM performance at a European Network Level and increasing the pace of delivering the Single European Sky. The main areas of cooperation relate to general fields of mutual interest (e.g. best practice, harmonized strategy etc.), the SESAR R&D phase and SESAR deployment phase.

The governance of the A6 Alliance is ensured by a Steering Board composed of CEOs, which meets on a quarterly basis and is supported by a Strategy Board composed of senior managers. An R&D Working Group and a Deployment Working Group organize co-operation at expert level.

South East Europe Common Sky Initiative (SECSI FRA)

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

The SECSI FRA went operational on the 1st of February2018 offering airspace users significant benefits along the South East Axis, by delivering the shortest route options from Central Europe to South Eastern Europe. The benefits gained through the SECSI FRA are substantial. Based on the shortest route assignment potential savings per day are up to 1.940 NM in flight distance, 285 minutes in flight time, a reduction in fuel consumption of 8,000 kg and a reduction in CO2 emissions of 25.500 kg.

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

South East Europe Night Free Route Airspace (SEEN FRA)

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

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

The A6 Alliance quickly became an important player and a key stakeholder of the Single European Sky and has made significant and remarkable contributions to the SESAR JU, for example on the occasion of the ATM Master Plan Updates (editions 2012 and 2015).

PANSA became then a full member of the A6 Alliance, which also developed a close partnership with the COOPANS[3] ANSPs, and a strong relationship with the A4 (Airlines) and the SDAG (airports) which has resulted in the setup of an industry led consortium (SESAR Deployment Alliance (SDA)). On December 5th 2014, the European Commission tasked the SDA with the setup of the SESAR Deployment Manager, thus strengthening its legitimacy in actively contributing to SESAR deployment.

This partnership between ANSPs led to the formal integration of COOPANS into the A6 Alliance for SESAR Deployment Manager activities in 2015 and, strengthened by its wide membership, the A6 Alliance members has been able since then to provide significant support either in logistics or in human resources to the SESAR Deployment Manager.

The A6 Alliance leads European-wide technical activities validated and co-funded by the EC for their consistency with the SES framework. Through the EC Connecting Europe Facility (CEF) financial program, successive proposals and actions driven by the SESAR Deployment Manager allowed significant contributions to ATM industry implementation projects within SESAR Common Projects deployment priority (currently only Pilot Common Project – PCP).

Moreover, in the context of SESAR2020, the B4[4] Consortium joined the A6 Alliance in 2015 and, after having been associated through an agreement established with A6 Alliance in order to authorize exchanges between their experts in the domain of R&D, Skyguide became by the end 2017 a full member of A6 through an ad-hoc consortium agreement with DSNA.

Finally, the A6 associated for the purpose to ROMATSA (Romanian ANSP) and HungaroControl (Hungarian ANSP) and in cooperation with its A4 and SDAG partners, prepared in 2017 the establishment of SDA consortium into an AISBL[5] that became effective on 01/01/2018, for the benefit of the whole ATM industry and their end customers.

[3] ACG, Croatia Control, IAA, LFV and Naviair together form the COOPANS Alliance Innovative Network

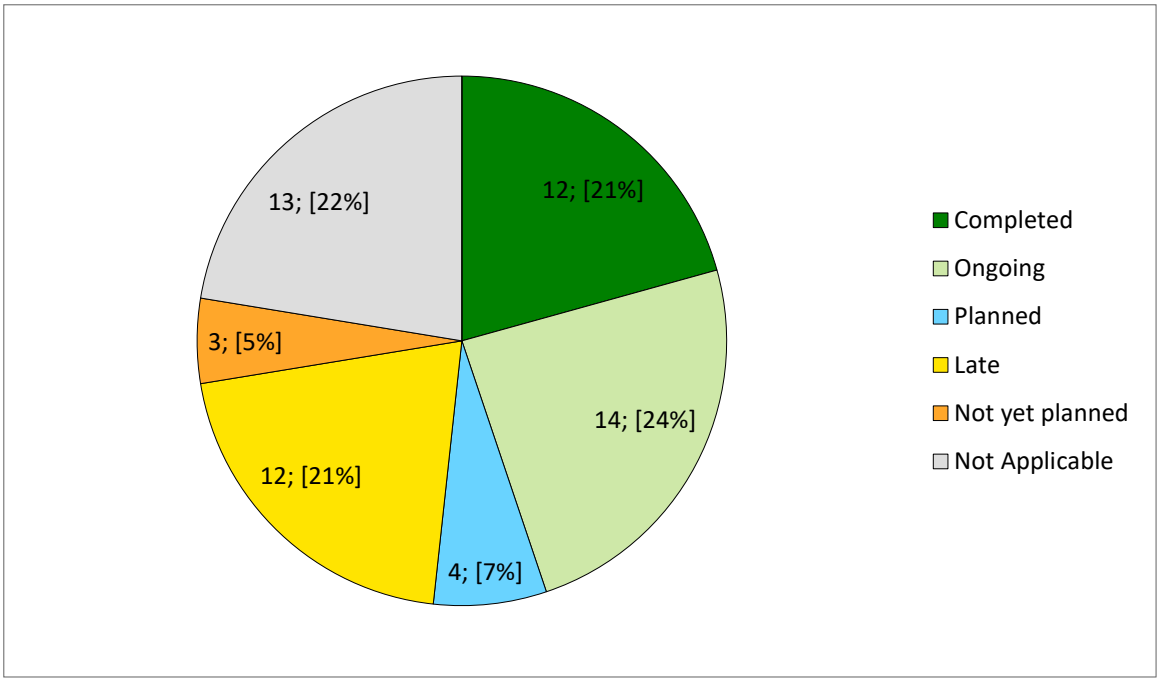
[4] PANSA, ANS CR, LPS SR and Oro Navigacija together form the B4 Consortium

[5] "Association Internationale Sans But Lucratif",», under Belgian law

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).



In the period 2018-2019 we finished following objectives:

COM 10 - Procurement of a new AMHS was in 2012, implementation in 2014. An operational AMHS connection is in place with Vienna, Rome, Eurocontrol, Madrid, Bratislava and Warsaw. Intended operational AMHS foreseen with other partners in EUR/NAT region supporting full meshed topology. Croatia is not a boundary state in EUR region. Some ATMHS Extended functionalities already implemented.

The problems that we had in completing objectives for 2018-2019 were following:

AOP 04.2 - ASMGCS Level 2 planned for implementation before end 2019. (ASMGCS Level 1 is operational since 2018; upgrade to Level 2 is in progress).

AOP 05 - Zagreb intent is to start improving information sharing within existing systems and local specific environment. Zagreb is added in applicability area and CDM/DPI implementation list in the 2018 MP L3 Plan. However, the goal is to have continuous improvement of airport operational efficiency. Since March 28th 2017, all activities have been transferred to new passenger terminal. Transfer to new facilities has brought prerequisites for continuous growth of traffic. In order to meet growth of traffic and optimisation of operational performances, Zagreb International Airport has developed "CDM Implementation Project - Phase 1" as the basis for next steps and agreements towards future implementation of airport CDM.

ATC 12.1 - MTCD and MONA are in operational use since 2005, a probe function exists with no passive resolution support. Passive resolution support is under development. Currently, no plan exist for implementation of TCT.

INF 07 - The Ministry of the Sea, Transport and Infrastructure will establish a working group, which will be tasked to draft the national TOD policy and implementation programme. National TOD policy is in preparation by DGCA. CCAA will draft the plans and procedures to oversight the TOD implementation, based on TOD Policy and framework.

ITY-ADQ - CCAA established a national working group for national implementation of ADQ requirements. Croatia has only partially implemented the requirements set for 1st July 2013 and 1st July 2014. Due to announced Installation of new ANSP Aeronautical Information Management (AIM) System, delay is expected.

Here are also plans for completing objectives due for 2019-2020:

AOM 19.1 - Automated ASM support systems (CIAM, LARA) are fully operational as of December 2017. Local tool for measuring of FUA indicators (FIMS/CroFAST) is in operation from 01.01.2020.

AOM 19.2 - Procedures related to real-time (tactical) ASM level III information exchange are agreed, tested & validated, implementation date is set for 31/12/2021, upon validation of National high level airspace policy body (NPUZP).

AOM 19.3 - LARA V3 supports full rolling ASM/ATFCM process. Objective is linked with one of the FAB CE projects - see details in Chapter 5 of Level 1 document.

ATC 02.8 - APW available and operational. MSAW function available in the system. Operational implementation has been delayed due to false and nuisance alerts which have a safety impact. Waiting deliverable for compliance. Training for the operational use will be performed before implementation. APM implementation plan, as part of MSAW implementation will be developed during 2020.

ATC 15.1 - AMAN is a function in the new ATM system as of 2014. During 2016 a request was received for information exchange mechanisms supporting basic AMAN (AMA message reception), implementation is planned before 2020.

COM 11.1 - Implementation of VoIP in G/G voice communication is planned to be done by Q2/20., whilst implementation of VoIP in A/G voice communication is planned to be done by Q4/21.

ENV 01 - Zagreb International Airport has ISO 14001 certificate and has established system for noise monitoring. Zagreb International Airport will follow necessary steps towards CDO in coordination with CroControl in order to set up appropriate models for performance monitoring and appropriate links with local community. With reference to current CroControl actions - The CDO Operations in Airport Zagreb are considered through PBN implementation process in Zagreb FIR.

FCM 03 - Most SLoA have been completed with implementation of the new ATM system in 02/2014. Validation of automatic sending AFP messages to NM didn't resulted with approval from NM. AFP is sent manually.

ITY-ACID - Mode S airspace is currently declared in Zagreb FIR from FL205 up to FL660. CCL plans to declare Mode S airspace bellow FL205, as well as the relevant airports by the end of 2019. Technical capabilities exists, training of the TMA ATCO and revised safety assessment is foreseen.

ITY-AGVCS2 - All voice communication systems are currently in modernization. The first phase is expected to finish by 03/2015 (90% of equipment) and the second phase by 05/2017 (10% - small airports) All radio equipment will be modernized according to the IR 1079/2012 by 12/2020.

NAV 03.1 – RNAV 1 SID/STAR and changed RNP APCH implementation is planned for Zagreb TMA and Osijek TMA by 4/2019. Other TMA's will follow RNAV 1 SID/STAR and RNP APCH implementation by 12/2019 until 1/2020. LDDU RNP AR RWY 30 was implemented by CCL on December 2018. LDSP RNAV Visual RWY23 was implemented in July 2018 and implementation a similar RNAV VISUAL with RF leg is planned for LDOS RWY 29 and LDDU RWY30 by 12/2020. New flight trials for SID/STAR RNAV will take place during February and September 2019. New RNP APCH implementation is planned for LDRI, LDSB by 12/2020.

NAV 10 - Baro VNAV and LNAV procedures are being designed in accordance with the conclusions of ICAO 37th assembly. RNP Procedures are completed for all airports except for LDLO and LDOS RWY29, to be completed before end 2020.

5.2. Objective Progress per SESAR Key Feature

The Implementation objectives progress charts per Key Feature below show progress only for Implementation Objectives applicable to the State/airport and which are not local objectives.

Note: The detailed table of links between Implementation Objectives and SESAR Key Features is available in Annex C: Implementation Objectives' links with SESAR, ICAO and DP.

Legend:

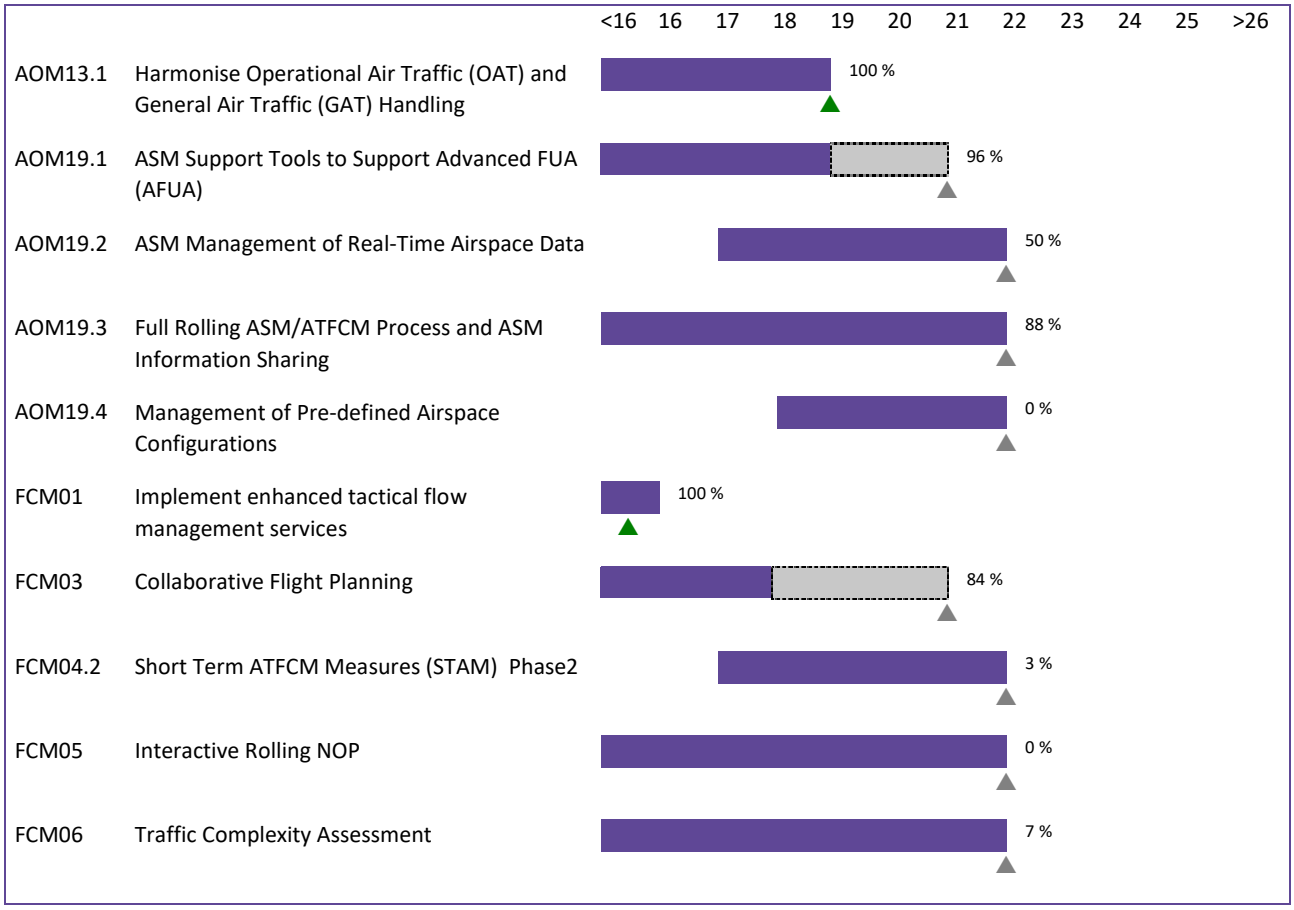
▲ ## % = Expected completion / % Progress

▲ 100% = Objective completed

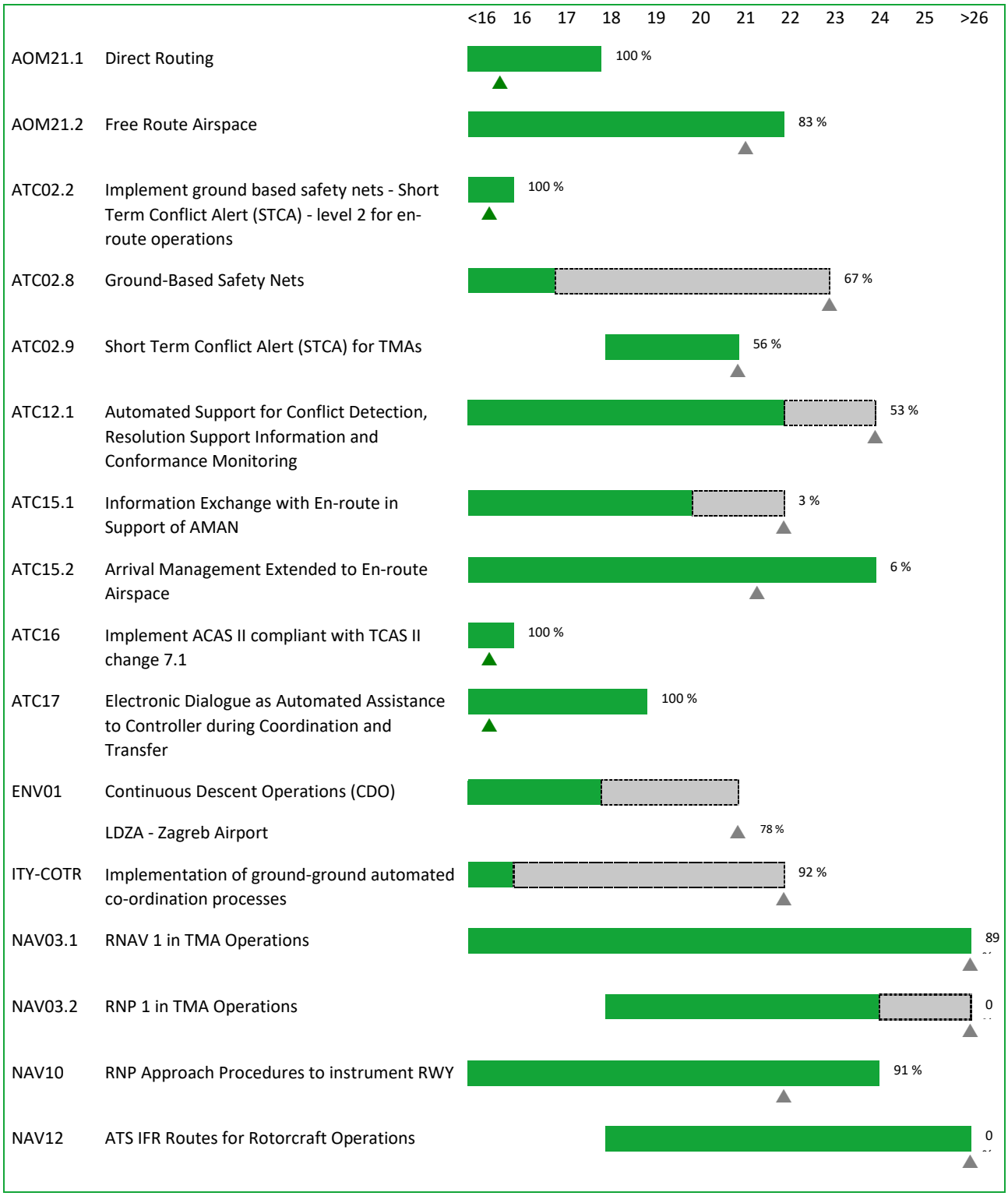
= Implementation Objective timeline (different colour per KF)

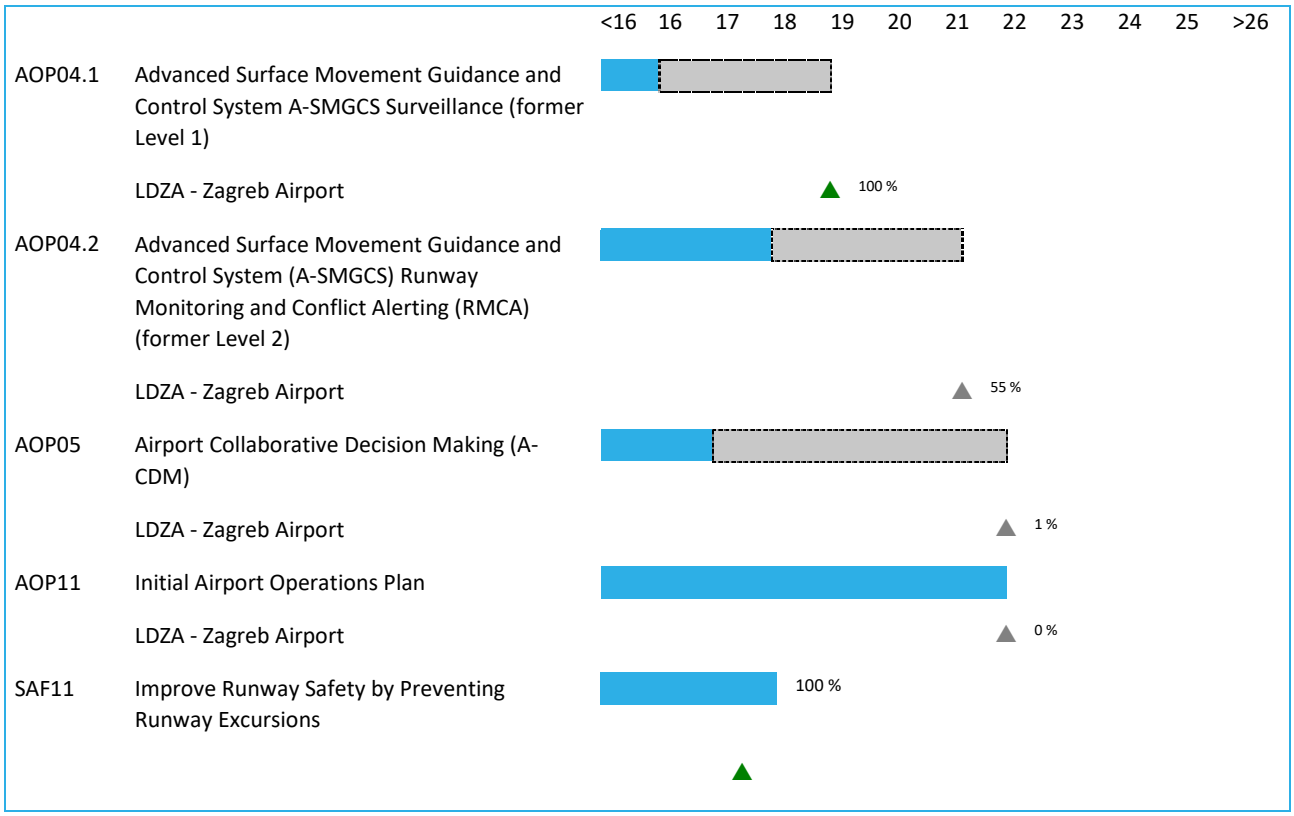
= Completion beyond Implementation Objective timeline

Optimised ATM Network Services



Advanced Air Traffic Services

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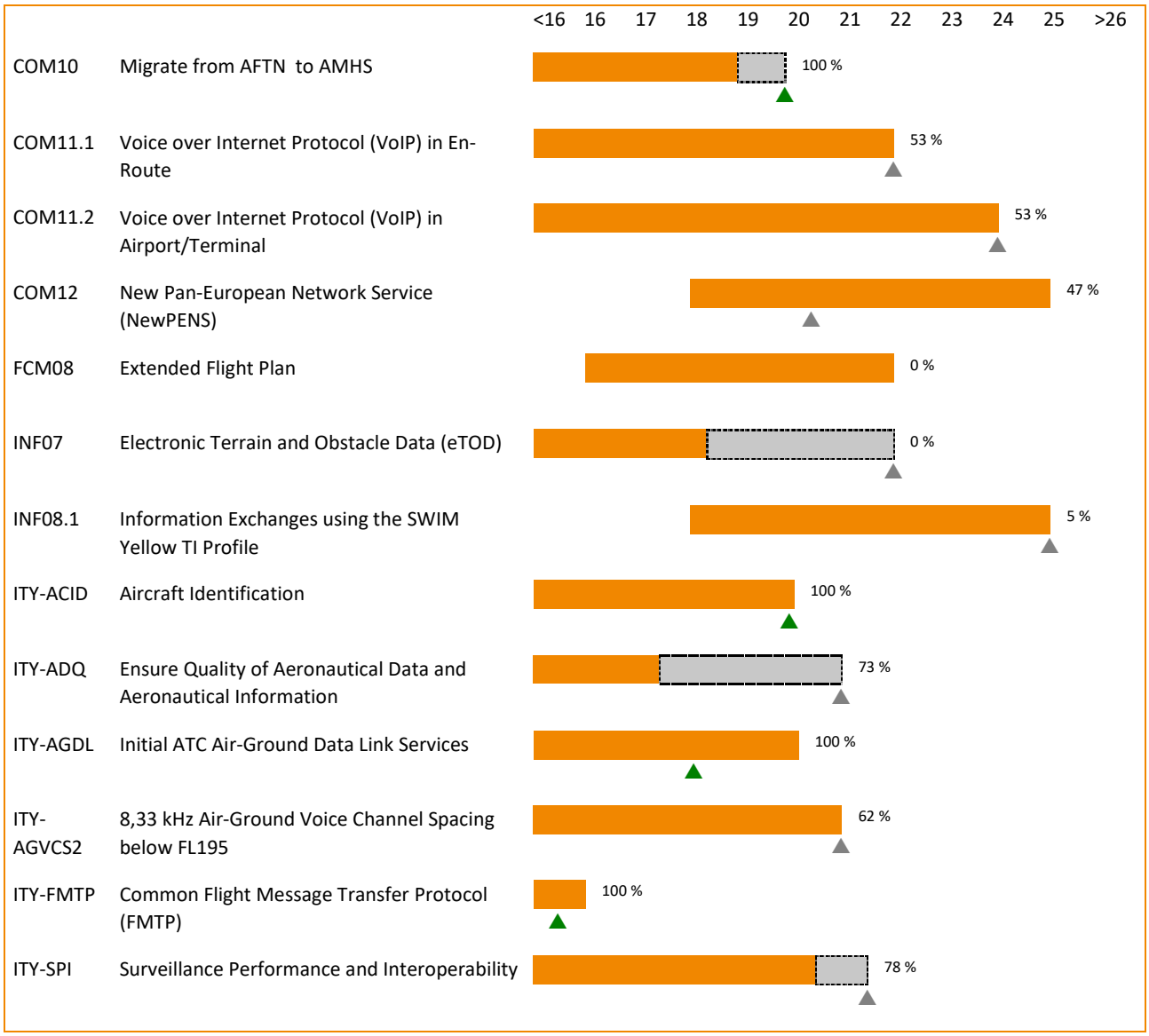
AOP04.1
Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)
LDZA - Zagreb Airport
100 %
AOP04.2
Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)
LDZA - Zagreb Airport
55 %
AOP05
Airport Collaborative Decision Making (A-CDM)
LDZA - Zagreb Airport
1 %
AOP11
Initial Airport Operations Plan
LDZA - Zagreb Airport
0 %
SAF11
Improve Runway Safety by Preventing Runway Excursions
100 %

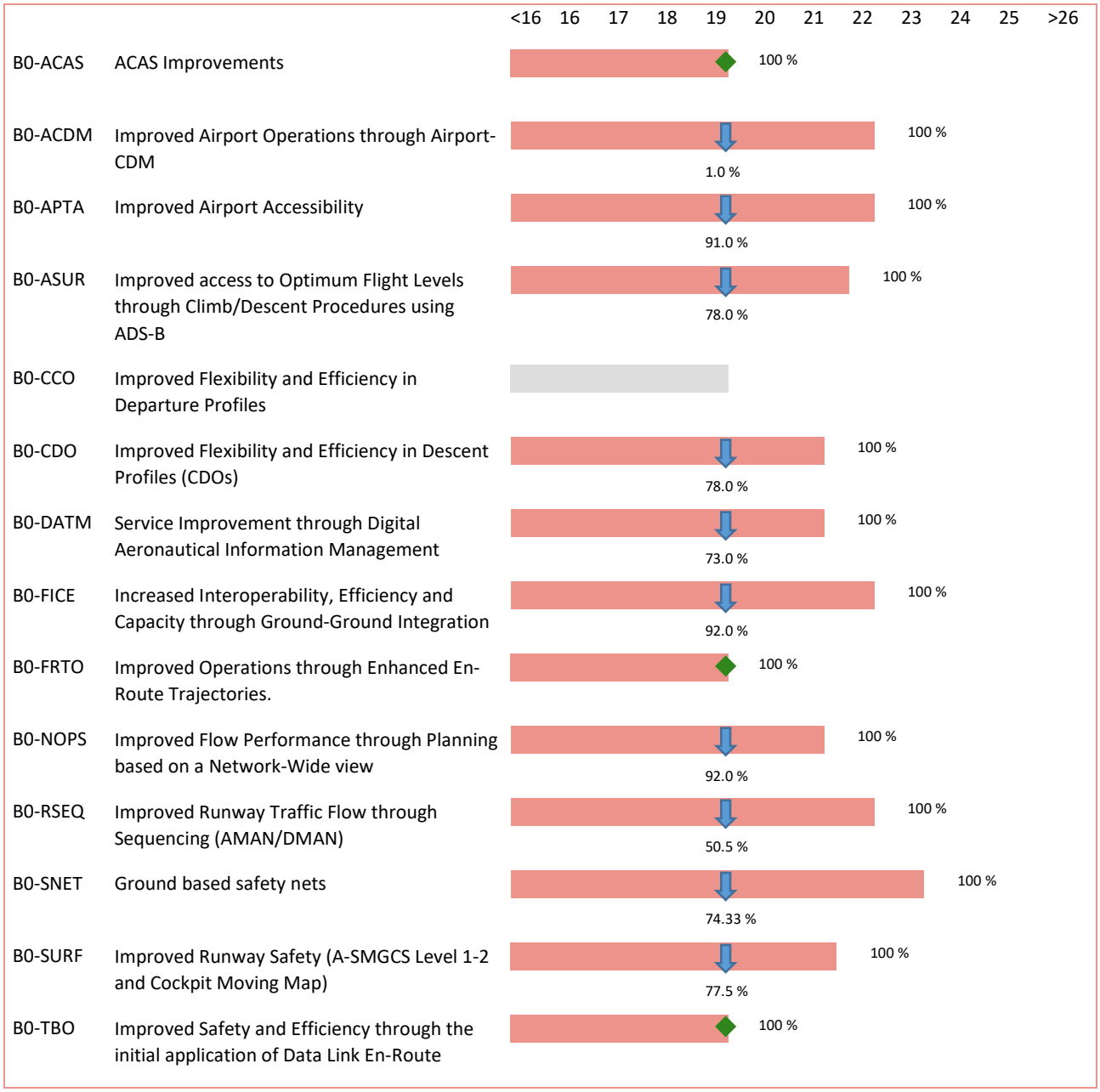

<16 16 17 18 19 20 21 22 23 24 25 >26
COM10 Migrate from AFTN to AMHS
100 %
COM11.1 Voice over Internet Protocol (VoIP) in En-Route
53 %
COM11.2 Voice over Internet Protocol (VoIP) in Airport/Terminal
53 %
COM12 New Pan-European Network Service (NewPENS)
47 %
FCM08 Extended Flight Plan
0 %
INF07 Electronic Terrain and Obstacle Data (eTOD)
0 %
INF08.1 Information Exchanges using the SWIM Yellow TI Profile
5 %
ITY-ACID Aircraft Identification
100 %
ITY-ADQ Ensure Quality of Aeronautical Data and Aeronautical Information
73 %
ITY-AGDL Initial ATC Air-Ground Data Link Services
100 %
ITY-AGVCS2 8,33 kHz Air-Ground Voice Channel Spacing below FL195
62 %
ITY-FMTP Common Flight Message Transfer Protocol (FMTP)
100 %
ITY-SPI Surveillance Performance and Interoperability
78 %

5.3. ICAO ASBU Implementation Progress

The following table shows, for each of the ASBU Block 0 modules, the overall status, the final date foreseen for completion and the percentage of progress achieved in the current cycle.

These results were determined using the LSSIP Year 2019 declared statuses and progress of the relevant Implementation objectives in accordance with the mapping approved by the ICAO EUR EASPG/1 (European Aviation System Planning Group).

Legend:



5.4. Detailed Objectives Implementation progress

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

Main Objectives

AOM13.1	**Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling** ***Timescales:*** Initial operational capability: 01/01/2012 Full operational capability: 31/12/2018		**100%**	**Completed**
Key Feature: Optimised ATM Network Services				
-				
Implementation of EUROCONTROL Specifications for harmonised Rules for Operational Air Traffic under Instrument Flight Rules inside controlled Airspace of the ECAC Area (EUROAT) is ensured by promulgation of Ordinance on Rules of Air for Military Aircraft (Ministry of Defence).				**31/12/2018**
REG (By:12/2018)				
CCAA	Implementation of EUROCONTROL Specifications for harmonised Rules for Operational Air Traffic under Instrument Flight Rules inside controlled Airspace of the ECAC Area (EUROAT) is ensured by promulgation of Ordinance on Rules of Air for Military Aircraft (Ministry of Defence)	-	100%	Completed 31/12/2012
Military Authority	Croatian MAA has implemented rules as issued by Eurocontrol in "Specifications for harmonised Rules for operational Air Traffic under Instrument Flight Rules inside controlled Airspace" in our Regulation of flying military aircraft.	-	100%	Completed 31/12/2014
ASP (By:12/2018)				
CCL Service Provider	CCL is the ANS provider both for civil and military air traffic. Training plan and competence scheme for OAT handling were revised. National legislation is amended and in compliance with the provisions of EC 805/2011.	-	100%	Completed 10/11/2016
MIL (By:12/2018)				
Military Authority	Croatian MAA has implemented rules as issued by Eurocontrol in "Specifications for harmonised Rules for operational Air Traffic under Instrument Flight Rules inside controlled Airspace" in our Regulation of flying military aircraft.	-	100%	Completed 31/12/2018

AOM19.1	**ASM Support Tools to Support Advanced FUA (AFUA)** ***Timescales:*** Initial operational capability: 01/01/2011 Full operational capability: 31/12/2018		**96%**	**Late**
Links: B1-FRTO, B1-NOPS | Key Feature: Optimised ATM Network Services				
		-		
Automated ASM support systems (CIAM, LARA) are fully operational as of December 2017. Local tool for measuring of FUA indicators (FIMS/CroFAST) is in operation from 01.01.2020.				**31/12/2020**
ASP (By:12/2018)				
CCL Service Provider	Automated ASM support systems (CIAM, LARA) are fully operational as of December 2017. Local tool for measuring of FUA indicators (FIMS/CroFAST) is in operation from 01.01.2020.	-	92%	Late 31/12/2020
Military Authority	Automated ASM support systems (CIAM, LARA) are fully operational as of December 2017.	-	100%	Completed 30/12/2017

AOM19.2	**ASM Management of Real-Time Airspace Data** ***Timescales:*** Initial operational capability: 01/01/2017 Full operational capability: 31/12/2021		**50%**	**Ongoing**
Links: B1-FRTO, B1-NOPS | Key Feature: Optimised ATM Network Services				
		-		
Procedures related to real-time (tactical) ASM level III information exchange are agreed, tested & validated, implementation date is set for 31/12/2021, upon validation of National high-level airspace policy body (NPUZP).				**31/12/2021**
ASP (By:12/2021)				
CCL Service Provider	-	-	50%	Ongoing 31/12/2021

AOM19.3	**Full Rolling ASM/ATFCM Process and ASM Information Sharing** ***Timescales:*** Initial operational capability: 01/01/2014 Full operational capability: 31/12/2021		**88%**	**Ongoing**
Links: B0-FRTO, B1-FRTO, B1-NOPS, B2-NOPS | Key Feature: Optimised ATM Network Services				
		-		
LARA V3 supports full rolling ASM/ATFCM process. Objective is linked with one of the FAB CE projects - see details in Chapter 5 of Level 1 document.				**31/12/2021**
ASP (By:12/2021)				
CCL Service Provider	-	-	88%	Ongoing 31/12/2021

AOM19.4	**Management of Pre-defined Airspace Configurations** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2021		**0%**	**Planned**
Links: B1-FRTO, B1-NOPS | Key Feature: Optimised ATM Network Services				
		-		
Definition of specification for the ATM system upgrade, as well as procedure definition foreseen for 2020.				**31/12/2021**
ASP (By:12/2021)				
CCL Service Provider	Definition of specification for the ATM system upgrade, as well as procedure definition foreseen for 2020.	-	0%	Planned 31/12/2021

AOM21.2	**Free Route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 31/12/2021	**83%**	**Ongoing**
Links: B0-FRTO, B1-FRTO | Key Feature: Advanced Air Traffic Services			
-			
First step in FRA Zagreb has been the implementation of night DCT's within Croatia and BiH (May 2012). In coordination with the NM, publication was done through RAD App 4. **The second step was the implementation of cross border DCT's with Serbia (May 2013). These night cross border DCT's were valid 23:00 to 05:00.** **In April 2014, night time cross-border DCT have been allowed for h24 use, and additional flows (DCT's) were added** **In April 2015, cross-border night FRA (SEAFRA) has been introduced through Croatia-Bosnia&Herzegovina-Serbia and Montenegro.** **At end of 2016, SEAFRA is implemented h24 from FL325 above.** **Sector capacities and FLOWs have been redefined, FMP has a real time monitoring possibility. Additional actions are planned for complexity monitoring, described in FCM06** **Free Route Airspace (SEAFRA h24) was implemented on 08.12.2016.** **In 2018 (01.02.2018) further extension of FRA is planned - SECSI FRA implementation (merge of SEAFRA and SAXFRA). With this change, FRA in Croatia will be lowered to FL205.** **Initial supporting tool for dynamic sectorisation will be developed by CCL for internal use. Plan is to have such tool ready by 02/2020.** **Supporting tool as part of main ATM system not planned at the moment**		**01/02/2021**
ASP (By:12/2021)			
CCL Service Provider	Multinational project SEAFRA h24 (Bosnia&Hercegovina, Croatia, Montenegro Serbia) was implemented on 08.12.2016. Implemented from FL325 and above. In 2018 (01.02.2018) further extension of FRA is planned - SECSI FRA implementation (merge of SEAFRA and SAXFRA). With this change, FRA in Croatia will be lowered to FL205. Initial supporting tool for dynamic sectorisation will be developed by CCL for internal use. Plan is to have such tool ready by 02/2020. Supporting tool as part of main ATM system not planned at the moment	Airspace Task Force / DEVOPS: FABCE Development of Operational Performance and ATM Strategies (previously Project 1)	83%	Ongoing 01/02/2021

AOP04.1	**Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)** ***Timescales:*** Initial operational capability: 01/01/2007 Full operational capability: 31/12/2011		**100%**	**Completed**
Links: B0-SURF | Key Feature: High Performing Airport Operations				
LDZA - Zagreb Airport				
Croatia Control commissioned an Advanced - Surface Movement Guidance & Control System (A-SMGCS) at Franjo Tudjman Airport in Zagreb.				**31/12/2018**
REG (By:12/2010)				
DGCA	Croatia Control commissioned an Advanced - Surface Movement Guidance & Control System (A-SMGCS) at Franjo Tudjman Airport in Zagreb.	-	100%	Completed 31/12/2018
ASP (By:12/2011)				
CCL Service Provider	A-SMGCS Level 1 implemented in November 2018 at LDZA.	-	100%	Completed 31/12/2018
APO (By:12/2010)				
MZLZ - Zagreb Airport Operator Ltd.	15.11.2018 the A-SMGCS has been put into official service.	-	100%	Completed 15/11/2018

AOP04.2	**Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)** ***Timescales:*** Initial operational capability: 01/01/2007 Full operational capability: 31/12/2017		**55%**	**Late**
Links: B0-SURF | Key Feature: High Performing Airport Operations				
LDZA - Zagreb Airport				
ASMGCS Level 2 planned for implementation before end 2020, (ASMGCS Level 1 is operational since 2018., upgrade to Level 2 is in progress)				**31/03/2021**
ASP (By:12/2017)				
CCL Service Provider	ASMGCS Level 2 planned for implementation before end 2020, (ASMGCS Level 1 is operational since 2018., upgrade to Level 2 is in progress)	-	40%	Late 31/03/2021
APO (By:12/2017)				
MZLZ - Zagreb Airport Operator Ltd.	Project activities for Level 2 equipment have been managed and completed by CroControl.	-	100%	Completed 31/12/2018

AOP05	**Airport Collaborative Decision Making (A-CDM)** ***Timescales:*** Initial operational capability: 01/01/2004 Full operational capability: 31/12/2016		**1%**	**Late**
Links: B0-ACDM, B0-RSEQ | Key Feature: High Performing Airport Operations				
LDZA - Zagreb Airport				
Zagreb intent is to start improving information sharing within existing systems and local specific environment. Zagreb is added in applicability area and CDM/DPI implementation list in the 2018 MP L3 Plan. However, the goal is to have continuous improvement of airport operational efficiency. Since March 28th 2017, all activities have been transferred to new passenger terminal. Transfer to new facilities has brought prerequisites for continuous growth of traffic. In order to meet growth of traffic and optimisation of operational performances, Zagreb International Airport has developed "CDM Implementation Project - Phase 1" as the basis for next steps and agreements towards future implementation of airport CDM.				**31/12/2021**
ASP (By:12/2016)				
CCL Service Provider	Zagreb International Airport has developed CDM implementation framework under "CDM Implementation Project - Phase 1" as the basis for next steps and agreements with stakeholders. ZIA is collaborating with CCL and a CDM is proposed as a way of improving operational planning and information exchange in relation to A-SMGCS. Operational procedures are described in LoA but need to be revised to the A-CDM Manual standard. Information sharing procedures yet need to be defined.	-	0%	Not yet planned -
APO (By:12/2016)				
MZLZ - Zagreb Airport Operator Ltd.	Currently, Zagreb is not referred within applicability area and CDM/DPI implementation list. However, the goal is to have continuous improvement of airport operational efficiency. Since March 28th 2017, all activities have been transferred to new passenger terminal. Transfer to new facilities has brought prerequisites for continuous growth of traffic. In order to meet growth of traffic and optimisation of operational performances, Zagreb International Airport has developed "CDM Implementation Project - Phase 1" as the basis for next steps and agreements towards future implementation of airport CDM.	-	2%	Late 31/12/2021

AOP10	**Time-Based Separation** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B1-RSEQ, B2-WAKE | Key Feature: High Performing Airport Operations				
LDZA - Zagreb Airport **(Outside Applicability Area)**				
Not applicable to airports in Croatia. Planned for operational implementation in May 2022				**-**
REG (By:12/2023)				
ASP (By:12/2023)				
CCL Service Provider	Not applicable to airports in Croatia. Since ATM system in ANSP will have TBS function in May 2022, TBS is planned to be operationally implemented during 2022. CCL will implement TBS for final approach with passive AMAN functionalities (enabler for TBS sequencing). Complete set of TBS future functionalities are still under development.	-	0%	Planned 31/05/2022

AOP11	**Initial Airport Operations Plan** ***Timescales:*** Initial Operational Capability: 01/01/2015 Full Operational Capability: 31/12/2021		**0%**	**Planned**
Links: B1-ACDM | Key Feature: High Performing Airport Operations				
LDZA - Zagreb Airport				
LDZA (ZIA) is introducing major changes to infrastructure, with relevant CCL experts involved in required areas, upon completion of the project both sides will define all required inputs needed for the formation of Airport Operational Plan.				**31/12/2021**
ASP (By:12/2021)				
CCL Service Provider	LDZA (ZIA) is introducing major changes to infrastructure, with relevant CCL experts involved in required areas, upon completion of the project both sides will define all required inputs needed for the formation of Airport Operational Plan.	-	0%	Planned 31/12/2021
APO (By:12/2021)				
MZLZ - Zagreb Airport Operator Ltd.	Since March 28th 2017, all activities have been transferred to new passenger terminal and old passenger terminal building has been closed. The new passenger terminal is supported by new apron and two additional taxiways. Existing aprons and related taxiways remained in service. New airport facilities have introduced operational changes and generated new inputs relevant for airport operational planning. Fine-tuning of procedures is ongoing.	-	0%	Planned 31/12/2021

AOP12	**Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B2-SURF | Key Feature: High Performing Airport Operations				
LDZA - Zagreb Airport **(Outside Applicability Area)**				
Not applicable for LDZA or other airports in Croatia.				**-**
ASP (By:12/2020)				
APO (By:12/2020)				
MZLZ - Zagreb Airport Operator Ltd.	-	-	%	Not Applicable -

AOP13	**Automated Assistance to Controller for Surface Movement Planning and Routing** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B1-ACDM, B1-RSEQ, B2-SURF | Key Feature: High Performing Airport Operations				
LDZA - Zagreb Airport **(Outside Applicability Area)**				
Some SLoAs have been done and actions completed but there is no plan or requirement for full implementation.				-
REG (By:12/2023)				
CCL Service Provider	No plans for the moment since none of the airports are in applicability area for implementation.	-	%	Not Applicable -
ASP (By:12/2023)				
CCL Service Provider	-	-	%	Not Applicable -

ATC02.8	**Ground-Based Safety Nets** ***Timescales:*** Initial operational capability: 01/01/2009 Full operational capability: 31/12/2016		**67%**	**Late**
Links: B0-SNET, B1-SNET | Key Feature: Advanced Air Traffic Services				
-				
APW available and operational. **MSAW function available in the system. Operational implementation has been delayed due to false and nuisance alerts which have a safety impact. Waiting deliverable for compliance.** **Training for the operational use will be performed before implementation.** **APM implementation plan, as part of MSAW implementation will be developed during 2020.**				**31/12/2022**
ASP (By:12/2016)				
CCL Service Provider	APW available in the system. APW available in the system for Zagreb ACC and TMA. Implemented in other TMA's with the extension of CROATMs in December 2011. ATCO training with the use of APW ground-based safety tools has been completed during the extension of CroATMS in December 2011. MSAW function available in the system. Operational implementation has been delayed due to false and nuisance alerts which have a safety impact. Waiting deliverable for compliance. Training for the operational use will be performed before implementation. APM implementation plan, as part of MSAW implementation will be developed during 2020.	-	67%	Late 31/12/2022

ATC02.9	**Short Term Conflict Alert (STCA) for TMAs** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2020	**56%**	**Ongoing**
Links: B0-SNET, B1-SNET | Key Feature: Advanced Air Traffic Services			
-			
STCA function is in use in TMA, but enhanced STCA functionality will be implemented by 2021. Upgrade to enhanced STCA functionality doesn't require change in ATC procedures. All TMA ATCO are trained for use of STCA, enhanced STCA will need short training (no training plans needed since no ATC procedure will be changed). Local safety assessment will be developed only for change of STCA parameters for TMA since no change in procedures are foreseen, and STCA function is already in use on TMA.			**31/12/2020**
ASP (By:12/2020)			
CCL Service Provider	STCA function is in use in TMA, but enhanced STCA functionality will be implemented by 2021. STCA functionality with multi-hypothesis algorithms already implemented in main ATM system. Upgrade to enhanced STCA functionality doesn't require change in ATC procedures. All TMA ATCO are trained for use of STCA, enhanced STCA will need short training (no training plans needed since no ATC procedure will be changed). Local safety assessment will be developed only for change of STCA parameters for TMA since no change in procedures are foreseen, and STCA function is already in use on TMA.	-	56%	Ongoing 31/12/2020

ATC07.1	**AMAN Tools and Procedures** ***Timescales:*** - not applicable -	**%**	**Not Applicable**
Links: B0-RSEQ | Key Feature: Advanced Air Traffic Services			
LDZA - Zagreb Airport **(Outside Applicability Area)**			
Implementation of AMAN is still under consideration, as Croatia is excluded from the applicability area.			**-**
ASP (By:12/2019)			
CCL Service Provider	AMAN implementation and co-ordination support for AMAN are not planned, but are available as a function in the new ATM system implemented in 2014. Implementation of AMAN tool will be planned in accordance with operational needs, taking into consideration the categorisation of Aerodrome and TMA capacity (currently all a/d 's and TMA's are low capacity (LC) with less than 30 movements per busy hour.	ATM System Upgrade	%	Not Applicable -

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		**53%**	**Late**
Links: B1-FRTO | Key Feature: Advanced Air Traffic Services				
-				
MTCD and MONA are in operational use since 2005, a probe function exists with no passive resolution support. **Passive resolution support is under development.** **Currently, no plan exist for implementation of TCT.**				**31/12/2023**
ASP (By:12/2021)				
CCL Service Provider	MTCD and MONA are in operational use since 2005, a probe function exists with no passive resolution support. Passive resolution support is under development. Plan for implementation of TCT is updated in line with planed upgrades of main ATM system.	ATM System Upgrade	53%	Late 31/12/2023

ATC15.1	**Information Exchange with En-route in Support of AMAN** ***Timescales:*** Initial operational capability: 01/01/2012 Full operational capability: 31/12/2019		**3%**	**Late**
Links: B1-RSEQ | Key Feature: Advanced Air Traffic Services				
-				
AMAN is a function in the new ATM system as of 2014. During 2016 a request was received for information exchange mechanisms supporting basic AMAN (AMA message reception), implementation is planned by the end of 2020.				**31/12/2021**
ASP (By:12/2019)				
CCL Service Provider	AMAN is a function in the new ATM system as of 2014. During 2016 a request was received for information exchange mechanisms supporting basic AMAN (AMA message reception), implementation is planned by the end of 2020.	ATM System Upgrade	3%	Late 31/12/2021

ATC15.2	**Arrival Management Extended to En-route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 31/12/2023		**6%**	**Ongoing**
Links: B1-RSEQ | Key Feature: Advanced Air Traffic Services				
-				
Functionality is available in the COOPANS ATM system, needs to be activated in CCL. **Need for implementation is communicated with ACG to support sequencing for Vienna airport (PCP requirement)**				**31/05/2021**
ASP (By:12/2023)				
CCL Service Provider	Functionality is available in the COOPANS ATM system, needs to be activated in CCL. Need for implementation is communicated with ACG to support sequencing for Vienna airport (PCP requirement)	-	6%	Ongoing 31/05/2021

ATC17	**Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2018		**100%**	**Completed**
Key Feature: Advanced Air Traffic Services				
-				
These SLoAs have been completed with the introduction of a new building and a stripless ATM system in 01/2006. At that time, CCAA did not exist as a stakeholder and coordination was done with MoD and MOT.				**31/12/2005**
ASP (By:12/2018)				
CCL Service Provider	These SLoAs have been completed with the introduction of a new building and a stripless ATM system in 01/2006. At that time, CCAA did not exist as a stakeholder and coordination was done with MoD and MOT.	ATM System Upgrade	100%	Completed 31/12/2005

COM10	**Migrate from AFTN to AMHS** ***Timescales:*** Initial operational capability: 01/12/2011 Full operational capability: 31/12/2018		**100%**	**Completed**
Key Feature: Enabling the Aviation Infrastructure				
-				
Procurement of a new AMHS was in 2012, implementation in 2014. An operational AMHS connection is in place with Vienna, Rome, Eurocontrol, Madrid, Bratislava and Warsaw. Intended operational AMHS foreseen with other partners in EUR/NAT region supporting full meshed topology. Croatia is not a boundary state in EUR region. Some ATMHS Extended functionalities already implemented				**28/11/2019**
ASP (By:12/2018)				
CCL Service Provider	Procurement of a new AMHS was in 2012, implementation in 2014. An operational AMHS connection is in place with Vienna, Rome, Eurocontrol, Madrid, Bratislava and Warsaw. Intended operational AMHS foreseen with other partners in EUR/NAT region supporting full meshed topology. Croatia is not a boundary state in EUR region. Some ATMHS Extended functionalities already implemented	-	100%	Completed 28/11/2019

COM11.1	**Voice over Internet Protocol (VoIP) in En-Route** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2021		**55%**	**Ongoing**
Key Feature: Enabling the Aviation Infrastructure				
-				
Implementation of VoIP in G/G voice communication is planned to be done by Q2/20, whilst implementation of VoIP in A/G voice communication is planned to be done by Q4/21.				**31/12/2021**
ASP (By:12/2021)				
CCL Service Provider	Implementation of VoIP in G/G voice communication is planned to be done by Q2/20., whilst implementation of VoIP in A/G voice communication is planned to be done by Q4/21.	VOICE-COM Systems Modernization and Replacement Project	55%	Ongoing 31/12/2021

COM11.2	**Voice over Internet Protocol (VoIP) in Airport/Terminal** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2023		**53%**	**Ongoing**
Key Feature: Enabling the Aviation Infrastructure				
-				
Enabling the Aviation Infrastructure				**31/12/2023**
ASP (By:12/2023)				
CCL Service Provider	Enabling the Aviation Infrastructure	-	53%	Ongoing 31/12/2023

COM12	**New Pan-European Network Service (NewPENS)** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability (33 ANSPs): 31/12/2020		**47%**	**Ongoing**
Links: B1-SWIM | Key Feature: Enabling the Aviation Infrastructure				
-				
Plan is to migrate all PENS services to new PENS infrastructure.				**31/05/2020**
ASP (By:12/2024)				
CCL Service Provider	CCL plan is to migrate all PENS services to new PENS infrastructure.	-	70%	Ongoing 31/05/2020
APO (By:12/2024)				
MZLZ - Zagreb Airport Operator Ltd.	Local needs and implementing requirements haven't yet been reviewed with ANSP and NM.	-	0%	Not yet planned -

ENV01	**Continuous Descent Operations (CDO)** ***Timescales:*** Initial operational capability: 01/07/2007 Full operational capability: 31/12/2023		**78%**	**Ongoing**
Links: B0-CDO, B1-CDO | Key Feature: Advanced Air Traffic Services				
LDZA - Zagreb Airport				
The CDA facilitation will be comprise any of the following: **- The "simple" CDA: provision of DTG (Distance To Go) information by Air Traffic Control (ATC) during vectoring** **- Standard Arrival Routes (STARs) (including PRNAV, PBN, transitions, etc.) which will be designed with vertical profiles.** **- A combination of these: STARs being used in low traffic density, and DTG estimates, being issued by ATC as and when radar intervention is required e.g. during busy periods.**				**31/12/2020**
ASP (By:12/2023)				
CCL Service Provider	A workshop held in CCL with all stakeholders. Flight trials and implementation for Zagreb TMA have been postponed due other developments. PBN procedures STAR for LDZA and LDOS implemented in April 2019. PBN STAR procedure for all other airports by spring 2020, which enable CDO throughout STAR procedures.	-	100%	Completed 25/04/2019
APO (By:12/2023)				
MZLZ - Zagreb Airport Operator Ltd.	Zagreb International Airport has ISO 14001 certificate and has established system for noise monitoring. Zagreb International Airport will follow necessary steps towards CDO in coordination with CroControl in order to set up appropriate models for performance monitoring and appropriate links with local community. With reference to current CroControl actions - The CDO Operations in Airport Zagreb are considered through PBN implementation process in Zagreb FIR.	-	10%	Ongoing 31/12/2020

FCM03	**Collaborative Flight Planning** ***Timescales:*** Initial operational capability: 01/01/2000 Full operational capability: 31/12/2017		**84%**	**Late**
Links: B0-NOPS | Key Feature: Optimised ATM Network Services				
-				
Most SLoAs have been completed with implementation of new ATM system in 2014. Validation of automatic sending AFP messages to NM didn't resulted with approval from NM. New set of tests planned for Q2 2019. AFP is sent manually.				**31/12/2020**
ASP (By:12/2017)				
CCL Service Provider	Most SLoA have been completed with implementation of the new ATM system in 02/2014. Validation of automatic sending AFP messages to NM didn't resulted with approval from NM. New set of tests planned for Q2 2019. AFP is sent manually.	-	84%	Late 31/12/2020

FCM04.2	**Short Term ATFCM Measures (STAM) - Phase 2** ***Timescales:*** Initial operational capability: 01/11/2017 Full operational capability: 31/12/2021		**3%**	**Ongoing**
Key Feature: Optimised ATM Network Services				
-				
Initial actions have started as part of FAB CE DAM/STAM Project (ex. P3). It is likely that STAM phase 2 will be implemented with the availability of this function in the N-connect Tool, (NM STAM Tool) planned for implementation 2019+. A plan for implementation (own development or NM Tool) will be made in 2020, with possible development within COOPANS alliance. STAM Phase 2 processes have been tested between CCL and ACG in summer 2019 within the SESAR PJ24 activities.				**31/12/2021**
ASP (By:12/2021)				
CCL Service Provider	Initial actions have started as part of FAB CE DAM/STAM Project (ex. P3). It is likely that STAM phase 2 will be implemented with the availability of this function in the N-connect Tool, (NM STAM Tool) planned for implementation 2019+. A plan for implementation (own development or NM Tool) will be made in 2020, with possible development within COOPANS alliance. STAM Phase 2 processes have been tested between CCL and ACG in summer 2019 within the SESAR PJ24 activities.	-	3%	Ongoing 31/12/2021

FCM05	**Interactive Rolling NOP** ***Timescales:*** Initial operational capability: 01/09/2013 Full operational capability: 31/12/2021		**0%**	**Planned**
Links: B1-ACDM, B1-NOPS | Key Feature: Optimised ATM Network Services				
-				
Implementation of interactive rolling NOP is planned through upgrade of the automated ASM support system with the capability of AIXM 5.1 B2B data exchange with NM and Perform an integration of the automated ASM support systems with the Network. All these projects will be fulfilled in accordance with the NM support, the guidance and the relevant provisions of the NM B2B Reference Manuals.				**31/12/2021**
ASP (By:12/2021)				
CCL Service Provider	-	-	0%	Planned 31/12/2021
APO (By:12/2021)				
MZLZ - Zagreb Airport Operator Ltd.	Currently, Zagreb Airport is not slot coordinated airport. Zagreb Airport Operator will coordinate with CroControl actions in setting up the AOP and its integration with the NOP.	-	0%	Planned 31/12/2021

FCM06	**Traffic Complexity Assessment** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 31/12/2021		**7%**	**Ongoing**
Links: B1-NOPS | Key Feature: Optimised ATM Network Services				
-				
Several options are discussed on whether ANSP will procure a readymade Complexity Assessment Tool, or will commit to develop such a tool using own resources. The idea of developing a common FAB CE Complexity Tool, has been abandoned for now. Initial actions have been made, with advanced use of CHMI functions (Associated Flows etc.). A Thales TopLink Live Trial was executed in summer 2016 - with complexity information available in real time on FMP/SUP positions where ATFCM decisions are made. A continuation of this trial was done in June 2019 within SESAR PJ24 activities. Recently there is interest within COOPANS to develop such tools, so a plan should be made in 2020.				**31/12/2021**
ASP (By:12/2021)				
CCL Service Provider	Several options are discussed on whether ANSP will procure a readymade Complexity Assessment Tool, or will commit to develop such a tool using own resources. The idea of developing a common FAB CE Complexity Tool, has been abandoned for now. Initial actions have been made, with advanced use of CHMI functions (Associated Flows etc.). A Thales TopLink Live Trial was executed in summer 2016 - with complexity information available in real time on FMP/SUP positions where ATFCM decisions are made. A continuation of this trial was done in June 2019 within SESAR PJ24 activities. Recently there is interest within COOPANS to develop such tools, so a plan should be made in 2020. Objective is linked with one of the FAB CE projects - see details in Chapter 5 of Level 1 document.	-	7%	Ongoing 31/12/2021

FCM08	**Extended Flight Plan** ***Timescales:*** Initial operational capability: 01/01/2016 Full operational capability: 31/12/2021		**0%**	**Not yet planned**
Links: B1-FICE | Key Feature: Enabling the Aviation Infrastructure				
-				
Current ATM system is foreseen to be upgraded by 2025 with capability to exchange eFPL. At the moment, there are no plans to start the activities.				-
ASP (By:12/2021)				
CCL Service Provider	Current ATM system is foreseen to be upgraded by 2025 with capability to exchange eFPL. At the moment, there are no plans to start the activities.	-	0%	Not yet planned -

INF07	**Electronic Terrain and Obstacle Data (eTOD)** ***Timescales:*** Initial operational capability: 01/11/2014 Full operational capability: 31/05/2018		**0%**	**Late**
Key Feature: Enabling the Aviation Infrastructure				
-				
The Ministry of the Sea, Transport and Infrastructure will establish a working group which will be tasked to draft the national TOD policy and implementation programme. National TOD policy is in preparation by DGCA. CCAA will draft the plans and procedures to oversight the TOD implementation, based on TOD Policy and framework.				**31/12/2021**
REG (By:05/2018)				
CCAA	National TOD policy is in preparation by DGCA. CCAA will draft the plans and procedures to oversight the TOD implementation, based on TOD Policy and framework.	-	0%	Late 31/12/2021
ASP (By:05/2018)				
CCL Service Provider	Awaiting deliverable from Regulatory Authority	-	0%	Late 31/12/2020
APO (By:05/2018)				
MZLZ - Zagreb Airport Operator Ltd.	Awaiting national eTOD policy and implementation programme.	-	0%	Late 31/12/2020

INF08.1	**Information Exchanges using the SWIM Yellow TI Profile** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2024		**5%**	**Ongoing**
Links: B1-DATM, B1-SWIM | Key Feature: Enabling the Aviation Infrastructure				
-				
				31/12/2024
ASP (By:12/2024)				
CCL Service Provider	Project for SWIM yellow profile started in CCL, first connection of ATM system to SWIM foreseen in 2022. Further steps are in plans (aeronautical exchange) while rest is still not yet defined.	-	10%	Ongoing 31/12/2024
MIL (By:12/2024)				
Military Authority	Objective is not yet in plan for implementation.	-	%	Not Applicable -
APO (By:12/2024)				
MZLZ - Zagreb Airport Operator Ltd.	No current plans. The objective is subject to mutual agreements.	-	0%	Not yet planned -

ITY-ACID	**Aircraft Identification** ***Timescales:*** Entry into force of the Regulation: 13/12/2011 System capability: 02/01/2020		**100%**	**Completed**
Key Feature: Enabling the Aviation Infrastructure				
-				
Mode S airspace is currently declared in Zagreb FIR from FL205 up to FL660. CCL plans to declare Mode S airspace bellow FL205, as well as the relevant airports by the end of 2019. Technical capabilities exists, training of the TMA ATCO and revised safety assessment is foreseen.				**31/12/2019**
ASP (By:01/2020)				
CCL Service Provider	Mode S airspace is declared in Zagreb FIR from GND up to FL660.	-	100%	Completed 31/12/2019

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		**73%**	**Late**
Links: B0-DATM | Key Feature: Enabling the Aviation Infrastructure				
-				
CCAA established a national working group for national implementation of ADQ requirements. Croatia has only partially implemented the requirements set for 1st July 2013 and 1st July 2014. Due to announced Installation of new ANSP Aeronautical Information Management (AIM) System, delay is expected.				**31/12/2020**
REG (By:06/2017)				
CCAA	CCAA established a national working group for national implementation of ADQ requirements. Croatia has only partially implemented the requirements set for 1st July 2013 and 1st July 2014. Due to announced Installation of new ANSP Aeronautical Information Management (AIM) System, delay is expected.	-	92%	Late 31/12/2020
ASP (By:06/2017)				
CCL Service Provider	Precise dates and further planning to be determined after issuance of means of compliance, supporting the Implementation of the Regulation on Aeronautical data and information quality.	-	66%	Late 31/12/2020
APO (By:06/2017)				
MZLZ - Zagreb Airport Operator Ltd.	The airport currently does not create, store, handle, process or transfer electronic terrain data or electronic obstacle data. The airport currently does not employ direct electronic connection for direct transfer and does not use tools for any automation of data exchange. Data quality requirements are stipulated within the contracts with outside providers of aeronautical measurements. The "Aeronautical Data and Information Provision Agreement" between Airport and ASP stipulates details for quality and provision of aeronautical data and information.	-	71%	Late 31/12/2020

ITY-AGDL	**Initial ATC Air-Ground Data Link Services** ***Timescales:*** Entry into force: 06/02/2009 ATS unit operational capability: 05/02/2018 Aircraft capability: 05/02/2020		**100%**	**Completed**
Links: B0-TBO | Key Feature: Enabling the Aviation Infrastructure				
-				
Compliance of ATS provider with the regulation (EC) No 29/2009 (as amended) is planned as a FAB CE project.				**05/02/2018**
REG (By:02/2018)				
CCAA	Introduction of AGDL by CCL was subject of CCAA review. Acceptance has been issued.	-	100%	Completed 05/02/2018
CCL Service Provider	Controller-Pilot Data Link Communications ¿ CPDLC service was successfully launched in Zagreb ACC from March 30th 2017.	-	100%	Completed 31/12/2017
DGCA	Implement notify potential exemption cases to the EC will be assured during 2017. Compliance of ATS provider with the regulation (EC) No 29/2009 (as amended) is planned as a FAB CE project.	-	100%	Completed 31/12/2016
ASP (By:02/2018)				
CCL Service Provider	Implementation of AGDL system was done according to the rules set in Regulation (EC) No 2015/310 of 26 February 2015 amending by Regulation (EC) No 29/2009 of 16 January 2009. Controller-Pilot Data Link Communications ¿ CPDLC service was successfully launched in Zagreb ACC from March 30th 2017.	-	100%	Completed 31/12/2017
MIL (By:01/2019)				
Military Authority	We have no plan to equip transport-type State aircraft with ATC air-ground data link services	-	%	Not Applicable -

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		**62%**	**Late**
Key Feature: Enabling the Aviation Infrastructure				
-				
All voice communication systems are currently in modernization. The first phase was finished in 03/2015 (90% of equipment) and the second phase in 05/2017 (10% - small airports). All radio equipment will be modernized according to the IR 1079/2012 by 12/2020.				**31/12/2020**
REG (By:12/2018)				
DGCA	All voice communication systems are currently in modernization. The first phase is expected to be finished by 03/2015 (90% of equipment) and the second phase by 05/2017 (10% - small airports). All radio equipment will be modernized according to the IR 1079/2012 by 12/2020.	-	43%	Late 31/12/2020
Military Authority	-	-	100%	Completed 30/06/2016
ASP (By:12/2018)				
CCL Service Provider	All voice communication systems are currently under modernization. The first phase has been finished in May 2015 (cca 70% of equipment) and the second phase is planned to be completed by 12/2020 (30%).	VOICE-COM Systems Modernization and Replacement Project	49%	Late 31/12/2020
Military Authority	-	-	100%	Completed 06/12/2018
MIL (By:12/2020)				
Military Authority	State aircraft, which will be out of service by the end of 2025, will not be equipped with radio equipment with 8,33 kHz channel spacing capability. Most of the fleet is already equipped with 8,33 channel spacing radio equipment and the equipment is already in use. The rest of the fleet is planned to be equipped by the end of 2020.	-	100%	Completed 31/12/2016
APO (By:12/2018)				
Military Authority	The airport will adhere to actions in accordance with ASP and REG.	-	%	Not Applicable -
MZLZ - Zagreb Airport Operator Ltd.	All radio devices used for airport civil ground services are subject to prior approval by national regulatory authority (Croatian Regulatory Authority for Network Industries / Hrvatska regulatorna agencija za mrezne djelatnosti - HAKOM). Currently, the TETRA system is in use.	-	%	Not Applicable -

ITY-FMTP	**Common Flight Message Transfer Protocol (FMTP)** ***Timescales:*** Entry into force of regulation: 28/06/2007 All EATMN systems put into service after 01/01/09: 01/01/2009 All EATMN systems in operation by 20/04/11: 20/04/2011 Transitional arrangements: 31/12/2012 Transitional arrangements when bilaterally agreed between ANSPs: 31/12/2014		**100%**	**Completed**
Links: B0-FICE, B1-FICE | Key Feature: Enabling the Aviation Infrastructure				
-				
CCAA has received DoV/TF for system which implements FMTP. Verification by CCAA has been performed as a part of CroATMS change monitoring and acceptance process.				**31/12/2014**
ASP (By:12/2014)				
CCL Service Provider	Migration of all OLDI links (CCL-neighbours) to FMTP was completed 27.02.2015.	-	100%	Completed 31/12/2014
Military Authority	Migration of military OLDI link (CCL-MCC) to FMTP was completed 14.02.2014.	-	100%	Completed 14/02/2014
MIL (By:12/2014)				
Military Authority	-	-	100%	Completed 31/12/2014

ITY-SPI	**Surveillance Performance and Interoperability** ***Timescales:*** Entry into force of regulation: 13/12/2011 ATS unit operational capability: 12/12/2013 EHS and ADS-B Out in transport-type State aircraft : 07/06/2020 ELS in transport-type State aircraft : 07/06/2020 Ensure training of MIL personnel: 07/06/2020 Retrofit aircraft capability: 07/06/2020		**78%**	**Late**
Links: B0-ASUR | Key Feature: Enabling the Aviation Infrastructure				
-				
Verification of safety assessments for the systems identified in SPI-IR Art. 2.1 (b), (c) and (d) was conducted as a part of the review of safety related change, introduction of new ATM system planned for February 2014, followed by NSA acceptance.				**01/06/2021**
REG (By:02/2015)				
CCAA	Verification of safety assessments for the systems identified in SPI-IR Art. 2.1 (b), (c) and (d) was conducted as a part of the review of safety related change, introduction of new ATM system in February 2014, followed by NSA acceptance. NSA has received safety case for the systems identified in SPI-IR Art. 2.1 (b) and (d) CCAA review of safety case is in progress.	-	100%	Completed 05/02/2015
ASP (By:02/2015)				
CCL Service Provider	This objective is derived from Regulation (EU) No 1207/2011, laying down requirements for the performance and interoperability of surveillance for the single European sky (SPI-IR). Regulation applies to air traffic service providers which provide air traffic control services based on surveillance data. Regulation applies to the surveillance chain (as defined in Article 3(6) of the Regulation) constituted of: (a) airborne surveillance systems, their constituents and associated procedures; (b) ground-based surveillance systems, their constituents and associated procedures; (c) surveillance data processing systems, their constituents and associated procedures; (d) ground-to-ground communications systems used for distribution of surveillance data, their constituents and associated procedures.	Ground-based Surveillance Systems Upgrade	100%	Completed 12/12/2013
MIL (By:06/2020)				
Military Authority	For the time being only the firefighting aircraft fleet is planned for equipping with ADS-B. Plans have been made and 6 CL-415 Canadair aircraft should be equipped with the ADS-B by the end of May 2021.	-	40%	Late 01/06/2021

NAV03.1	**RNAV 1 in TMA Operations** ***Timescales:*** Initial operational capability: 01/01/2001 One SID and STAR per instrument RWY, where established: 25/01/2024 All SIDs and STARs per instrument RWY, where established: 06/06/2030		**89%**	**Ongoing**
Links: B0-CCO, B0-CDO, B1-RSEQ | Key Feature: Advanced Air Traffic Services				
-				
RNAV 1 SID/STAR and changed RNP APCH implementation is planned for Zagreb TMA and Osijek TMA by 4/2019. Other TMA's will follow RNAV 1 SID/STAR and RNP APCH implementation by 12/2019 until 1/2020. LDDU RNP AR RWY 30 was implemented by CCL on December 2018. LDSP RNAV Visual RWY23 was implemented in July 2018 and implementation a similar RNAV VISUAL with RF leg is planned for LDOS RWY 29 and LDDU RWY30 by 12/2020. New flight trials for SID/STAR RNAV will take place during February and September 2019. New RNP APCH implementation is planned for LDRI, LDSB by 12/2020.				**01/01/2030**
REG (By:06/2030)				
CCL Service Provider	RNAV 1 arrival routes are implemented for all TMAs by 12/2019 to 2/2020. SIDs RNAV 1 are implemented for all TMAs by 12/2019 to 2/2020. RNAV 1 arrival and departure routes and RNP APCH for LDLO are planned after reconstruction of the RWY by 2021.	NAV Systems Modernization and Replacement Project	100%	Completed -
ASP (By:06/2030)				
CCL Service Provider	RNAV 1 arrival routes are implemented for all TMAs by 12/2019 to 2/2020. SIDs RNAV 1 are implemented for all TMAs by 12/2019 to 2/2020. RNAV 1 Arrival and departure routes and RNP APCH for LDLO are planned after reconstruction of the RWY by 2021.	NAV Systems Modernization and Replacement Project	87%	Ongoing 01/01/2030

NAV03.2	**RNP 1 in TMA Operations** ***Timescales:*** Start: 07/08/2018 All SIDs and STARs per instrument RWY, at PCP airports: 25/01/2024 One SID and STAR per instrument RWY, where established: 25/01/2024 All SIDs and STARs per instrument RWY, where established: 06/06/2030		**0%**	Planned
Links: B1-RSEQ | Key Feature: Advanced Air Traffic Services				
-				
The objective has not yet been fully reviewed and is planned for 2030				**06/06/2030**
REG (By:06/2030)				
CCL Service Provider	-	-	0%	Planned 06/06/2030
ASP (By:06/2030)				
CCL Service Provider	Combination of RNP1 and RNAV1 procedures in Croatian airspace.	-	0%	Planned 06/06/2030

NAV10	**RNP Approach Procedures to instrument RWY** ***Timescales:*** Initial operational capability: 01/06/2011 Instrument RWY ends without precision approach in EU SES States, at Non-PCP airports: 03/12/2020 Instrument RWY ends served by precision approach (including PCP airports): 25/01/2024 Instrument RWY ends without precision approach in EU SES States, at PCP airports: 25/01/2024		**91%**	**Ongoing**
Links: B0-APTA | Key Feature: Advanced Air Traffic Services				
-				
LDDU RNAV GNSS RWY 12 (LPV/Baro-VNAV/LNAV) has been implemented in 2015. APV procedures (LDZA RNP APCH RWY05/23, LDOS RNP APCH RWY11, LDSP RNP APCH RWY05, LDZD RNP APCH RWY04/14/32, LDPL RNP APCH RWY09/27 with LPV minima, was implemented during 2018. LDRI RNP APCH RWY14/32, LDSB RNP APCH RWY04/22) will be Implemented during 2019/2020. **LDDU RNP AR RWY 30 was implemented by CCL on December 2018. LDSP RNAV Visual RWY23 was implemented in July 2018 and the implementation a similar RNAV VISUAL with RF leg is planned for LDOS RWY 29 and LDDU RWY30 by 12/2020. Full Implementation is expected by 12/2020 with LNAV to the all instrument RWY as a minimum.**			**31/12/2021**
REG (By:01/2024)				
DGCA	-	-	100%	Completed 31/12/2011
CCAA	EASA Aircraft Certification Standards for Implementation Approach Procedure with Vertical Guidance (APV) is implemented in Republic of Croatia - AMC 20-27 (EASA) and EASA AMC 20-28 has been published on EASA web site.	-	100%	Completed 31/12/2015
ASP (By:01/2024)				
CCL Service Provider	Baro VNAV and LNAV procedures are being designed in accordance with the conclusions of ICAO 37th assembly. RNP Procedures are completed for all airports except for LDLO and LDOS RWY29, to be completed before end 2020.	NAV Systems Modernization and Replacement Project	89%	Ongoing 31/12/2021

NAV12	**ATS IFR Routes for Rotorcraft Operations** ***Timescales:*** Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes above FL150, where established.: 03/12/2020 One rotorcraft RNP0.3, RNP01 or RNAV1 SID and STAR per instrument RWY, where established.: 25/01/2024 Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes below FL150, where established.: 25/01/2024 All rotorcraft RNP0.3, RNP01 or RNAV1 SIDs and STARs per instrument RWY, where established.: 06/06/2030		**%**	**Not Applicable**
Links: B1-APTA | Key Feature: Advanced Air Traffic Services				
-				
IFR routes exist in Croatia in lower airspace up to FL205. There are no specific rotorcraft routes and no plan exists to create such routes due demand does not exist.				**-**
REG (By:06/2030)				
CCAA	-	-	%	Not Applicable -
ASP (By:06/2030)				
CCL Service Provider	IFR routes exist in Croatia in lower airspace up to FL205. There are no specific rotorcraft routes and no plan exists to create such routes due demand does not exist	-	%	Not Applicable -

SAF11	**Improve Runway Safety by Preventing Runway Excursions** ***Timescales:*** Initial operational capability: 01/09/2013 Full operational capability: 31/01/2018		**100%**	**Completed**
Key Feature: High Performing Airport Operations				
-				
This measures and appropriate Air Safety Information Letter-ASIL, have been published in Croatian State Safety Program /Official Gazette" 68/14/, and CCAA web.				**01/06/2017**
REG (By:01/2018)				
CCAA	Croatian State Safety Program, has been published in /Official Gazette" 68/14/, and Air Safety Information Letter-ASIL has been promulgated at CCAA web	-	100%	Completed 01/06/2017
ASP (By:12/2014)				
CCL Service Provider	-	-	100%	Completed 31/12/2015
APO (By:12/2014)				
MZLZ - Zagreb Airport Operator Ltd.	LRST has been established since 2005. Ongoing actions according to EAPPRE and CCAA ASIL-2014-004.	-	100%	Completed 31/12/2015

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**
Links: B0-FRTO, B1-FRTO | Key Feature: Advanced Air Traffic Services			
-			
CCL started early with FRA developments with first DCT's implemented in 2011. Since then, every year new DCT's are introduced, their validity prolonged h24, and more recently some of them are now spanning through multiple states in the region, involving FABCE states as well as other non-FAB members, for the benefit of the users.			**31/12/2015**
ASP (By:12/2017)			
CCL Service Provider	CCL started early with FRA developments with first DCT's implemented in 2011. Since then, every year new DCT's are introduced, their validity prolonged h24, and more recently some of them are now spanning through multiple states in the region, involving FABCE states as well as other non-FAB members, for the benefit of the users.	-	100%	Completed 31/12/2015

ATC02.2	**Implement ground based safety nets - Short Term Conflict Alert (STCA) - level 2 for en-route operations** ***Timescales:*** Initial operational capability: 01/01/2008 Full operational capability: 31/01/2013	**100%**	**Completed**
Links: B0-SNET | Key Feature: Advanced Air Traffic Services			
-			
The new ATM system (CroATMS) that serves for ATS provision to Zagreb ACC/APP/TWR includes the STCA capabilities. Concerning the STCA implementation other TMA Units (LDSP, LDDU, LDZD, LDPL), was planned for April 2011, and finally completed in December 2011.			**31/12/2011**
ASP (By:01/2013)			
CCL Service Provider	The new ATM system (CroATMS) that serves for ATS provision to Zagreb ACC/APP/TWR includes the STCA capabilities. STCA implementation in other TMA Units (LDSP, LDDU, LDZD, LDPL), nav12, was completed in December 2011.	-	100%	Completed 31/12/2011

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**
Links: B0-ACAS | Key Feature: Advanced Air Traffic Services				
-				
EU regulation 1332/2011 is implemented in Croatia. Operators are advised on requirements. Table of the current status of compliance with ACAS II (logic 7.1.) on Croatian registered fleet has been established.				**31/12/2013**
REG (By:12/2015)				
CCAA	Croatia implemented EU regulation 1332/2012.	-	100%	Completed 31/12/2012
ASP (By:03/2012)				
CCL Service Provider	monitoring systems are in place, training plan and training has been delivered	ATM System Upgrade	100%	Completed 31/12/2013
MIL (By:12/2015)				
Military Authority	Croatian Air Force has decommissioned transport-type aircraft, no other aircraft are TCAS II compliant.	-	%	Not Applicable -

FCM01	**Implement enhanced tactical flow management services** ***Timescales:*** Initial operational capability: 01/08/2001 Full operational capability: 31/12/2006		**100%**	**Completed**
Links: B0-NOPS | Key Feature: Optimised ATM Network Services				
-				
With the new system, CroATM the objective is completed. Not applicable to MIL.				**31/01/2010**
ASP (By:07/2014)				
CCL Service Provider	Full implementation is achieved since 01/01/2010.	-	100%	Completed 31/01/2010

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		**92%**	**Late**
Links: B0-FICE | Key Feature: Advanced Air Traffic Services				
-				
Commission Regulations (EC) No 1032/2006 and (EC) No 30/2009 are transposed in Croatian legislation. **Coordination, revision and other data exchange processes in function for sectors within ACC.** **Coordination and revision messages implemented with all adjacent ATC units.** **Initial testing of MAC message was not successful. Due to identified operational risks, testing of MAC message and associated procedures planned for Q2 2021.**				**31/12/2021**
ASP (By:12/2012)				
CCL Service Provider	Coordination, revision and other data exchange processes in function for sectors within ACC. Coordination and revision messages implemented with all adjacent ATC units. Initial testing of MAC message was not successful. Due to identified operational risks, testing of MAC message and associated procedures planned for Q2 2021.	-	92%	Late 31/12/2021
MIL (By:12/2012)				
Military Authority	Military is not involved in this objective.	-	%	Not Applicable -

Local Objectives

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

AOP14	Remote Tower Services *Applicability and timescale: Local*	%	Not Applicable
Links: B1-RATS | Key Feature: High Performing Airport Operations			
LDZA - Zagreb Airport			
no time to review the requirements, not being in applicability area			-

AOP15	Enhanced traffic situational awareness and airport safety nets for the vehicle drivers *Applicability and timescale: Local*	%	Not Applicable
Links: B2-SURF | Key Feature: High Performing Airport Operations			
LDZA - Zagreb Airport			
no time to review the requirements, not being in applicability area			-

AOP16	Guidance assistance through airfield ground lighting *Applicability and timescale: Local*	%	Not Applicable
Links: B1-RSEQ, B2-SURF | Key Feature: High Performing Airport Operations			
LDZA - Zagreb Airport			
no time to review the requirements, not being in applicability area			-

AOP17	Provision/integration of departure planning information to NMOC *Applicability and timescale: Local*	%	Not Applicable
Links: B1-ACDM, B1-NOPS | Key Feature: High Performing Airport Operations			
LDZA - Zagreb Airport			
not applicable for the airports that already deployed A-CDM or plan to deploy A-CDM in near future. AOP05 (A-CDM) is 'ongoing' for LDZA, so AOP17 set at 'not applicable'.			-

AOP18	Runway Status Lights (RWSL) *Applicability and timescale: Local*	%	Not Applicable
Links: B2-SURF | Key Feature: High Performing Airport Operations			
LDZA - Zagreb Airport			
no time to review the requirements, not being in applicability area			-

ATC18	Multi-Sector Planning En-route - 1P2T *Applicability and timescale: Local*	%	Not Applicable
Key Feature: Advanced Air Traffic Services			
-			
In CCL we do not foresee to use multi sector planner in any near future.			-

ATC19	Enhanced AMAN-DMAN integration *Applicability and timescale: Local*	%	Not yet planned
Links: B2-RSEQ | Key Feature: Advanced Air Traffic Services			
-			
Amount of operations at local airports does not require at near future enhanced AMAN-DMAN integration.			-

ATC20	Enhanced STCA with down-linked parameters via Mode S EHS *Applicability and timescale: Local*	%	Not yet planned
Links: B1-SNET | Key Feature: Advanced Air Traffic Services			
-			
ATM system is capable to use selected flight level information down-linked via Mode-S EHS protocol for STCA functionality, operational use not decided due some safety considerations.			-

ENV02	Airport Collaborative Environmental Management *Applicability and timescale: Local*	%	Not Applicable
Key Feature: High Performing Airport Operations			
LDZA - Zagreb Airport			
Zagreb airport is not in the applicability area of this objective.			-

ENV03	Continuous Climb Operations (CCO) *Applicability and timescale: Local*	%	Not Applicable
Links: B0-CCO | Key Feature: Advanced Air Traffic Services			
LDZA - Zagreb Airport			
PBN SIDs for all Croatian airports will be implemented by end 2020. Operational practice between TMA and ACC sectors provide Continuous Climb Operations up to FL200.			-

6. Annexes

A. Specialists involved in the ATM implementation reporting for Croatia

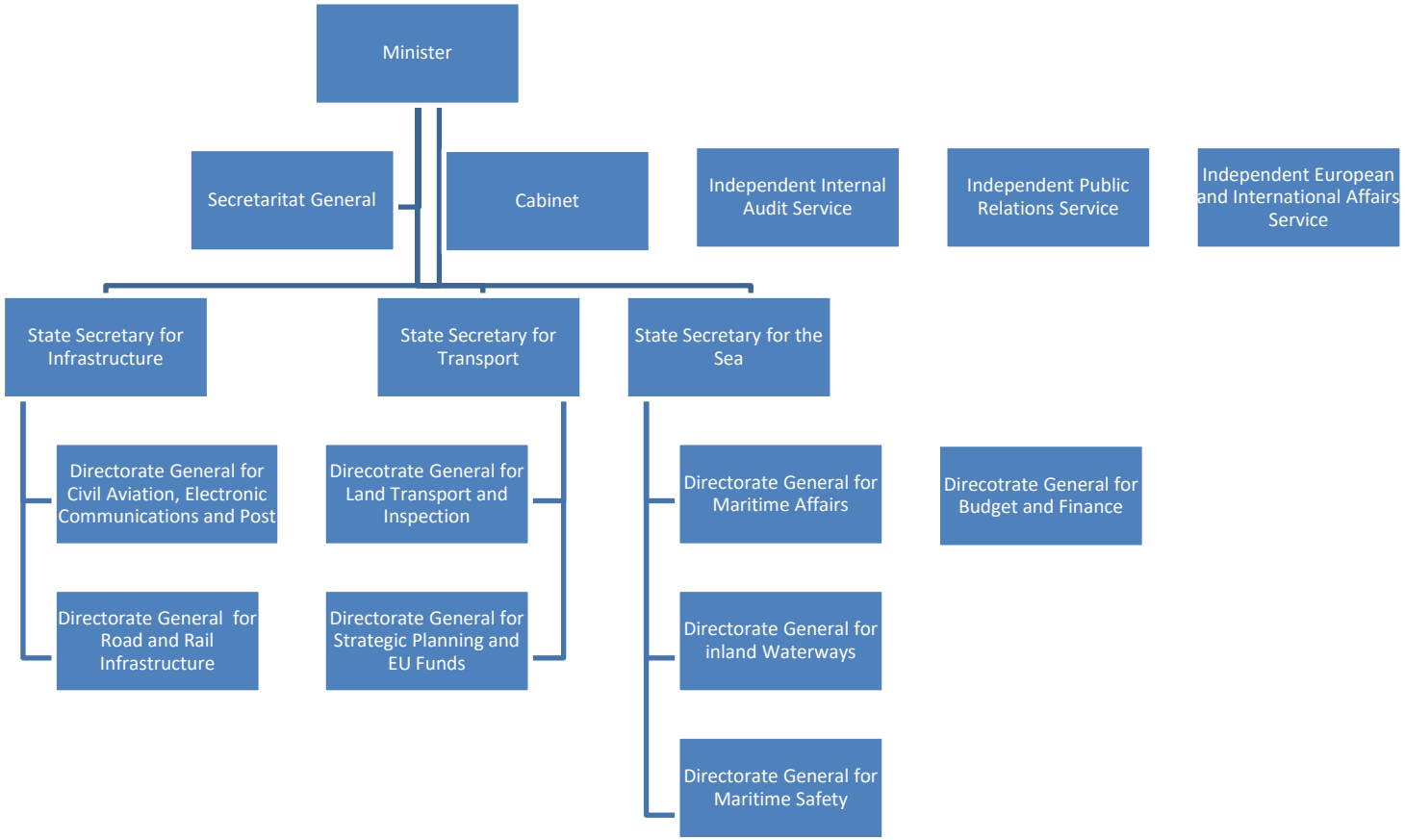
LSSIP Co-ordination

LSSIP Focal Points	Organisation	Name
LSSIP National Focal Point	DGCA	Tomislav Plavčić
LSSIP Focal Point for NSA/CAA	CCAA	Josip Šipek
LSSIP Focal Point for ANSP	Croatia Control Ltd.	Davor Crnogorac
LSSIP Focal Point for Zagreb Airport	MZLZ – Zagreb Airport Operator Ltd.	Miroslav Jerković
LSSIP Focal Point for Military	MoD	LTC Neven Brozović

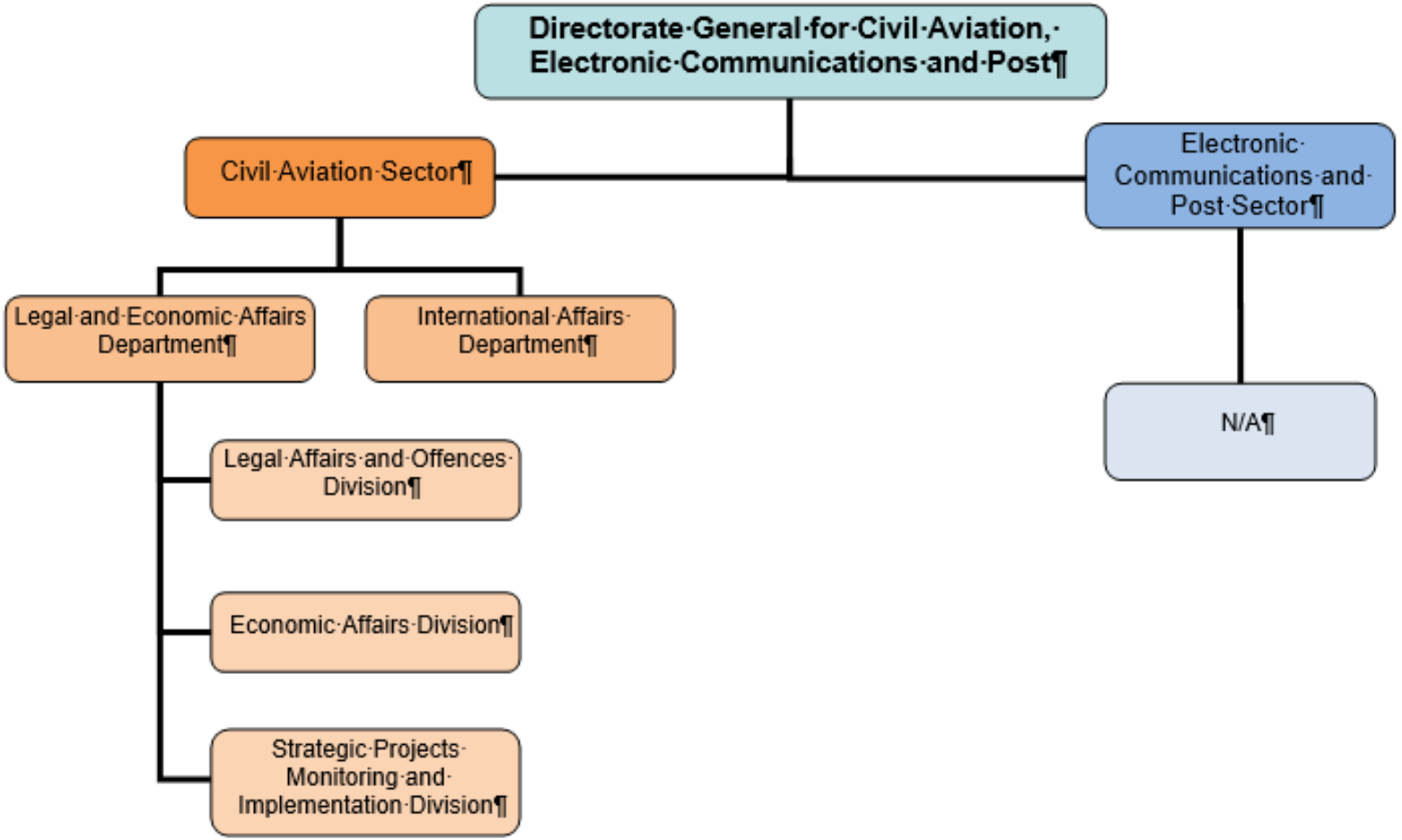
Other Focal Points	Organisation	Name
Focal Point for U-space	Croatia Control Ltd.	Mario Jurač Davor Crnogorac
Focal Point for U-space	CCAA	Vesna Bartolić
Focal Point for NETSYS		BUCIC Mate

B. National stakeholders organisation charts

MINISTRY OF THE SEA, TRANSPORT AND INFRASTRUCTURE

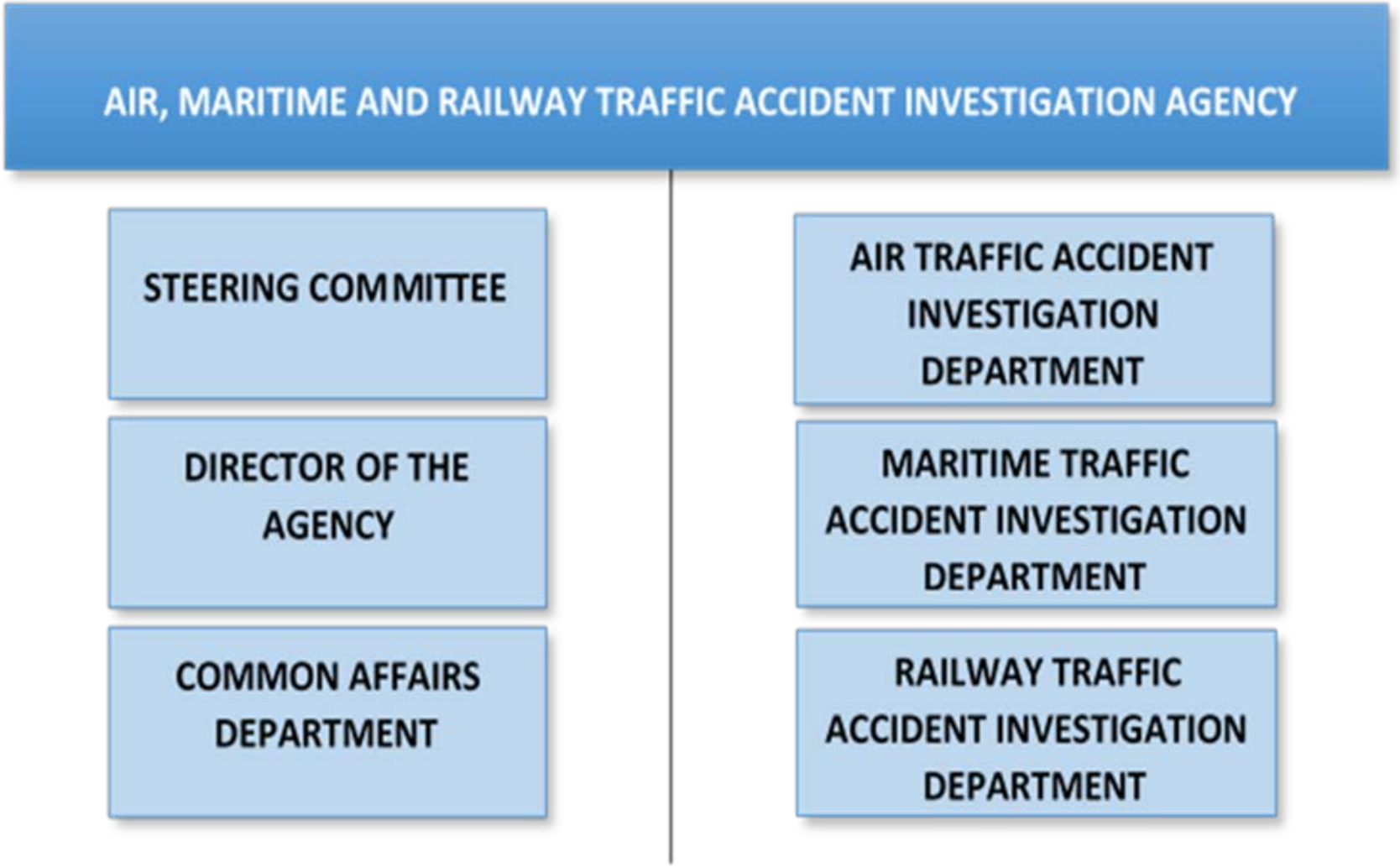


DIRECTORATE GENERAL OF CIVIL AVIATION, ELECTRONIC COMMUNICATIONS AND POST

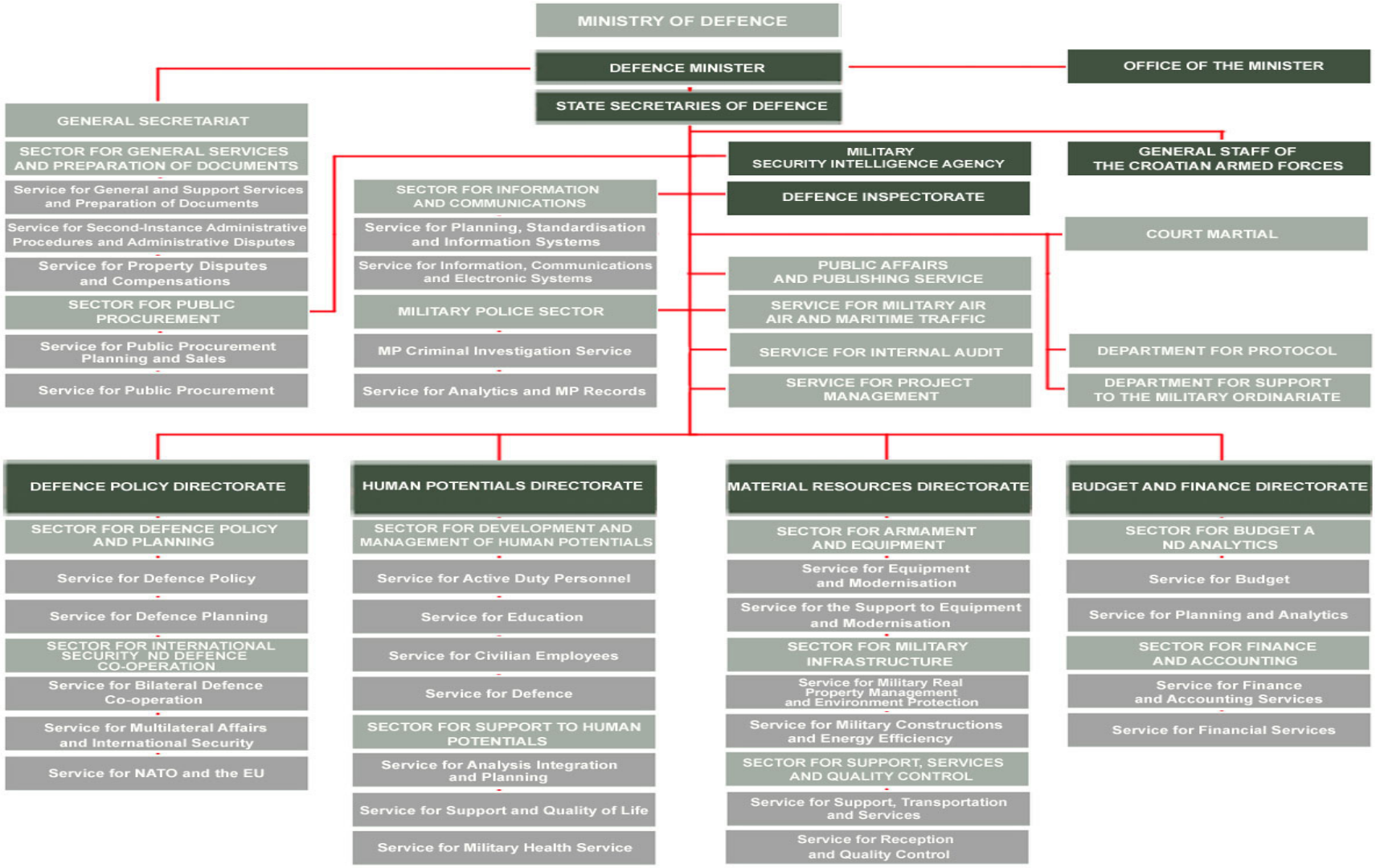


Agency Board
AB
Director
Deputy director
MGMT
Agency Office
AO
Quality and Safety Management Office
QSM
Air Traffic Security Office
SEC
Flight Authorisation Office
FAO
Flight Operations, Training, Airworthiness and Licensing
SOA
Aerodromes, Air Navigation Services and Air Traffic Management
ARANS
Legal and Coorporate Affairs
LEGCOR
Flight Operations and Training
FCD
Airworthiness
AWD
Licensing
LIC
Aeromedical
MED
Safety Assessment of Foreign Aircraft Inspection / Safety Assessment of Comunity Aircraft Inspection
RAMP
Aerodromes
AP
Air Navigation Services and Air Traffic Management
NSA
Economic Regulation and Financial Performance
ECON
Aviation Law and International Affairs
ALR
General Legal Issues, Human Resources and Registration Office
LEG
Registration Office
REG
Finance and Accounting
FIN

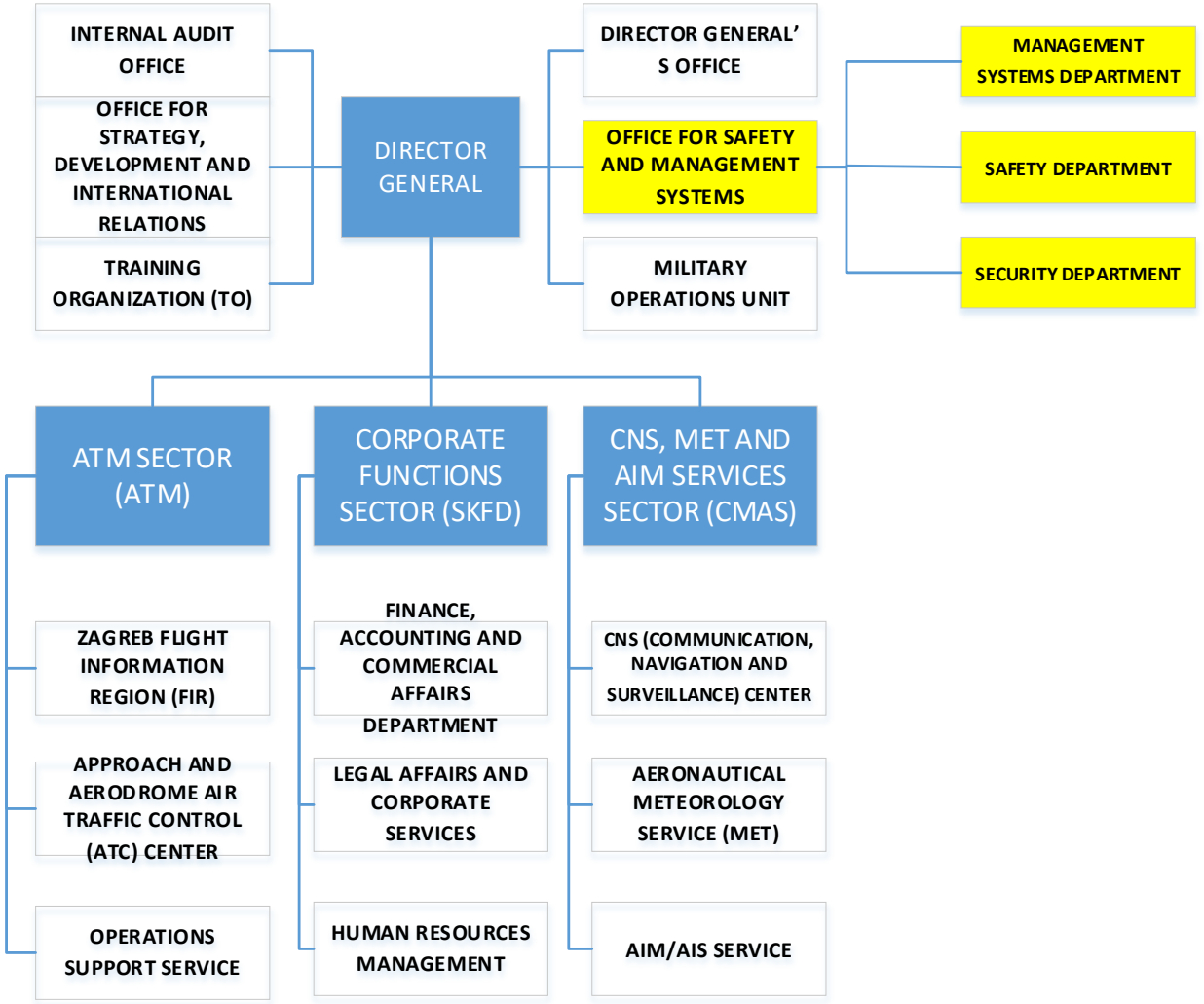
AIR, MARITIME AND RAILWAY ACCIDENT AND INCIDENT INVESTIGATION AGENCY



MINISTRY OF DEFENCE



Croatia Control Ltd. organisational chart



C. Implementation Objectives' links with SESAR KF, ASBU blocks and more

The table below (extracted from the MPL3 Progress Plan 2019) shows for each implementation objective, the links with the SESAR Key Features, Major ATM Changes, SESAR 1 Solutions, Deployment Program families, ICAO ASBU, EASA EPAS and AAS TP milestones.

Level 3 Implementation Objectives	SESAR Key Feature	Major ATM change	SESAR Solution	DP family	ICAO ASBU B0, B1, B2	EPAS	AAS TP
AOM13.1 - Harmonise OAT and GAT handling		FRA & A-FUA	-	-	-	-	-
AOM19.1 - ASM tools to support A-FUA		FRA & A-FUA	#31	3.1.1	B1-FRTO B1-NOPS	-	AM-1.8
AOM19.2 - ASM management of real-time airspace data		FRA & A-FUA	#31	3.1.2	B1-FRTO B1-NOPS	-	AM-1.8
AOM19.3 - Full rolling ASM/ATFCM process and ASM information sharing		FRA & A-FUA	#31	3.1.3	B1-FRTO B1-NOPS B2-NOPS	-	AM-1.8
AOM19.4 – Management of Pre-defined Airspace Configurations		FRA & A-FUA	#31	3.1.4	B1-FRTO B1-NOPS	-	-
FCM03 - Collaborative flight planning		ATFCM	-	4.2.3	B0-NOPS	-	AM-1.14
*FCM04.1 – STAM phase 1		ATFCM	-	4.1.1	-	-	-
FCM04.2 - STAM phase 2		ATFCM	#17	4.1.2	-	-	AM-1.11
FCM05 - Interactive rolling NOP		NOP	#20, #21	4.2.2 4.2.4	B1-ACDM B1-NOPS	-	AM-1.12
FCM06 - Traffic Complexity Assessment		ATFCM	#19	4.4.2	B1-NOPS	-	AM-1.13
FCM07 - Calculated Take-off Time (CTOT) to Target Times for ATFCM Purposes		ATFCM	#18	4.3.1 4.3.2	B1-NOPS	-	AM-1.9
FCM09 - Enhanced ATFM Slot swapping		ATFCM	#56	-	B1-NOPS	-	-

Level 3 Implementation Objectives	SESAR Key Feature	Major ATM change	SESAR Solution	DP family	ICAO ASBU B0, B1, B2	EPAS	AAS TP
*AOM21.1 - Direct Routing		Free Route	#32	3.2.1 3.2.3	B0-FRTO B1-FRTO	-	-
AOM21.2 - Free Route Airspace		Free route	#33, #66	3.2.1 3.2.4	B1-FRTO	-	AM-1.6 AM-1.10 AM-5.1
ATC02.8 - Ground based safety nets		ATM Systems	-	3.2.1	B0-SNET B1-SNET	-	-
ATC02.9 – Enhanced STCA for TMAs		ATM Systems	#60	-	B0-SNET B1-SNET	MST.030	-
ATC07.1 - Arrival management tools		Enhanced Arrival Seq	-	1.1.1	B0-RSEQ	-	-
ATC12.1 - MONA, TCT and MTCD		ATM Systems	#27, #104	3.2.1	B1-FRTO	-	AM-1.15 AM-5.1
ATC15.1 – Initial extension of AMAN to En-route		Enhanced Arrival Seq	-	1.1.2	B1-RSEQ	-	-
ATC15.2 - Extension of AMAN to En-route		Enhanced Arrival Seq	#05	1.1.2	B1-RSEQ	-	AM-1.3
ATC17 - Electronic Dialog supporting COTR		Free Route	-	3.2.1	-	-	AM-1.3
ATC18 – Multi Sector Planning En-route – 1P2T		Free Route	#63	-	-	-	AM-4.3 AM-5.1
ATC19 - Enhanced AMAN-DMAN integration		Enhanced Arrival Seq	#54	-	B2-RSEQ	-	-
ATC20- Enhanced STCA with down-linked parameters via Mode S EHS		ATM Systems	#69	-	B1-SNET	-	-
ENV01 – Continuous Descent Operations		PBN	-	-	B0-CDO B1-CDO	-	-
ENV03 – Continuous Climb Operations		PBN	-	-	B0-CCO	-	-
NAV03.1 – RNAV1 in TMA Operations		PBN	#62	-	B0-CDO B0-CCO B1-RSEQ	RMT.0639 RMT.0445	-

Level 3 Implementation Objectives	SESAR Key Feature	Major ATM change	SESAR Solution	DP family	ICAO ASBU B0, B1, B2	EPAS	AAS TP
NAV03.2 – RNP1 in TMA Operations		PBN	#09, #51	1.2.3 1.2.4	B1-RSEQ	RMT.0639 RMT.0445	-
NAV10 - RNP Approach Procedures to instrument RWY		PBN	#103	1.2.1 1.2.2	B0-APTA	RMT.0639 RMT.0445 RMT.0643	-
NAV12 – ATS IFR Routes for Rotorcraft Operations		PBN	#113	-	B1-APTA	MST.031	-
AOP04.1 - A-SMGCS Surveillance (former Level 1)		Surface mgt	#70	2.2.1	B0-SURF	-	-
AOP04.2 - A-SMGCS RMCA (former Level 2)		Surface mgt	-	2.2.1	B0-SURF	-	-
AOP05 - Airport CDM		Collaborative Apt	#106	2.1.1 2.1.3	B0-ACDM B0-RSEQ	-	-
AOP10 - Time Based Separation		Enhanced ops in vicinity of rwy	#64	2.3.1	B1-RSEQ B2-WAKE	-	-
AOP11 - Initial Airport Operations Plan		Collaborative Apt	#21	2.1.4	B1-ACDM	-	-
AOP12 - Improve RWY and Airfield safety with CATC detection and CMAC		Surface mgt	#02	2.1.2 2.5.1	B2-SURF	-	-
AOP13 – Automated assistance to Controller for Surface Movement planning and routing		Surface mgt	#22 #53	2.4.1	B1-ACDM B1-RSEQ B2-SURF	-	-
AOP14 – Remote Tower Services		Remote Tower	#12, #71, #52, #13	-	B1-RATS	RMT.0624	-
AOP15 - Enhanced traffic situational awareness and airport SNET for the vehicle drivers		Surface mgt	#04	-	B2-SURF	-	-
AOP16 - Guidance assistance through airfield ground lighting		Surface mgt	#47	-	B1-RSEQ B2-DURF	-	-
AOP17 - Provision/integration of departure planning information to NMOC		Collaborative Apt	#61	-	B1-ACDM B1-NOPS	-	-

Level 3 Implementation Objectives	SESAR Key Feature	Major ATM change	SESAR Solution	DP family	ICAO ASBU B0, B1, B2	EPAS	AAS TP
AOP18 - Runway Status Lights (RWSL)		Surface mgt	#01	-	B2-SURF	-	-
ENV02 – Airport Collaborative Environmental Management		Collaborative Apt	-	-	-	-	-
NAV11 - Implement precision approach using GBAS CAT II/III based on GPS L1		Enhanced ops in vicinity of rwy	#55	-	B1-APTA	-	-
SAF11 - Improve runway safety by preventing runway excursions		Surface mgt	-	-	-	MST.007 RMT.0570 RMT.0703	-
COM10 - Migration from AFTN to AMHS		CNS rat.	-	-	-	-	-
COM11.1 - Voice over Internet Protocol (VoIP) in En-Route		CNS rat.	-	3.1.4	-	-	AM-1.3
COM11.2 - Voice over Internet Protocol (VoIP) in Airport/Terminal		CNS rat.	-	-	-	-	-
COM12 - NewPENS		Pre-SWIM & SWIM	-	5.1.2 5.2.1	B1-SWIM	-	-
FCM08 – Extended Flight Plan		Pre-SWIM & SWIM	#37	4.2.3	B1-FICE	-	AM-1.4
INF07 - Electronic Terrain and Obstacle Data (e-TOD)		Pre-SWIM & SWIM	-	1.2.2	-	RMT.0703 RMT.0704 RMT.0722	-
INF08.1 - Information Exchanges using the SWIM Yellow TI Profile		Pre-SWIM & SWIM	#35, #46	5.1.3, 5.1.4, 5.2.1, 5.2.2, 5.2.3, 5.3.1, 5.4.1, 5.5.1, 5.6.1	B1-DATM B1-SWIM	-	AM-1.5

Level 3 Implementation Objectives	SESAR Key Feature	Major ATM change	SESAR Solution	DP family	ICAO ASBU B0, B1, B2	EPAS	AAS TP
INF08.2 - Information Exchanges using the SWIM Blue TI Profile		Pre-SWIM & SWIM	#28, #46	5.1.3, 5.1.4, 5.2.1, 5.2.2, 5.2.3, 5.6.2	B1-DATM B1-SWIM	-	AM-9.1
INF09 - Digital Integrated Briefing		Pre-SWIM & SWIM	#34	-	B1-DATM B1-SWIM	-	-
ITY-ACID - Aircraft identification		CNS rat.	-	-	-	-	-
ITY-ADQ - Ensure quality of aeronautical data and aeronautical information		Pre-SWIM & SWIM	-	1.2.2	B0-DATM	RMT.0722 RMT.0477	-
ITY-AGDL - Initial ATC air-ground data link services		Data link	-	6.1.1 6.1.3 6.1.4	B0-TBO	RMT.0524	AM-1.1
ITY-AGVCS2 – 8.33 kHz Air-Ground Voice Channel Spacing below FL195		CNS rat.	-	-	-	-	-
ITY-FMTP - Apply a common flight message transfer protocol (FMTP)		Pre-SWIM & SWIM	-	-	B0-FICE B1-FICE	-	AM-1.3
ITY-SPI - Surveillance performance and interoperability		CNS rat.	-	-	B0-ASUR	RMT.0679 RMT.0519	-

* *AOM21.1 was achieved in 2017 and FCM04.1 was achieved in 2018, therefore they were removed from the Implementation Plan 2018/2019. They are kept in this table for traceability purposes.*

Legend:

Objective's link to SESAR Key Feature:			
	Optimised ATM Network Services		High Performing Airport Operations
	Advanced Air Traffic Services		Enabling Aviation Infrastructure

D. Implementation of U-Space Services

This annex provides an overview of the current implementation progress and short to medium term planning information on the main elements underlying the provision of the 16 U-Space services enabling Very Low Level drones operations. Those elements are expected to be available in phases U1 (2019) to U3 (2025) as described in the European ATM Master Plan add-on: Roadmap for the safe integration of drones into all classes of airspace.

Phase	Service	Service Element	Progress	Implementation Date	Comment
U1	e-Registration	Registration enforcement implemented	Completed	15-12-2018	In the absence of EU regulation, national regulation enforced registration for certain categories of UAS and UAS operators. After the publication of EU UAS regulation, national regulation is already in line with EU regulation.
U1	e-Registration	Remote Identification system add-on registration service available (i.e. device physical serial number)	Completed	15-12-2018	Serial numbers of UA are required during registration and stored in database.
U1	e-Registration	UA online registration service available	Completed	01-06-2019	Available through NSA online tool.
U1	e-Registration	UAS operator online registration service available	Completed	01-06-2019	Available through NSA online tool.
U1	e-Registration	UAS operator registration procedure implemented (e.g. national registration number)	Completed	01-06-2019	Available through NSA online tool and its database.

Phase	Service	Service Element	Progress	Implementation Date	Comment
U1	e-Identification	Authority in charge of issuing and managing identification numbers (i.e. code allocation and coordination) established	Completed	15-12-2018	Designated authority is the NSA.
U1	e-Identification	E-identification enforcement implemented	Completed	15-12-2018	E-identification functionalities are enforced through national Airspace Management regulation.
U1	e-Identification	The identification service includes the localisation of the drones (i.e. position and time stamp)	Completed	01-02-2019	Identification service is implemented through ASM procedures and functions of the AMC Portal system. Position of the drone is localized within defined UAS operation area. Each flight within area is notified to the national ASM thru mobile application, with real time status.
U1	Pre-tactical geo-fencing	Geo-limitation database available	Completed	01-06-2017	Database is available through AMC Portal system functionalities.
U1	Pre-tactical geo-fencing	Pre-defined restricted areas implementation	Completed	01-06-2017	Available through AMC Portal system functionalities.
U1	Pre-tactical geo-fencing	User access to AIP and NOTAM provided (i.e. to feed drones embedded geofencing features)	Completed	01-02-2019	Available through mobile application of AMC Portal system.

Phase	Service	Service Element	Progress	Implementation Date	Comment
U2	Tactical geo-fencing	Geo-awareness information available (e.g. geofence and flight restriction information provided up to the moment of take-off)	Completed	01-02-2019	Available through AMC Portal system mobile application. (Was available thru web page before that date.)
U2	Tactical geo-fencing	Real-time pre-defined restricted areas information data feed available	Completed	01-02-2019	Available through AMC Portal system mobile application. (Was available thru web page before that date.)
U2	Tactical geo-fencing	Restricted area infringement notification implemented (based on ownship data)	Ongoing	01-01-2022	
U2	Flight planning management	Airspace authorisation and flight planning approval processes available	Completed	01-02-2019	Was available through the AMC Portal system before 2019. Since 01/02/2019 available through AMC Portal system mobile application in real time.
U2	Flight planning management	Automated flight plan validation capability available	Ongoing	01-01-2022	
U2	Flight planning management	Digital notification (i.e. digital NOTAM) capability available	Completed	01-02-2019	AMC Portal mobile application sends digital notifications in real time.
U2	Flight planning management	Flight plan preparation/optimisation capabilities available	Planned	01-01-2022	

Phase	Service	Service Element	Progress	Implementation Date	Comment
U2	Flight planning management	Flight planning support publications available (e.g. obstacles maps; population density maps; risk reduction)	Planned	01-01-2023	
U2	Weather information	Collection of weather information from different stakeholders implemented (including return of weather info drone to UTM)	Planned	01-01-2023	
U2	Weather information	Hyperlocal weather information available	Planned	01-01-2022	
U2	Weather information	Low-altitude wind forecasting information available	Ongoing	01-06-2020	
U2	Weather information	Predictive weather hazard alerts at planned drone mission sites available	Planned	01-01-2021	
U2	Weather information	Real-time low-altitude wind actual information available	Ongoing	01-01-2022	
U2	Tracking	Cooperative UAS positioning infrastructure available	Completed	01-02-2019	

Phase	Service	Service Element	Progress	Implementation Date	Comment
U2	Tracking	Non-cooperative UAS tracking capabilities available (e.g. at airports; high value assets)	Planned	01-01-2021	
U2	Tracking	Real-time tracking capabilities available (e.g. location reports; data fusion from multiple sources)	Planned	01-01-2021	
U2	Tracking	Surveillance data exchange interface available (i.e. capability to exchange data among the tracking service and other services/systems)	Ongoing	01-01-2021	
U2	Tracking	Tracking data recording capability implemented	Ongoing	01-01-2021	
U2	Monitoring	Air situation-monitoring capability available (depending on the level of tracking available. See U2 Tracking capabilities)	Completed	01-02-2019	
U2	Monitoring	Alert/Report line available	Completed	01-02-2019	

Phase	Service	Service Element	Progress	Implementation Date	Comment
U2	Monitoring	Flight non-conformance detection capability available	Planned	01-01-2021	
U2	Monitoring	Non-cooperative drones identification capability available to law enforcement, regulatory authority and service providers	Planned	01-01-2021	
U2	Monitoring	Provision of traffic information to UAS operators implemented	Ongoing	01-06-2020	
U2	Monitoring	Restricted area infringement detection capability available (based on surveillance data)	Planned	01-01-2021	
U2	Drone aeronautical information management	UTM-relevant dynamic aeronautical data available (i.e. provision of information to geofencing and mission planning services)	Completed	01-02-2019	
U2	Drone aeronautical information management	UTM-relevant static aeronautical data available	Completed	01-02-2019	

Phase	Service	Service Element	Progress	Implementation Date	Comment
U2	Procedural interface with ATC	ATC/UAS coordination procedures defined according to airspace classification	Completed	01-10-2019	
U2	Procedural interface with ATC	Emergency and contingency procedures implemented	Completed	01-10-2019	
U2	Procedural interface with ATC	Flight notification procedures to nearby airports operators (i.e. AFIS; ATC; FIS) implemented	Completed	01-10-2019	
U2	Procedural interface with ATC	Pre-tactical controlled airspace access coordination processes available	Completed	01-10-2019	
U2	Procedural interface with ATC	Rules awareness service adapted to specific areas, time, type of operations	Completed	01-10-2019	
U2	Procedural interface with ATC	UAS access conditions prescription (for specific volumes of airspace) implemented	Completed	01-10-2019	
U2	Emergency management	Emergency alert line available	Completed	01-02-2019	

Phase	Service	Service Element	Progress	Implementation Date	Comment
U2	Emergency management	Provision of assistance information to UAS operator in case of emergency implemented	Completed	01-02-2019	
U2	Strategic de-confliction	Manned-unmanned aircraft deconfliction capability available	Completed	01-02-2019	Through ASM procedures.
U2	Strategic de-confliction	Pre-flight information provision involving de-confliction management function	Planned	01-01-2023	
U2	Strategic de-confliction	Strategic de-confliction capabilities based on mission plans analysis (e.g. conflicts identification; solution proposal) available	Planned	01-01-2023	
U3	Dynamic geo-fencing	Datalink connectivity to geofencing function implemented (e.g. through dedicated web service)	Not yet Planned		

Phase	Service	Service Element	Progress	Implementation Date	Comment
U3	Dynamic geo-fencing	Live dynamic restricted areas information data feed available for real-time flight path adjustments	Not yet Planned		
U3	Dynamic geo-fencing	Up-to-date guidance information including safety concerns (e.g. forest fires; major events; VIP travel) provided	Completed	01-02-2019	Available through AMC Portal mobile application
U3	Collaborative Interface with ATC	ATC alert notification implemented	Completed	01-09-2019	
U3	Collaborative Interface with ATC	Global air situation monitoring capabilities available	Ongoing	01-01-2021	
U3	Tactical de-confliction	de-confliction management information transmition from the USSP to the UAS	Not yet Planned		
U3	Tactical de-confliction	de-confliction management information transmition in real-time	Not yet Planned		
U3	Dynamic capacity management	Airspace capacity monitoring capability available	Not yet Planned		

Phase	Service	Service Element	Progress	Implementation Date	Comment
U3	Dynamic capacity management	Management for capacity due to non-nominal occurrences, such as weather hazards or emergency situations	Not yet Planned		
U3	Dynamic capacity management	UAS traffic complexity assessment capability available	Not yet Planned		
U3	Dynamic capacity management	demand and capacity management implemented	Not yet Planned		
U3	Dynamic capacity management	near-real-time flight authorization capability available	Completed	01-09-2019	

E. SESAR Solutions implemented in a voluntary way[6]

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.

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

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where implementation is planned - If "N/A" please provide justification
		High Performing Airport Operations		
#23	D-TAXI service for controller-pilot datalink communications (CPDLC) application	Use of data link communications between the Tower Controllers and the flight crew during surface movement. It is based on the D-TAXI service from the CPDLC application, as standardised by RTCA SC214/EUROCAE WG78 (DO-350 & DO-351). It also includes the access to this service for end users, through the Tower CWP for the ATCO and through the aircraft DCDU for the flight crew.	N	N
#48	Virtual block control in low visibility procedures (LVPs)	In low visibility conditions, the tower controller working positions are provided with Virtual Stop Bars (VSB) to improve low visibility operations and enhance controllers¿ situational awareness. Virtual Stop Bars can be used by the controller to reduce block-sizes once procedural control applies. Additional controller safety nets will be available to indicate violations of Stop Bars (including Virtual Stop Bars) and to monitor aircraft for any kind of unauthorised movement (Watch Dog).	N	N

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

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where implementation is planned - If "N/A" please provide justification
#116	De-icing management tool	The solution increases the accuracy of information related to when the procedure is going to take place, how long it will take and when the aircraft will be ready to taxi for departure, which is currently calculated by predetermined estimates. The solution means that air traffic controllers no longer need to work without situational awareness of de-icing activities and needing to make their own estimates of when aircraft are ready for departure. The solution envisages that de-icing operations are no longer characterised by the A-CDM concept as 'adverse conditions', i.e. a state that is in need of collaborative recovery procedures, but rather a part of normal operations in the winter period. The DIMT allows for the scheduling and monitoring of de-icing operations. It is an internet browser-based tool that addresses three distinct procedures for de-icing: - Remote de-icing, which occurs at a specific location on the airport away from the parking stand; - On-stand de-icing, which occurs just before the aircraft leaves its stand; and - After-push de-icing, which occurs after the aircraft has pushed back from the stand and is positioned to start taxiing after de-icing.	N	N
#117	Reducing Landing Minima in Low Visibility Conditions using Enhanced Flight Vision Systems (EFVS)	The SESAR Solution "Reducing landing minima in low visibility conditions using enhanced Flight vision systems (EFVS)" is intended for flight crews, and corresponds to the use of EFVS visual based technologies displayed in HUD or an equivalent display system. The objective is to provide operational credit in approach as permitted per EASA EU 965/2012 and its coming amendments (NPA 2018-06 AWO) to face to Low visibility conditions. Enabling EFVS operations with operational credits provides a greater availability of suitable destination and alternate aerodromes during periods of reduced visibility. This effectively reduces the number of weather-related delays, cancellations or diversions of flights to CAT II/III	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where implementation is planned - If "N/A" please provide justification
		aerodromes, permits shorter routings and reduced fuel costs, a faster return to scheduled operations, and less passenger inconveniences. A unique advantage of the EFVS on board solution is that it is mainly supported by the aircraft system instead of airports and the need of complex and costly ground infrastructures as those implemented in CATII/III airports. From a global ATM network standpoint, the EFVS operation allows to retain traffic at most of secondary aerodromes by providing operational credit at most of runway ends with precision or non-precision landing minima (LPV, LNAV/ VNAV, ILS CAT1,…). The operational credit provided by EFVS is particularly important regarding secondary aerodromes because they usually have CAT1 or higher than CAT 1 RVR ¿ DA/DH minima and are therefore potentially more frequently impacted by adverse weather conditions. In addition, EFVS capability is a key operational advantage more especially for the business aviation community that is mainly composed of small/ medium operators with limited resources and operating frequently at small/ medium airports. Beyond operational credit, the Vision Systems such as the EFVS improves situational awareness in all weather conditions for all operators at all airports contributing supporting decision-making and increasing safety margin all the time.		
		Advanced Air Traffic Services		
#06	Controlled time of arrival (CTA) in medium-density/ medium-complexity environments	The CTA (Controlled Time of Arrival) is an ATM imposed time constraint on a defined point associated with an arrival runway, using airborne capabilities to improve arrival management. When a time constraint is needed for a flight, the ground system may calculate a CTA as part of the arrival management process, and then it may be proposed to the flight	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where implementation is planned - If "N/A" please provide justification
		for achievement by avionics within required accuracy. Airborne information may be used by the ground system in determining the CTA (e.g. ETA min/max) and in monitoring the implementation of the CTA.		
#08	Arrival management into multiple airports	The system provides support to coordination of traffic flows into multiple airports to enable a smooth delivery to the runways. The 'Center Manager' (CMAN) which accompanies the AMANs of the airports generates a combined planning for several arrival streams into different airports by calculating the sequence of aircraft flying towards an area where their routes intersect. By imposing an adequate spacing of the aircraft in that area, a Time To Lose (TTL) for the appropriate upstream E-TMA sector is calculated to meet this constraint. Both AMAN-TTL for the runway and TTL for the E-TMA sector are superimposed and presented to the upstream en-route sector controllers.	N	N/A When applicable indivual AMMANs will be operational for each individual relevant airport
#10	Optimised route network using advanced RNP	Based on Advanced-RNP navigation specification, design of optimised routes e.g. spaced parallel routes, Fixed Radius Transition (FRT) and Tactical Parallel Offset (TPO) further enhanced by onboard performance monitoring and alerting and the execution of more predictable aircraft behaviour	N	N/A No routes in operation, FRA operational
#11	Continuous descent operations (CDO) using point merge	Progressive implementation of procedures for Continuous Descent Operations (CDO) and Continuous Climb Operations (CCO) in higher density traffic or to higher levels, optimised for each airport arrival/departure procedure	N	N
#105	Enhanced airborne collision avoidance system (ACAS) operations using the autoflight system	New altitude capture laws aim to reduce unnecessary ACAS alarms and reduce the risk of mid-air or near mid-air collisions between aircraft as a last-resort safety net, by automatically reducing the vertical rate at the approach of the selected flight level (only when a Traffic Advisories-TA occurs), leading to less traffic perturbation, while not increasing flight crew workload.	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where implementation is planned - If "N/A" please provide justification
#107	Point merge in complex terminal airspace	This new procedure design builds upon precision navigation technology (P-RNAV concept) for merging traffic into a single entry point, which allows efficient integration and sequencing of inbound traffic together with Continuous Descent Approaches (CDA).	N	N
#108	Arrival Management (AMAN) and Point Merge	Point Merge in high density environment and complex Extended TMA (E-TMA) sectors replaces radar vectoring with a more efficient and simplified traffic synchronisation mechanism that reduces communication workload and increases collective traffic predictability.	N	N
#118	Basic EAP (Extended ATC Planning) function	The basic Extended ATC Planner aims at bridging the gap between Air Traffic Flow and Capacity Management (ATFCM) and Air Traffic Control (ATC) providing real-time and fine-tuning measures to solve ATFCM hotspots and to perform early measures to alleviate complexity closest to ATC activities. The solution consists of an automated tool and associated procedures supporting the basic communication between the Local DCB position and the Controllers' Work Positions allowing the EAP and the ATC team in identifying, assessing and resolving local complexity situations. The basic EAP relies on a real time integrated process for managing the complexity of the traffic with capability to reduce traffic peaks through early implementation of fine-tuned solutions to solve workload imbalances at the local level, compatible with the short-term timeframe of execution phase of the flights.	N	N
		Optimised ATM Network Services		
#57	User-driven prioritisation process (UDPP) departure	Airspace Users are allowed to change among themselves (via the pre-departure management process in CDM airports) the priority order of flights in the pre-departure sequence. The departure time will be automatically communicated/coordinated with the Network Management Function (NMF) via the DPI message as described in the A-CDM concept.	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where implementation is planned - If "N/A" please provide justification
		Enabling Aviation Infrastructure		
#67	AOC data increasing trajectory prediction accuracy	Europe's vision to achieve high-performing aviation by 2035 builds on the idea of trajectory-based operations – meaning that aircraft can fly their preferred trajectory while minimising constraints due to airspace and service configurations. SESAR has introduced an early version, which makes use of flight planning data sourced from airline operational control (AOC) to help controllers optimise aircraft flight paths. This solution represents an initial step towards the extended flight plan solution and flight and flow information for a collaborative environment (FF-ICE).	N	N
#100	ACAS Ground Monitoring and Presentation System	The ACAS provides resolution advisories (RAs) to pilots in order to avoid collisions. Controllers rely on pilots to report RAs by radio as they occur in accordance with ICAO regulations. However these reports can come late, incomplete or are, absent in some instances. This solution consists of a set of monitoring stations and a server system, which enable the continuous monitoring and analysis of ACAS RAs and coordination messages between airborne units from the ground.	N	N
#101	Extended hybrid surveillance	This solution consists of an enhanced TCAS capability, adding passive surveillance methods and reducing the need for active Mode-S interrogations. By making fewer active interrogations, this solution allows the aircraft to significantly reduce the usage of the 1090 MHz frequency.	N	N
#102	Aeronautical mobile airport communi-cation system (AeroMACS)	The aeronautical mobile airport communication system (AeroMACS) offers a solution to offload the saturated VHF datalink communications in the airport environment and support new services. The technical solution AeroMACS is based on commercial 4G technology and uses the IEEE 802.16 (WiMAX) standard. Designed to operate in reserved (aeronautical) frequency bands, AeroMACS can be used for ANSPs, airspace users and airport authority communications, in compliance with SESAR's future communication infrastructure (FCI) concept. AeroMACS is an international standard and supports	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where implementation is planned - If "N/A" please provide justification
		globally harmonised and available capabilities according to ICAO Global Air Navigation Plan (GANP).		
#109	Air traffic services (ATS) datalink using Iris Precursor	The Iris Precursor offers a viable option for ATS datalink using existing satellite technology systems to support initial four-dimensional (i4D) datalink capability. The technology can be used to provide end-to-end air–ground communications for i4D operations, connecting aircraft and air traffic management ground systems.	N	N
#110	ADS-B surveillance of aircraft in flight and on the surface	The SESAR solution consists of the ADS-B ground station and the surveillance data processing and distribution (SDPD) functionality. The solution also offers mitigation techniques against deliberate spoofing of the ground system by outside agents. These techniques can also be used to cope with malfunctioning of avionics equipment. SESAR has contributed to the relevant standards, such as EUROCAE technical specifications, incorporating new functionalities developed for the ADS-B ground station, ASTERIX interface specifications as well as to the SDPD specifications.	N	N
#114	Composite Surveillance ADS-B / WAM	By allowing the use of ADS-B data that has been validated against data derived in parallel by a WAM system, the system can help to reduce the number of interrogations and number of replies and therefore reduce the 1030/1090 MHz RF load and improve spectrum efficiency. It achieves this through the integration of validated data items into the WAM channel, thereby preventing a need to re-interrogate the data item. Since the two surveillance layers share hardware components, the system offers improved cost efficiency. Furthermore, the use of the system contributes to an improved security by successfully mitigating associated ADS-B threats. SESAR has contributed to the relevant standards, such as EUROCAE technical specifications for WAM and ADS-B that are implementing this "composite" concept.	N	N

F. Military Organisations Infrastructure

This Annex is not produced in 2019. It will be updated every second year, therefore it will be produced as part of the LSSIP 2020 document.

In case information is sought on military infrastructure, previous LSSIP may be made available upon request to the respective Focal Point and/or Contact Person.

G. Glossary of abbreviations

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

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

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

Term	Description
ADS	Automatic Dependent Surveillance
APT	Airport Operations (domain)
ARN	ATS Route Network
CCAA	Croatian Civil Aviation Agency
CCL	Croatia Control Ltd.
COM	Communications (domain)
CP	Contact Person
DGCA	Directorate General for Civil Aviation, Electronic Communications and Postal Services
ECAA	European Common Aviation Area
ESSIP	European Single Sky ImPlementation
ESARR	EUROCONTROL Safety Regulatory Requirements
FAB CE	Functional Airspace Block Central Europe
FT	Fast Track
JAA	Joint Aviation Authorities
MIL	Military
MSTI	Ministry of the Sea, Transport and Infrastructure
MS	Member State
MSAW	Minimum Safe Altitude Warning
MSSR	Monopulse Secondary Surveillance Radar
MTCD	Medium Term Conflict Detection
OPS	Operations
OR	Operational Requirements
PC	Provisional Council
PCP	Pilot Common Project
PDP	Preliminary Deployment Programme
PSR	Primary Surveillance Radar
R&D	Research and Development
REG	Regulatory Authority
S-AF	Sub ATM Functionality
SLoA	Stakeholder Line of Action
SSR	Secondary Surveillance Radar
SUR	Surveillance (domain)
USE	Airspace User
VDL	VHF data link
VOR	VHF Omni directional Range