EUROCONTROL

LSSIP 2019 REPUBLIC OF NORTH MACEDONIA

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).

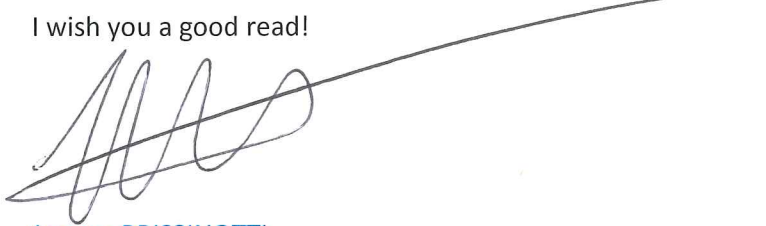
These documents provide an extensive and harmonised picture, for the benefit of the ATM community at large, of how all ECAC States as well as States having a Comprehensive Agreement with EUROCONTROL, and stakeholders concerned, are progressing in planning and deploying the mature elements of the European 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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Director NM – Network Manager
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Reference Documents	
LSSIP Documents	https://www.eurocontrol.int/service/local-single-sky-implementation-monitoring
Master Plan Level 3 – Plan Edition 2019	https://www.eurocontrol.int/publication/european-atm-master-plan-implementation-plan-level-3-2019
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.mnavigation.mk/Data/Sites/1/media/eaip/start.htm

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
CAA	Tomislav TUNTEV	Director General	
M-NAV	Nikolche TASESKI	President of M-NAV Management Board	19.03.20

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Executive Summary

National ATM Context

Member State of:

Main national stakeholders:

- Civil Aviation Agency (CAA)
- Air Navigation Service Provider of the Republic of North Macedonia (M-NAV)
- Military Authorities
- Airport Operators

Main airport covered by LSSIP: International Airport Skopje and Ohrid “St. Paul the Apostle” airport.

Traffic and Capacity

Summer Forecast (May to October inclusive)

Per ACC

Number of national projects: 7

Summary of 2019 developments:

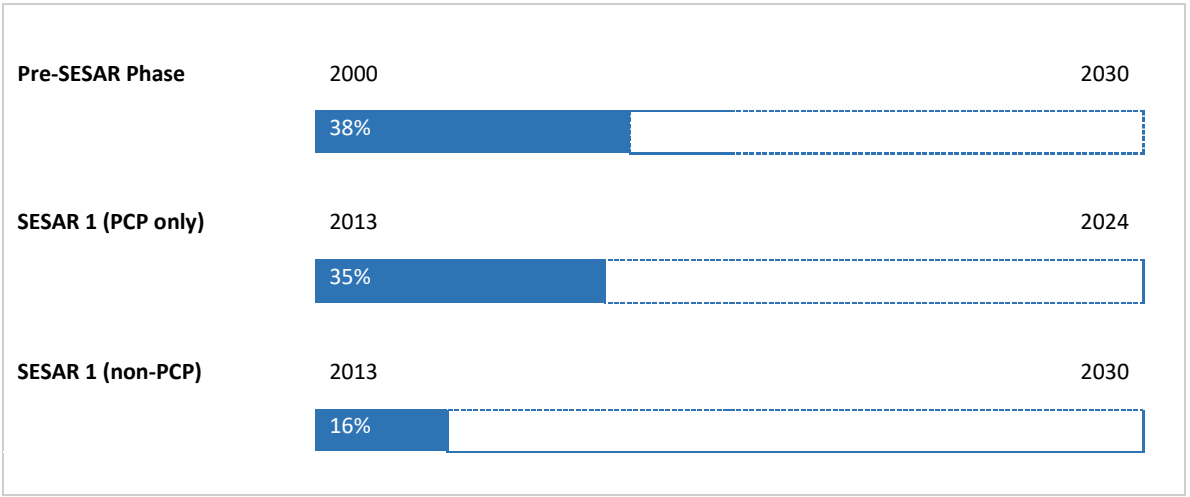
- As a major development regarding the projects in North Macedonia is the finalization of a certain phases of the new ATM system implementation. After conducting 5 SDR (system Design Review) sessions), the progress is rather significant and during the Q1of 2020, it is expected the Customisation visit/meeting to take place at the Contractor site. At the same time, it is expected the construction of the new operational and technical building to take place. All other projects are progressing in the expected manner.
- New ATCOs employed, currently under OJT trainings.
- The main national stakeholders, the ANSP, M-NAV and the regulator CAA have conducted some organisational changes in the structure of the organization, visible in the new organisational charts provided bellow.
- The Republic of North Macedonia started some activities towards accession into Blue Med FAB. During 2019, several meetings took place, with active participation from our State. A letter for acquiring associated member in the FAB, was submitted for approval from the member states. The process is ongoing, with expected final realisation in the period that follows.
- As for the legislative changes, during the previous year, no new Implementing Regulations were introduced into national legislation.

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.

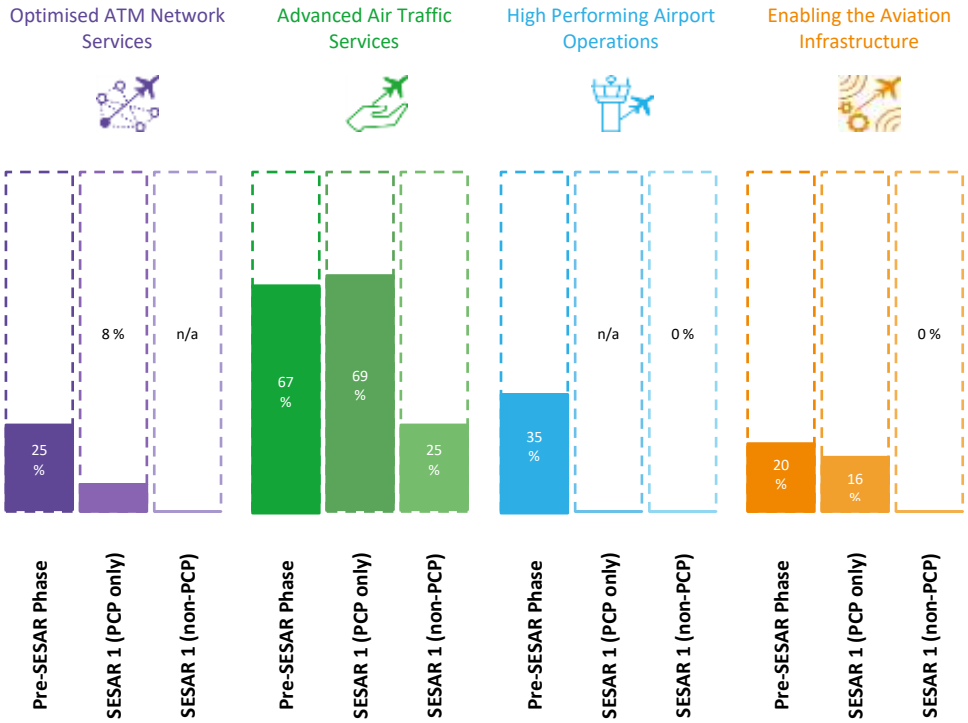
It shows the average implementation progress for all objectives grouped by SESAR Phases, excluding those for which the State is outside the applicability area as defined on a yearly basis in the European ATM Master Plan (Level 3) 2019, i.e. disregarding the declared “NOT APPLICABLE”.LSSIP progress status.

The SESAR 1 (non-PCP) progress in the graphics below for this State is based on the following objectives: AOP17, ATC02.9, ATC18, ATC20 and NAV12.



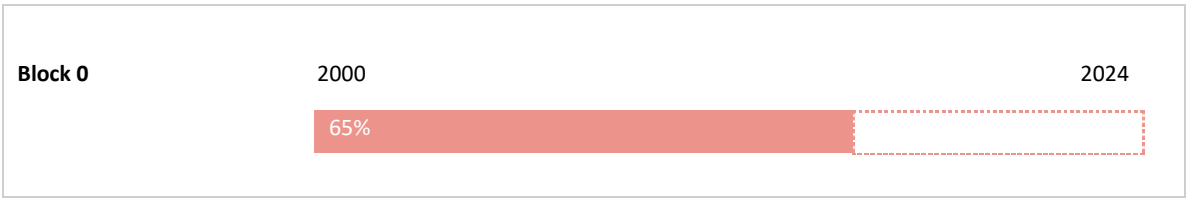
Progress per SESAR Key Feature and Phase

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**	None

By 2020	By 2021	By 2022	By 2023+
- New Pan-European Network Service (NewPENS) COM12 - 25 % progress **- Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling** AOM13.1 - 13 % progress **- Migrate from AFTN to AMHS** COM10 - 44 % progress **- Surveillance Performance and Interoperability** ITY-SPI - 70 % progress **- Ensure Quality of Aeronautical Data and Aeronautical Information** ITY-ADQ - 15 % progress	**- Short Term ATFCM Measures (STAM) - Phase 2** FCM04.2 - 05 % progress **- Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring** ATC12.1 - 75 % progress **- Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer** ATC17 - 26 % progress **- Improve Runway Safety by Preventing Runway Excursions** SAF11 - 20 % progress **- Aircraft Identification** ITY-ACID - 03 % progress **- Common Flight Message Transfer Protocol (FMTP)** ITY-FMTP - 10 % progress **- Voice over Internet Protocol (VoIP) in En-Route** COM11.1 - 40 % progress **- Traffic Complexity Assessment** FCM06 - 10 % progress **- 8,33 kHz Air-Ground Voice Channel Spacing below FL195** ITY-AGVCS2 - 03 % progress **- Implement enhanced tactical flow management services** FCM01 - 28 % progress **- Initial ATC Air-Ground Data Link Services** ITY-AGDL - 08 % progress **- Collaborative Flight Planning** FCM03 - 34 % progress	**- Electronic Terrain and Obstacle Data (eTOD)** INF07 - 05 % progress	**- RNP 1 in TMA Operations** NAV03.2 - 00 % progress **- RNAV 1 in TMA Operations** NAV03.1 - 09 % progress **- RNP Approach Procedures to instrument RWY** NAV10 - 33 % 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;

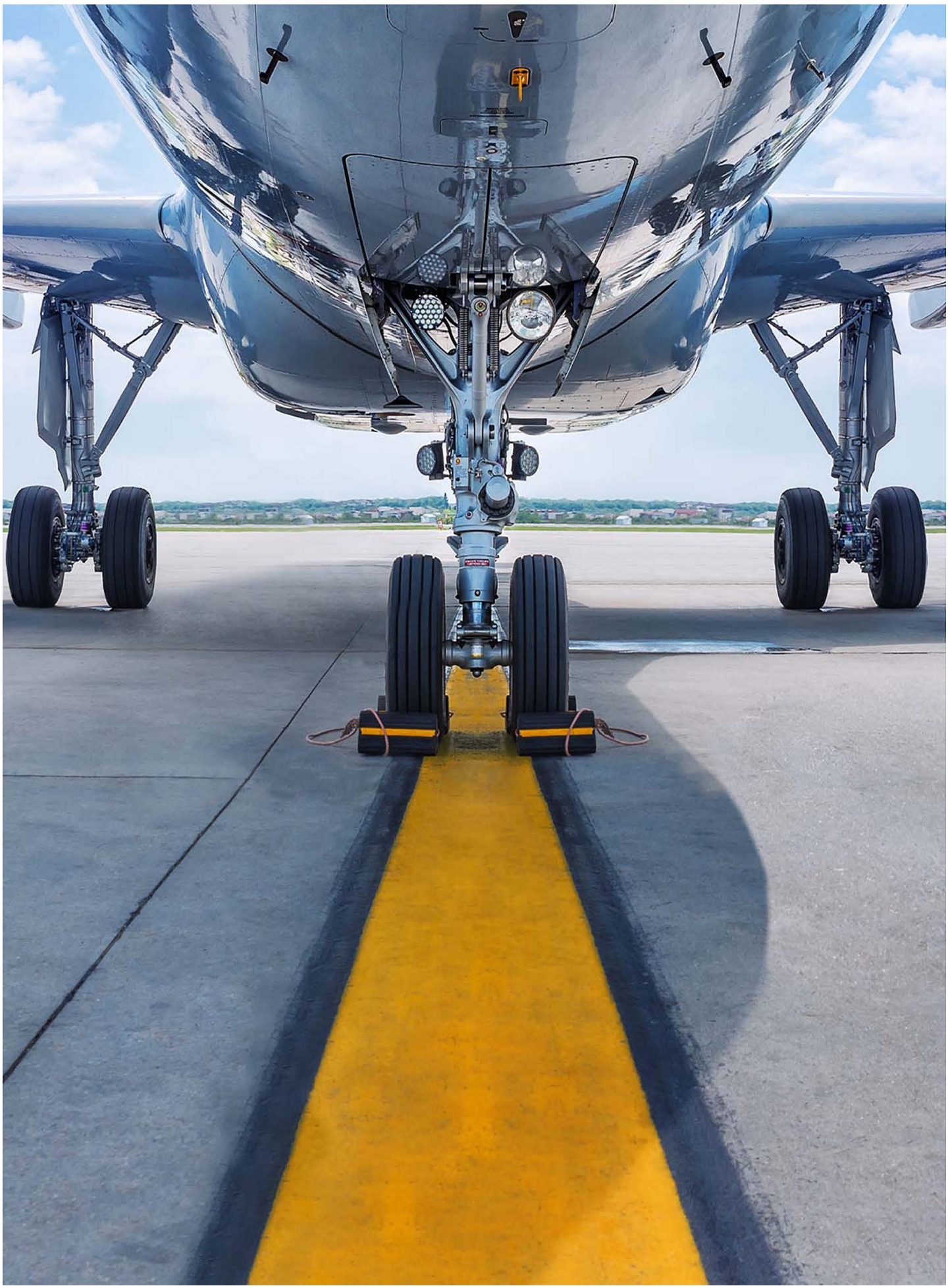
Chapter 3 provides the main Implementation Projects (at national, FAB and multinational level) which contribute directly to the implementation of the MP Operational Improvements and/or Enablers and Implementation Objectives. The Level 1 document covers a high-level list of the projects showing the applicable 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

Republic of North Macedonia is a Member of the following international organisations in the field of ATM:

Organisation		Since
ECAC	✓	1997
EUROCONTROL	✓	1998
European Union		-
EASA		-
ICAO	✓	1993
NATO	✓	2020
ITU	✓	1993
EDA		-

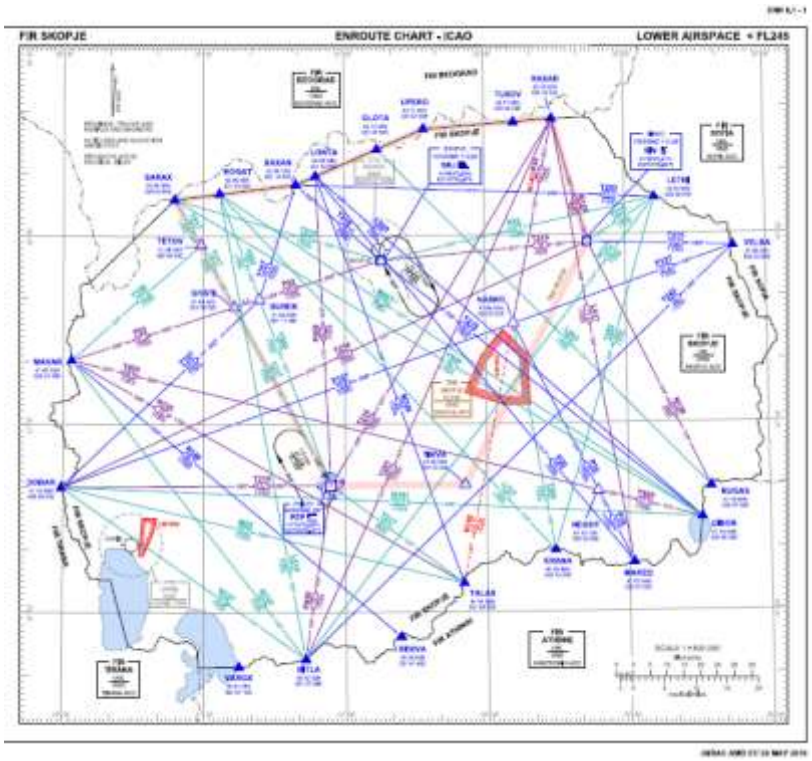
Geographical description of the FIR(s)

The geographical scope of this document addresses Skopje FIR.

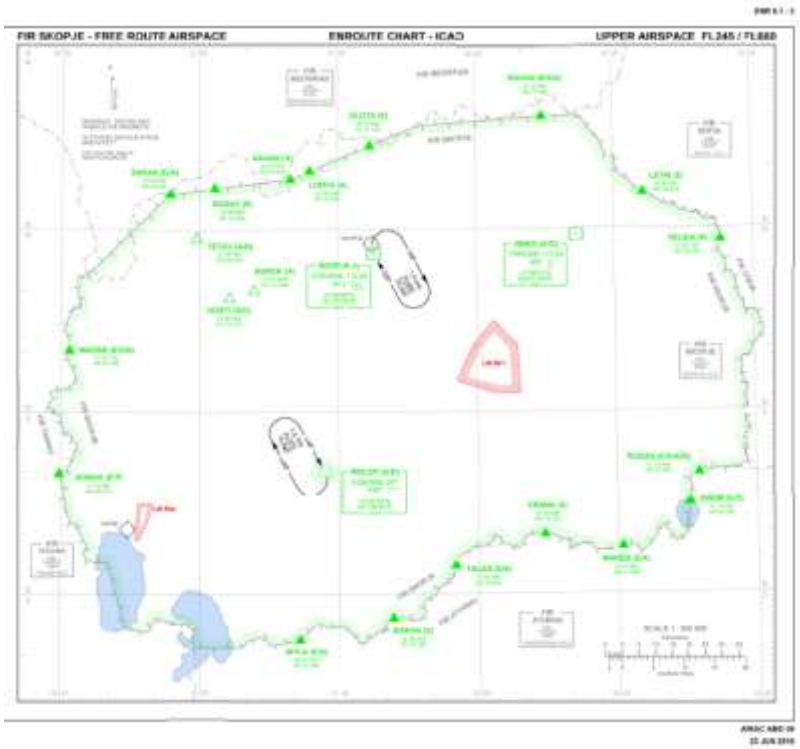
The Division Flight Level (DFL) separating upper from lower ATS airspace is FL245.

The following map shows the geographical situation of the North Macedonian airspace:

Lower airspace chart:

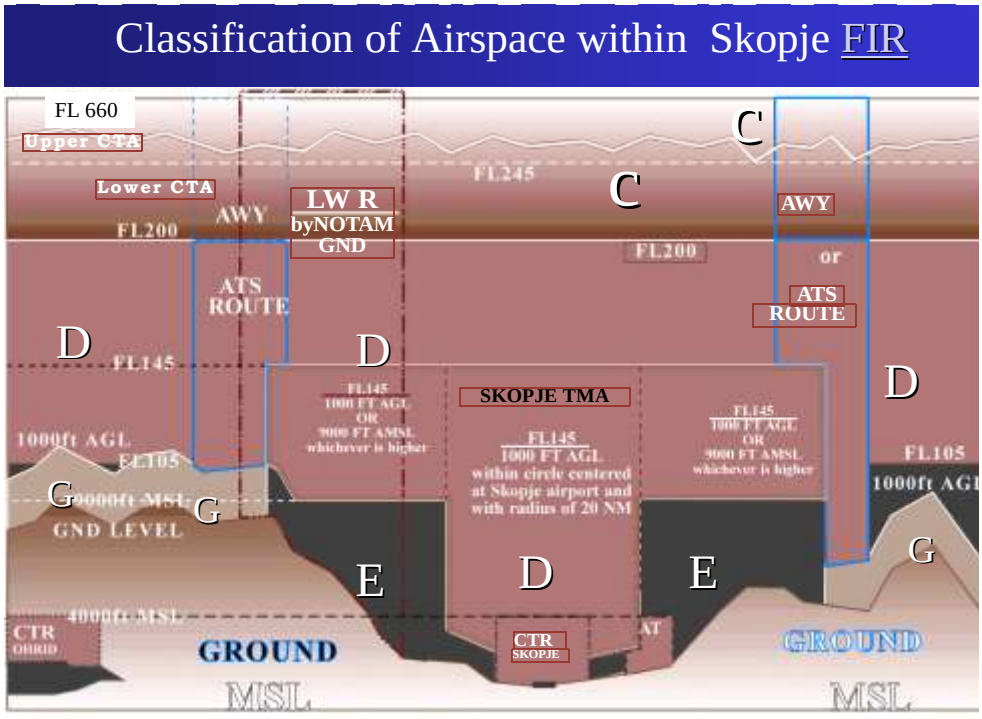


Upper, Free Route airspace chart:



Airspace Classification and Organisation

On 27 November 2003, the airspace classification has been changed. Airspace ICAO class A from FL 200 till FL 660 was replaced by ICAO class C. No modifications have been stipulated for airspace classification below FL 200.



1. Airspace class C is applied to UTA from FL 245 till 660 and for CTA from FL 200 till FL 245 within the lateral limits of Skopje FIR (new TSA with defined limits for the purpose of operational use (OAT traffic) was introduced. Published in AIP RNM 02/01/2020).

2. Airspace class D applied to:

- CTA from FL 105 till FL 200 within the lateral limits of Skopje FIR
- all ATS routes within Skopje FIR (lower limit 1000ft AGL, upper limit FL200)
- Within the lateral limits of Skopje TMA
    - Lower limit 1000ft AGL within 20 NM circle centred at Skopje Airport, or 1000ft AGL or 9000ft AMSL outside the circle, whichever is higher
    - Upper limit FL 145
- Skopje CTR within its lateral limits, lower limit GND upper limit 4000ft AMSL
- Ohrid CTR within its lateral limits, lower limit GND upper limit 4000ft AMSL

3. Airspace class E applied to CTA within Skopje FIR lateral limits, with exemption of CTRs, TMA and ATS routes, lower limit 1000ft AGL, upper limit FL105, and within Skopje TMA lower limit GND upper limit 1000 ft within 20 NM circle centred at Skopje airport or 1000ft AGL or 9000ft AMSL outside this circle, whichever is higher.

4. Airspace class G applied with lateral limits of Skopje FIR with exemption of TMA and CTRs from GND till 1000ft AGL

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

ATC Units

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

ATC Unit	Number of sectors		Associated FIR(s)	Remarks
	En-route	TMA		
Skopje ACC/APP	2 (maximum 4 sectors)	1	Skopje FIR	2 sectors configuration usually operated in /2019. 3 sectors configuration has been operated whenever traffic demands.
Ohrid TWR/APP		1	Skopje FIR	

Two sectors configuration encompassed two vertical sectors, divided as follows:

- From GND to 345/355/365
- From 345/355/365 to 660

Three sectors configuration encompassed three vertical sectors, divided as follows:

- From GND to 345/355/365
- 345/355/365-385
- 385-660

Three-sector configuration is supported by the ATM system and VHF/VCS system.

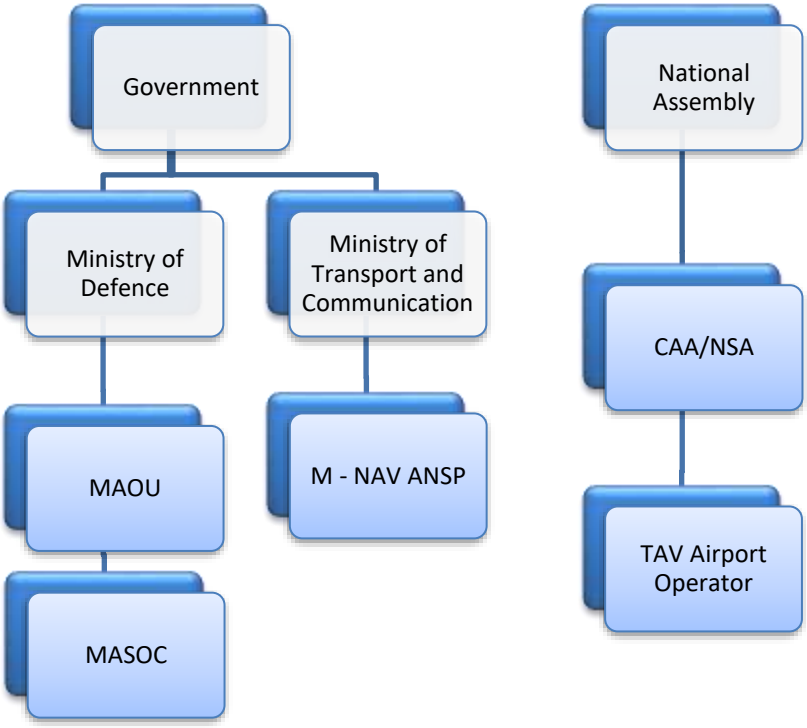
There is no Air Traffic Service delegation to/from other States.

1.2. National Stakeholders

The main National Stakeholders involved in ATM in the Republic of North Macedonia are the following:

- Civil Aviation Agency (CAA)
- Air Navigation Service Provider of the Republic of North Macedonia (M-NAV)
- Military Authorities;
- Airport Operators

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



National Stakeholders and/or LSSIP Representatives

Diagram 1
Top to bottom communication, coordination and/or supervisory role

Civil Regulator(s)

General Information

Civil Aviation in the Republic of North Macedonia is the responsibility of the Ministry of Transport and Communication. The different national entities having regulatory responsibilities in ATM are summarised in the table below. The CAA is further detailed in the following sections.

Activity in ATM:	Organisation responsible	Legal Basis
Rule-making	CAA	Aviation Act
Safety Oversight	CAA/NSA	Aviation Act
Enforcement actions in case of non-compliance with safety regulatory requirements	CAA	National regulation which defines the mode, rules and specific requirements concerning the ATM safety oversight
Airspace	The government is currently responsible for managing the airspace. The establishment of Airspace Management board has been done in November 2011. CAA is responsible for the oversight	
Economic	CAA	Aviation Act
Environment	Ministry of environment and physical planning	
Security	CAA	Aviation Act
Accident investigation	Committee for Investigation of Aviation Accidents and Serious Incidents	Aviation Act

Civil Aviation Agency (CAA)

The CAA was created in 1995 and was set up as a part of the Ministry of Transport and Communication. With the new Aviation Act, the status of the Civil Aviation Administration as body within the Ministry of Transport and Communication was changed into an independent authority outside of the Ministry of Transport and Communication under the name “Civil Aviation Agency”.

However, the Aviation Act of 2006 stipulates in Article 7 that an independent CAA must be created with its own legal identity. This was achieved by 8 February 2007. With this change, CAA reports to the Government, but the Ministry of Transport and Communication is conducting administrative supervision of the work of CAA.

The CAA regulates and supervises all aviation activities. The CAA is established by the Aviation Act which also defines its responsibilities. In particular, the CAA is responsible for the supervision of the implementation of the provisions of the Aviation Act and the regulations enacted there under. The CAA also supports the drafting of laws and enacts bylaws related to National Aviation Safety Programme of the applicable international aviation standards, recommended practices and legislation of the EU, ICAO, ECAC, EASA and EUROCONTROL.

The formal consultation and approval with respect to rulemaking is the responsibility of the Governmental body “Secretariat for Legislation”. Acting as regulator of the national aviation sector, the Agency is an independent state body and self-financed from the air navigation charges, airport infrastructure, issuing licenses, approvals and agreements fees.

The amendments of Aviation act enacted in May 2010 define CAA as a regulatory authority under the supervision of National Parliament. The National Parliament nominates 3 members of CAA’s Management Board. The CAA Director is appointed by the CAA Management Board.

Annual Report published:	Y	Annual working and development programme and annual financial plan of the Civil Aviation Agency of the Republic of North Macedonia for 2019 are stored on CAA intranet and will be available upon request.

Web-site- http://www.caa.gov.mk/

Air Navigation Service Provider of the Republic of North Macedonia (M-NAV)

Services provided

M-NAV, the State owned company being registered under the private company law for the ANS provision has been established on 1 July 2009. A governmental ordinance regarding the foundation of M-NAV has been enforced in 2009. The government assigned a supervisory board of the new company and the supervisory board appointed the M-NAV management board.

Governance:	Joint Stock Company	**Ownership:**	100 % State owned
Services provided	**Y/N**	**Comment**	
ATC en-route	Y	Skopje ACC	
ATC approach	Y	Skopje APP/ Ohrid APP	
ATC Aerodrome(s)	Y	Skopje TWR/Ohrid TWR	
AIS	Y	2 airports plus en-route	
CNS	Y	All ATM infrastructure is property of M-NAV	
MET	Y	2 airports plus en-route	
ATCO training	Y	Unit training	
Others		None	
Additional information:			
Provision of services in other State(s):	N		
Annual Report published:	Y	http://mnavigation.m-nav.info/wp-content/uploads/2019/09/Godisen_2018_Final.pdf	

Web-site- www.mnavigation.mk

ATC systems in use

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

FDPS

Specify the manufacturer of the ATC system currently in use:	SELEX
Upgrade[2] of the ATC system is performed or planned?	2021
Replacement of the ATC system by the new one is planned?	2021
ATC Unit	Skopje ACC/APP, Ohrid TWR/APP

SDPS

Specify the manufacturer of the ATC system currently in use:	SELEX
Upgrade of the ATC system is performed or planned?	2021
Replacement of the ATC system by the new one is planned?	2021
ATC Unit	Skopje ACC/APP

[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))

Airports

General information

The airports are state owned and managed by TAV Airports Holding, which is responsible for the management of two international Airports (International Airport Skopje and Ohrid “St. Paul the Apostle” airport).

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, International Airport Skopje is the only North Macedonian airport covered by the LSSIP Year 2019.

The EUROCONTROL Public Airport Corner also provides information for the following airport(s):
Skopje SKP / LWSK: https://ext.eurocontrol.int/airport_corner_public/LWSK

Military Authorities

The Military Authorities involved in ATM in North Macedonia are composed of:

- North Macedonian Aviation Operation Unit (MAOU);

- North Macedonian Air Sovereignty Operation Centre (MASOC).

The civil/military co-ordination is organised at three levels. The highest level is the ministerial level between MoT and MoD. The level of CAA and the North Macedonian Air Defence Operation Centre within MoD is mainly concerned with technical matters. The operational problems of airspace use, co-ordination procedures and day-to-day problems are discussed between M-NAV and MAOU (North Macedonian Aviation Operation Unit). A further level exists for tactical decisions on Skopje ACC/APP and MAOU level. For the time being, the North Macedonian militaries do not possess military transport fleet.

Inside the North Macedonian Aviation Operation Centre, the ATM team is staffed with 7 persons. The military co-ordinators (3 persons) are responsible for the supervision of the military activities. The military controllers are responsible for the provision of ATS to the military flights inside the temporary restricted airspace. Outside the temporarily restricted area, the civilian ATCOs control the military flights.

The military zones for IFR/VFR flights are dynamically allocated within the Skopje FIR airspace on tactical and daily basis, upon military request. Dynamic airspace management is achieved through the real time verbal civil-military co-ordination; no plans exist for enhanced civil-military co-ordination with electronic tools.

The co-ordination of the military flights inside temporarily restricted area is done from the military premises, using their own equipment. For a purpose of co-ordination with the civilian ATC authorities, a telephone hot line has been established, in order to transfer the estimates about military flight exit/entry conditions in restricted areas.

The national equivalent of FUA concept is implemented; there are no operational needs for CDRs and the necessity of AMC has to be evaluated for further utilisation. Restricted areas are assigned by CAA NOTAM office, upon the military request. They are published in the national AIP.

Co-operation between the CAA and military with regard to Search and Rescue (SAR) activities is defined in the Government Regulation on method, organization and entities for Aircraft Search and Rescue, that was enacted in 2013 and published in Official Gazette of RM", No. 36/13.

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/A
Level of such legal provision: Aviation Act, Instruction for Service provision to OAT		Level of such legal provision: N/A	
Authority signing such legal provision: National Assemble in respect of Aviation Act, CAA DG and the commander of North Macedonian Air Force regarding the instruction		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	Y	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: None		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	Y	National AIP	N/A
National Military AIP	N	National Military AIP	N/A
EUROCONTROL eAIP		EUROCONTROL eAIP	N/A
Other:	None	Other:	-

Oversight

OAT	GAT
National oversight body for OAT: Ministry of Defence	NSA (as per SES reg. 550/2004) for GAT services provided by the military: Ministry of Defence
Additional information: None	Additional information:

Service Provision role

The service provision to the OAT is mandated to M-NAV, except the handing of OAT within the restricted areas, whereas the ATS to OAT is provided by the military co-ordinators.

OAT			GAT	
Services Provided:			Services Provided: N/A	
En-Route		M-NAV	En-Route	
Approach/TMA		M-NAV	Approach/TMA	
Airfield/TWR/GND		M-NAV	Airfield/TWR/GND	
AIS		M-NAV	AIS	
MET		Military MET service and M-NAV MET service	MET	
SAR		A Specialised Military Unit	SAR	
TSA/TRA monitoring		Civil Military co-ordination group	FIS	
Other:			None	
Additional Information:			Additional Information:	

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

User role

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

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

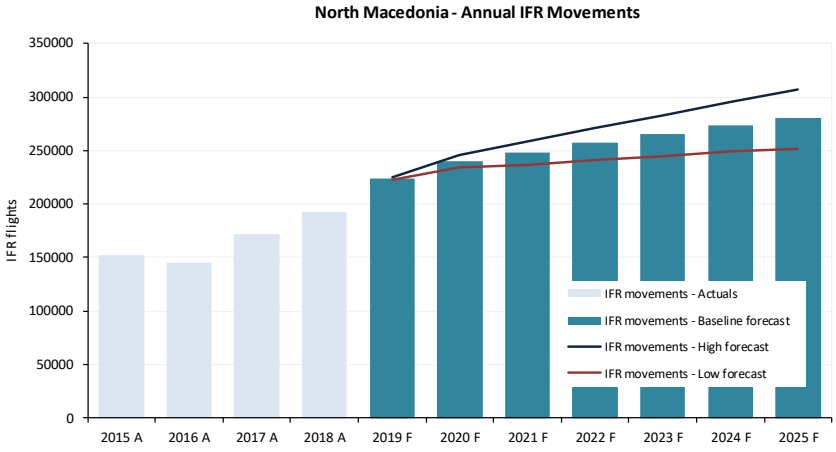
If Military fly GAT-IFR inside controlled airspace, specify existing special arrangements:								
No special arrangements					Exemption from Route Charges			Y
Exemption from flow and capacity (ATFCM) measures				Y	Provision of ATC in UHF			Y
CNS exemptions:	RVSM	Y	8.33	Y	Mode S	N/A	ACAS	Y
Others:	None							

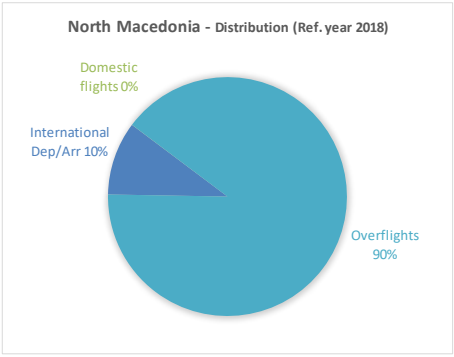
Flexible Use of Airspace (FUA)

Military in the Republic of North Macedonia applies FUA requirements as specified in the Regulation No 2150/2005: Y
FUA Level 1 implemented: Y
FUA Level 2 implemented: Y
FUA Level 3 implemented :N

2. Traffic and Capacity

2.1. Evolution of traffic in North Macedonia





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
North Macedonia	H				16.5%	9.4%	5.4%	4.6%	4.3%	4.4%	3.9%
	B	-4.3%	17.5%	12.7%	16.0%	7.5%	3.3%	3.4%	3.1%	3.2%	2.6%
	L				15.4%	5.4%	1.0%	1.6%	1.5%	1.7%	1.0%
ECAC	B	2.8%	4.0%	3.8%	1.1%	2.3%	1.9%	2.2%	1.8%	1.9%	1.4%

2019

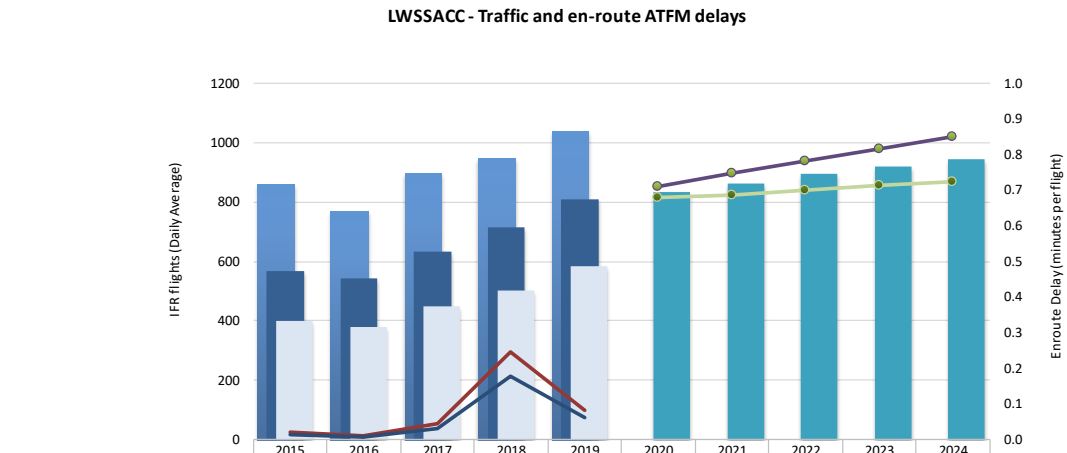
Traffic in North Macedonia increased by 15.5% in 2019 compared to 2018.

2020-2025

The EUROCONTROL Seven-Year forecast predicts an average annual traffic growth between 2.1% and 5.3%, with an average baseline growth of 3.9% throughout the planning cycle.

2.2. **SKOPJE ACC**

Traffic and en-route ATFM delays 2015-2024



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Peak Day Traffic	859	769	897	951	1041					
Summer Traffic	568	542	633	717	811					
Yearly Traffic	401	379	448	504	585					
Summer Traffic Forecast						833	865	895	921	947
High Traffic Forecast - Summer						851	897	939	979	1022
Low Traffic Forecast - Summer						814	825	840	856	871
Summer enroute delay (all causes)	0.02	0.01	0.04	0.25	0.08					
Yearly enroute delay (all causes)	0.01	0.01	0.03	0.18	0.06					

Performance summer 2019

Skopje 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:** 6.4%	+27%	+16.1%	0.06	0.19			
Summer	**B:** 5.0% **L:** 3.0%		+13.0%	0.08		67 (+5%)	68 (+6%)	No

The delays decreased from 0.25 minutes per flight in during Summer 2018 to 0.08 minutes per flight during Summer 2019.

58% of the Summer delays were due to the reason Weather, 33% to ATC Capacity, and 9% were due to ATC Staffing.

The ACC capacity baseline was estimated with ACCESS to be at 68. During the measured period the average peak 1 hour was 60 and the average peak 3 hour was 54.

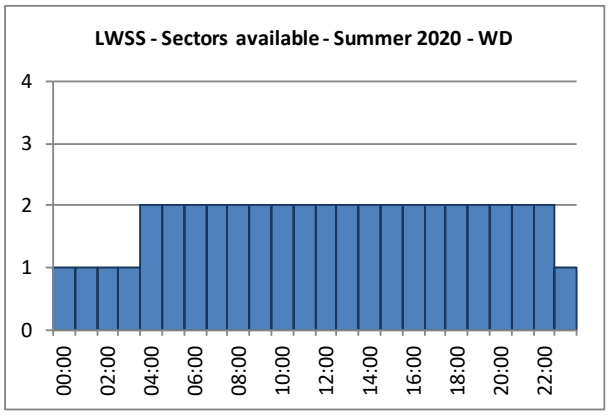
Operational actions	Achieved	Comments
Traffic occupancy counts during night shifts	No	Not implemented due to staff shortage during night shifts.
New software for roster and shifts planning for better planning of human resources	No	Not implemented yet due to prolonged operational testing.
Maximum configuration: 3 sectors	Yes	

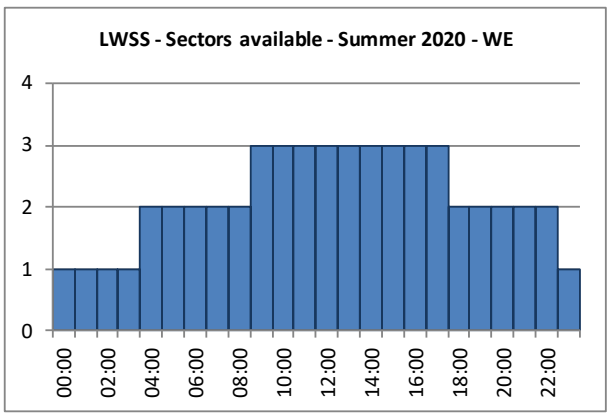
Planning Period 2020-2024 – Summer

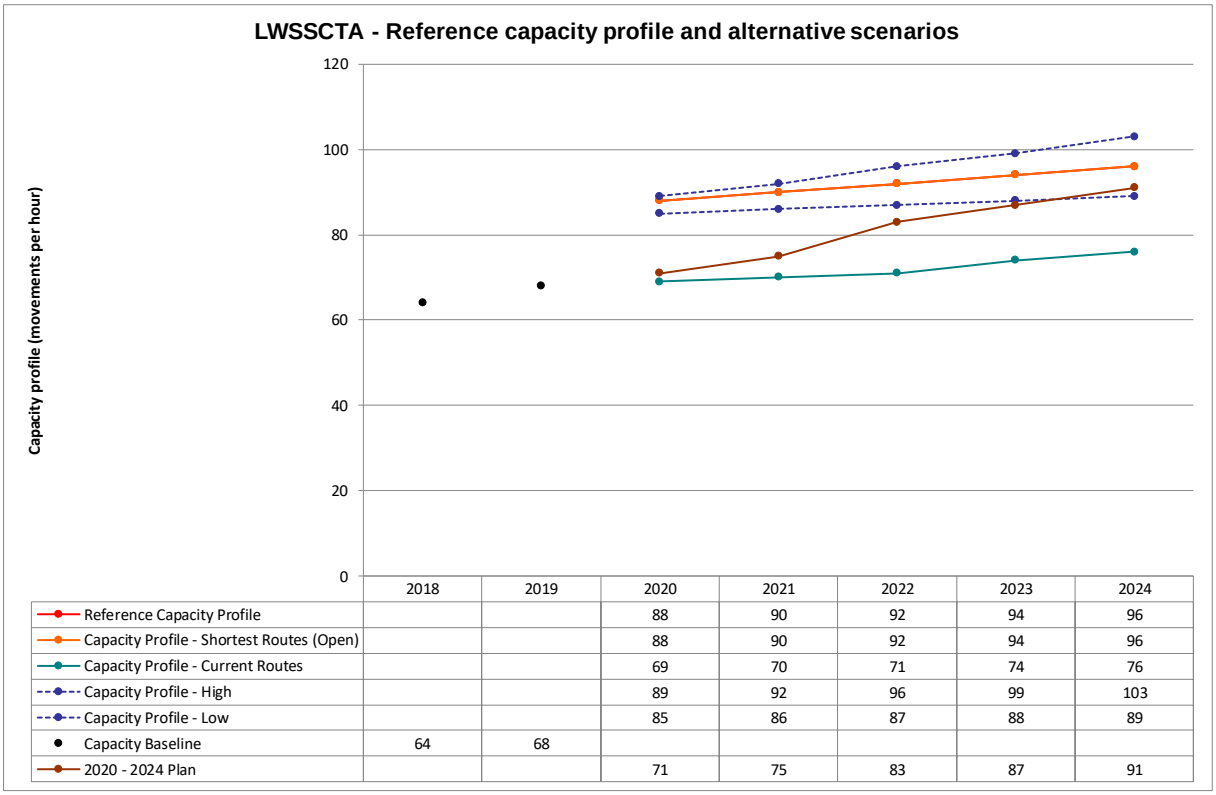
The planning focuses on the Summer season to reflect the most demanding period of the year from a capacity perspective. This approach ensures consistency with the previous planning cycles.

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

Summer Capacity Plan					
	2020	2021	2022	2023	2024
Free Route Airspace					
Airspace Management Advanced FUA					
Airport & TMA Network Integration					
Cooperative Traffic Management					
Airspace					
Procedures					
Staffing	New rostering software	5 additional ATCOs	5 additional ATCOs		
Technical			New ATM system		
Capacity	Longer periods with 3 sectors open		Dynamic DFL		
Significant Events					
Max sectors	3	3	4	4	4
Planned Annual Capacity Increase	5%	5%	10%	5%	5%
Reference profile Annual % Increase	29%	2%	2%	2%	2%
Current Routes Profile % Increase	1%	1%	1%	4%	3%
Difference Capacity Plan v. Reference Profile	-19.3%	-16.7%	-9.8%	-7.4%	-5.2%
Difference Capacity Plan v. Current Routes Profile	2.9%	7.1%	16.9%	17.6%	19.7%
Annual Reference Value (min)	0.21	0.15	0.12	0.11	0.11
Additional information	New system: The implementation of the new ATM system is planned for the end of 2021. Additional capacity increase of at least 10% is planned for 2022.				







	2018	2019	2020	2021	2022	2023	2024
Reference Capacity Profile			88	90	92	94	96
Capacity Profile - Shortest Routes (Open)			88	90	92	94	96
Capacity Profile - Current Routes			69	70	71	74	76
Capacity Profile - High			89	92	96	99	103
Capacity Profile - Low			85	86	87	88	89
Capacity Baseline	64	68					
2020 - 2024 Plan			71	75	83	87	91

2020-2024 Planning Period Outlook

A capacity gap could be expected during the full planning period if traffic continues to grow towards the reference scenario hypothesis (shortest routes). However the likelihood of this scenario is linked to the impact of fuel prices and ATC service costs on airspace user's route choices.

In order to mitigate the possible capacity gap as early as possible, stricter management of human resources will be applied in 2020 through procurement of automated rostering software which is in the final phase of testing, allowing further extension of the utilization periods of maximum 3-sector configuration.

In relation to the dynamic changing of DFL between sectors, the current system capabilities are very limited as they allow selecting the DFL between Lower/Upper from three predefined values only. However, even the current implementation with switching the DFL between FL345/FL355 and FL365 is beneficial for the optimization of the sectorisation.

The combined effects of human resources planning and selectable DFL between Lower/Upper sectors will allow an increase of the capacity in 2020 of approximately 5%.

The implementation of the new ATM system will allow fully dynamic changing of DFL. The new functionalities provided by the new system will allow an increase of the overall capacity of approximately 10%. Having in mind resent developments the new ATM, is expected to be fully functional by the end of 2021.

3. Implementation Projects

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

National projects

Name of project:	Organisation(s):	Schedule:	Status:	Links:
ILS/MM/DME LWOH	M-NAV (MK)	By the end of 2020	Public procurement is planned for March 20201	-
MET	M-NAV (MK)	30/06/2020	Training of the affected personnel in completed. OAT is expected to be done during early spring 2020 The system is expected to be fully functional by the end of 2020.	-
New ATM System Project	M-NAV (MK)	31/12/2021	At the moment, Leonardo and M-NAV have finalized SAD (System Architecture Design) and SSS (System Segment Specification) documents in which each requirement from CfT specification is linked with at least one or more adequate System Segment specification Requirements SSR-ID(s). After months of common work (Leonardo, M-NAV and Eurocontrol) and the conduction of 5 SDR (system Design Review) sessions, both parties can conclude that each UR (more than 2K in total) has a proper link(s) with SSS for each software module. After finalizing this stage, the next steps are foreseen in the PMP.	L3: ATC17
New ATM System Project	M-NAV (MK)	31/12/2021	At the moment, Leonardo and M-NAV have finalized SAD (System Architecture Design) and SSS (System Segment Specification) documents in which each requirement from CfT specification is linked with at least one or more adequate System Segment specification Requirements SSR-ID(s). After 4 months of common work (Leonardo, M-NAV and Eurocontrol) and the conduction of 5 SDR (system Design Review) sessions, both parties can conclude that each UR (more than 2K in total) has a proper link(s) with SSS for each software module which gives us a good starting position for the phases that will follow.	L3: ATC12.1, ATC17

Name of project:	Organisation(s):	Schedule:	Status:	Links:
New ATM System Project - New technical and ops room for the new ATM - Construction of building	M-NAV (MK)	Planned	All preparation regarding the start of the construction work is done. Construction permit is obtained. - Start of construction works on the new ATM building in the Q1 2020. - End of construction work August/September 2020.	-
Supply and installation of new DME for Skopje Airport	M-NAV (MK)	By the end of 2020.	Public procurement planned for March 2020.	L3: NAV03.1, NAV10
VoIP	M-NAV (MK)	30/06/2021	Technical specification prepared. The tender is expected to be open during the Q2 2020.	L3: COM11.1, COM11.2

4. Cooperation activities

4.1. Multinational cooperation initiatives

In order to achieve some of the Master Plan Level 3 implementation Objectives, the North Macedonian ATM Stakeholders will have to co-ordinate some of its actions with a number of adjacent ATS units. The LSSIP document will also help to foster regional co-ordination with neighbouring states by identifying mutually dependent actions. Republic of North Macedonia constantly promotes and boosts the co-operation in the region through their active participation in several regional initiatives and agreements, as listed below:

- Radar Data Sharing Agreement with Bulgaria, Albania, Serbia and Greece
- Bilateral agreement of co-ordination in ATM field with Bulgaria
- European Common Aviation Agreement (ECAA) with European Commission
- An agreement with Albania concerning the delegation of ATS. The buffer zone of Albanian airspace in vicinity of Ohrid airport has been delegated to the North Macedonian authorities in order to facilitate terminal operation at the Ohrid Airport (implemented with the Ohrid TMA re-organisation)
- Special co-operation agreement with the NATO-KFOR
- DANUBE FAB observer status
- GO (Gate One)

The long term regional improvements addressed the creation of common interconnected regional communication network and network topology.

Currently, the regional network encapsulated the links between Sofia, Varna, Skopje, Athens and Bucharest ACCs. There is a tendency for incorporation to the network of Beograd and Istanbul ACCs. The connectivity between Skopje and Sofia locations is established by 64K and ISDN links (back-up). The data transmitted over this line include AFTN, OLDI, radar data, LB VOIP and administrative VOIP. The link between Skopje and Athens is 64 K and it is used for AFTN data exchange/OLDI and ISDN back-up line.

Multilateral Agreement on the Establishment of a European Common Aviation Area (ECAA)

The European Commission has launched the negotiations on the ECAA Agreement with the South East European partners, including the Republic of North Macedonia in March 2005. The European Commission has reached an agreement to create a European Common Aviation Area with the Republic of North Macedonia, seven more countries from South Eastern Europe, Norway and Iceland in December 2005.

The European Common Aviation Area (ECAA) will create a seamless and efficient European air transport network, linking European people, countries and cultures, and play a vital role in the further integration and development of Europe as a whole. The ECAA agreement has been signed by all contracting parties on 9 June 2006 in Luxembourg. The National Assembly of the Republic of North Macedonia ratified the ECAA agreement in March 2007.

The ATM issues are covered by the Article 13 of the ECAA agreement that underlines a commitment of the contracting parties to extend to Single European Sky to the ECAA and fully associate them with the development of an ATM Master Plan and its implementation throughout the SESAR programme.

Note: With regard to the obligation for alignment of national law with European legislation stipulated in Annex I of the ECAA agreement and having in mind the fact that Annex I has not be revised since 2008, the legal system of the Republic of North Macedonia is in compliance only with the ATM legislation of SES Package 1. Transposition of SES II was initialised on the bases of the amendments of the Aviation Act enacted in 2016 and is ongoing.

DANUBE FAB observer status

On the sixth meeting of the Governing Council of the DANUBE FAB which was held on 28th October 2015 in Sofia, Observer Status was granted to the Republic of North Macedonia. This new observer status for the Republic of North Macedonia, endorsed by the Governing Council, demonstrates DANUBE FAB's commitment to cooperate with the neighbouring countries to the fullest extent possible in order to improve the European ATM Network.

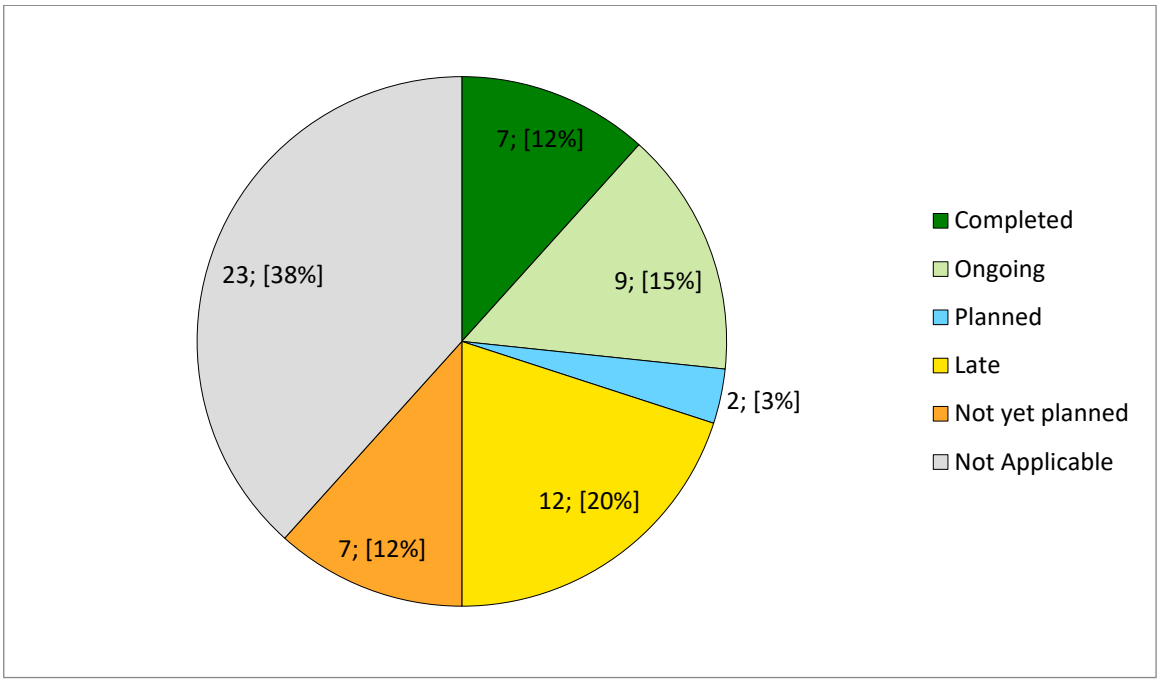
GO (Gate One)

The CEOs of the GO Initiative, which includes designated ANSPs covering 3 existing FABs (Baltic FAB, Danube FAB and FAB CE) and 2 non-EU FIRs (Belgrade and Skopje) - at their meeting in Sofia on 3rd December agreed to strengthen their operational and technical cooperation. As a pilot common project the CEOs proposed to launch a study to synchronize cross-border Free Route (FRA) implementation in the region for the airspace serviced by GO members.

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).



Most of the stated objectives are late, being dependent of the deployment of the new ATM system, expected for 2021. Unfortunately, the whole project suffered multiple delays, due to diverse reasons. Nevertheless, we expect the project, since it is of major importance for the implementation of the European ATM Master Plan in North Macedonia, to be finalized according to the given dates.

It should be noted that most of the SES Regulations have now been transposed into the national legislation and are now binding, adding an additional implementation burden on the national stakeholders.

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:

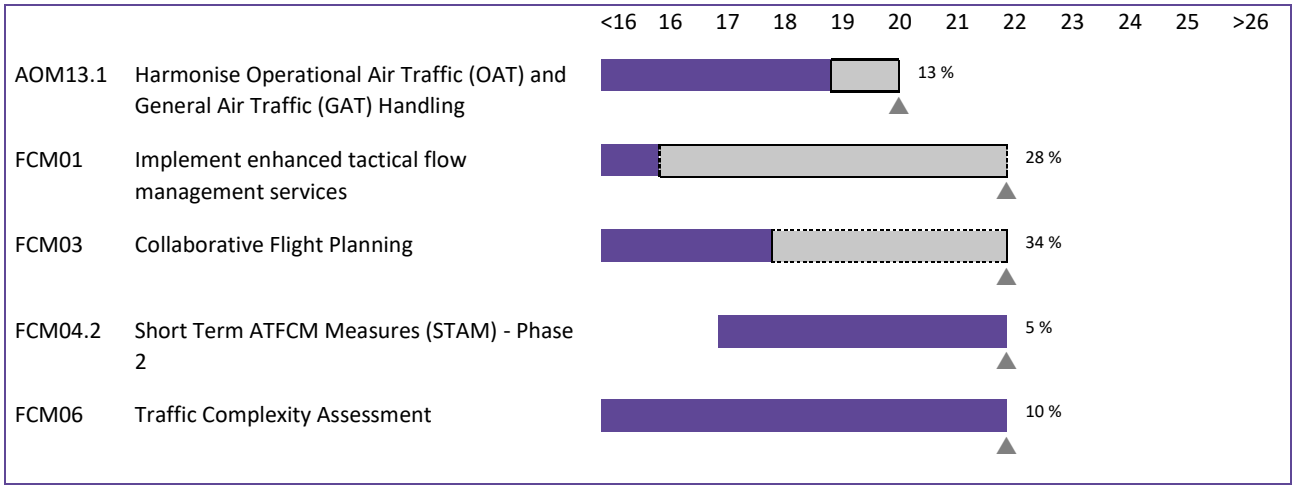
▲ ## % = Expected completion / % Progress

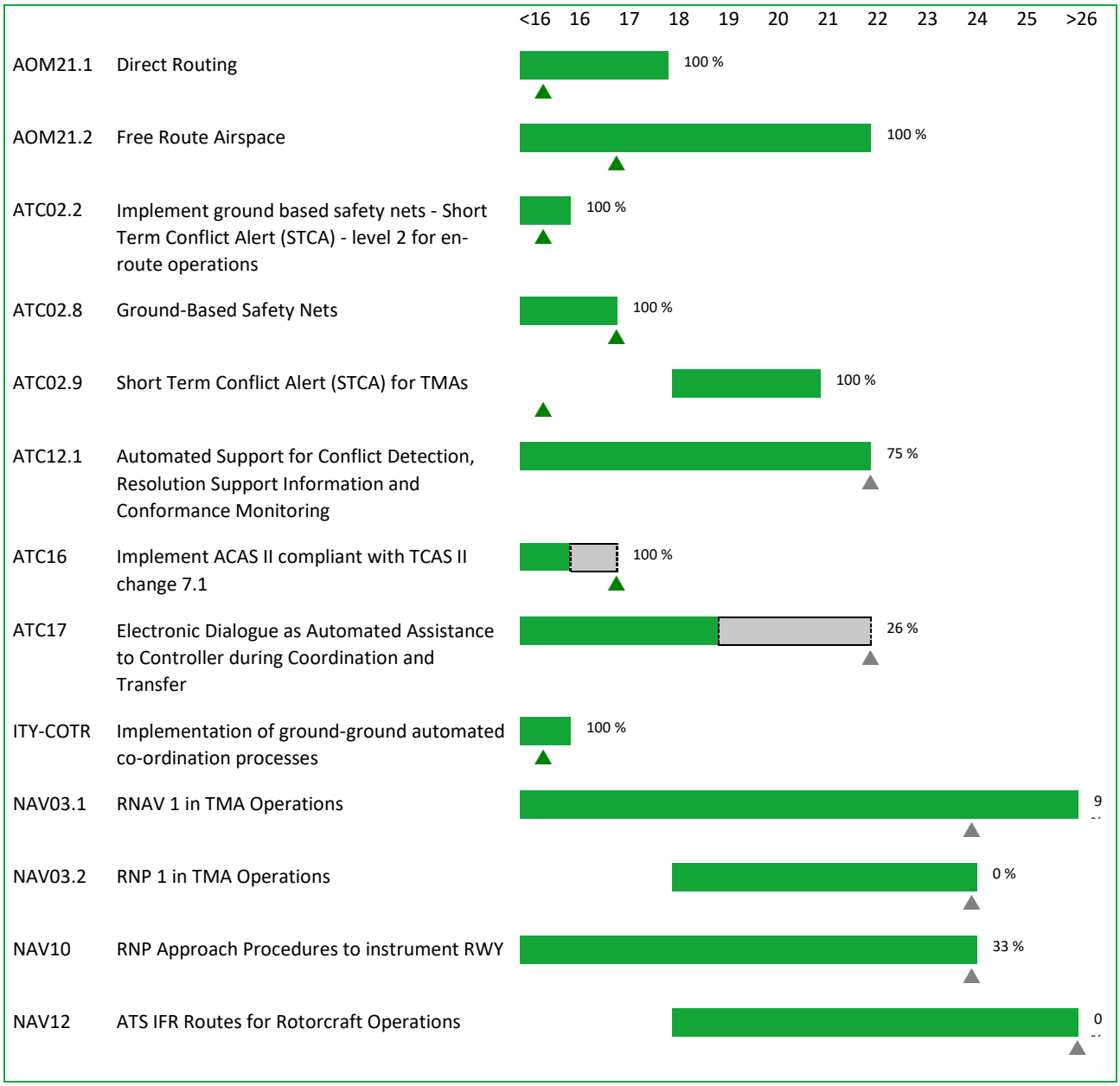
▲ 100% = Objective completed

= Implementation Objective timeline (different colour per KF)

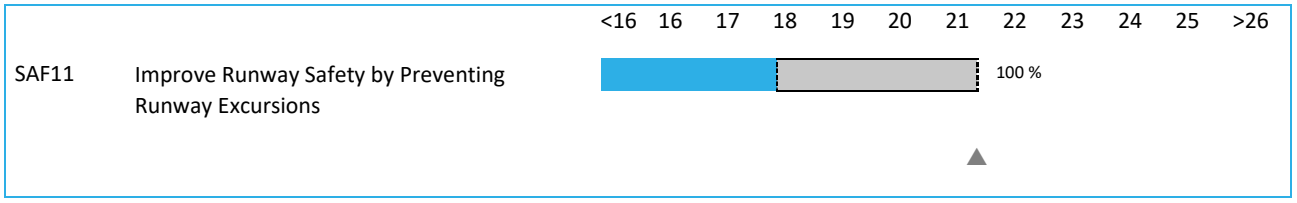
= Completion beyond Implementation Objective timeline

Optimised ATM Network Services




<16 16 17 18 19 20 21 22 23 24 25 >26
AOM21.1 Direct Routing
100 %
AOM21.2 Free Route Airspace
100 %
ATC02.2 Implement ground based safety nets - Short Term Conflict Alert (STCA) - level 2 for en-route operations
100 %
ATC02.8 Ground-Based Safety Nets
100 %
ATC02.9 Short Term Conflict Alert (STCA) for TMAs
100 %
ATC12.1 Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring
75 %
ATC16 Implement ACAS II compliant with TCAS II change 7.1
100 %
ATC17 Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer
26 %
ITY-COTR Implementation of ground-ground automated co-ordination processes
100 %
NAV03.1 RNAV 1 in TMA Operations
9
NAV03.2 RNP 1 in TMA Operations
0 %
NAV10 RNP Approach Procedures to instrument RWY
33 %
NAV12 ATS IFR Routes for Rotorcraft Operations
0

High Performing Airport Operations



Enabling Aviation Infrastructure

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 meeting (European Aviation System Planning Group).

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		**13%**	**Late**
Key Feature: Optimised ATM Network Services				
-				
All stakeholders in North Macedonia dedicated significant effort in preparations of implementation of certain provisions from EUROAT document specifications. Few meetings were held and during this year, it is expected by the CAA to introduce the EUROAT Doc. and dully inform EUROCONTROL of its implementation.				**01/02/2020**
REG (By:12/2018)				
CAA	All stakeholders in North Macedonia dedicated significant effort in preparations of implementation of certain provisions from EUROAT document specifications. Few meetings were held and during this year, it is expected by the CAA to introduce the EUROAT Doc. and dully inform EUROCONTROL of its implementation.	-	40%	Late 01/02/2020
Mil. Authority	-	-	10%	Late 01/01/2020
ASP (By:12/2018)				
Mil. Authority	-	-	10%	Late 01/01/2020
M-NAV	All stakeholders in North Macedonia dedicated significant effort in preparations of implementation of certain provisions from EUROAT document specifications. Few meetings were held and during this year, it is expected by the CAA to introduce the EUROAT Doc. and dully inform EUROCONTROL of its implementation.	-	10%	Late 01/01/2020
MIL (By:12/2018)				
Mil. Authority	Military traffic outside temporary restricted areas is handled by the civilian ATCOs. Common separation criteria are applied to GAT/OAT traffic. The migration to EAD is considered as not applicable due to non-existence of military AIS.	-	10%	Late 01/02/2020

AOM19.1	ASM Support Tools to Support Advanced FUA (AFUA) (Outside Applicability Area) ***Timescales:*** - not applicable -		%	Not Applicable
Links: B1-FRTO, B1-NOPS | Key Feature: Optimised ATM Network Services				
-				
There is no operational need for implementation of A-FUA				-
ASP (By:12/2018)				
M-NAV	There is no operational need for implementation of A-FUA	-	%	Not Applicable -

AOM19.2	ASM Management of Real-Time Airspace Data (Outside Applicability Area) ***Timescales:*** - not applicable -		%	Not Applicable
Links: B1-FRTO, B1-NOPS | Key Feature: Optimised ATM Network Services				
-				
For the time being, there is no state plan and no operational need for further development of the ASM management.				-
ASP (By:12/2021)				
M-NAV	For the time being, there is no state plan and no operational need for further development of the ASM management.	-	%	Not Applicable -

AOM19.3	Full Rolling ASM/ATFCM Process and ASM Information Sharing (Outside Applicability Area) ***Timescales:*** - not applicable -		%	Not Applicable
Links: B0-FRTO, B1-FRTO, B1-NOPS, B2-NOPS | Key Feature: Optimised ATM Network Services				
-				
No state plan for implementing full rolling ASM/ATFCM process. No operational need for further development of the existing ASM procedures because of very low level of operational traffic.				-
ASP (By:12/2021)				
M-NAV	No state plan for implementing full rolling ASM/ATFCM process. No operational need for further development of the existing ASM procedures because of very low level of operational traffic.	-	%	Not Applicable -

AOM19.4	**Management of Pre-defined Airspace Configurations** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B1-FRTO, B1-NOPS | Key Feature: Optimised ATM Network Services				
-				
No plans for implementation of pre-defined airspace configurations as no operational need has been identified				-
ASP (By:12/2021)				
M-NAV	Still no plans for implementation of pre-defined airspace configurations.	-	%	Not Applicable -

AOM21.2	**Free Route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 31/12/2021		**100%**	**Completed**
Links: B0-FRTO, B1-FRTO | Key Feature: Advanced Air Traffic Services				
-				
FRA implemented in Skopje FIR above FL245, 24/7, on 23/06/2016				**01/12/2016**
ASP (By:12/2021)				
M-NAV	FRA implemented in Skopje FIR above FL245, 24/7, on 23/06/2016	-	100%	Completed 01/12/2016

AOP04.1	**Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B0-SURF | Key Feature: High Performing Airport Operations				
LWSK - Skopje Airport **(Outside Applicability Area)**				
Macedonia is not part of the objective applicability area. There is no operational need for an A-SMGCS system.				-
REG (By:12/2010)				
CAA	-	-	%	Not Applicable -
ASP (By:12/2011)				
M-NAV	-	-	%	Not Applicable -
APO (By:12/2010)				
SKOPJE Airport	-	-	%	Not Applicable -

AOP04.2	**Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B0-SURF | Key Feature: High Performing Airport Operations				
LWSK - Skopje Airport **(Outside Applicability Area)**				
Macedonia is not part of the objective applicability area. There is no operational need for an A-SMGCS system.				-
ASP (By:12/2017)				
M-NAV	-	-	%	Not Applicable -
APO (By:12/2017)				
SKOPJE Airport	-	-	%	Not Applicable -

AOP05	**Airport Collaborative Decision Making (A-CDM)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B0-ACDM, B0-RSEQ | Key Feature: High Performing Airport Operations				
LWSK - Skopje Airport **(Outside Applicability Area)**				
Republic of North Macedonia is not part of the objective applicability area. **All Airports handle less movements yearly, then the agreed threshold, according to the A-CDM Eurocontrol Manual.**				-
ASP (By:12/2016)				
M-NAV	-	-	%	Not Applicable -
APO (By:12/2016)				
SKOPJE Airport	-	-	%	Not Applicable -

AOP10	**Time-Based Separation** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B1-RSEQ, B2-WAKE | Key Feature: High Performing Airport Operations				
LWSK - Skopje Airport **(Outside Applicability Area)**				
Not Applicable for Skopje Airport, outside of Applicability Area				**-**
REG (By:12/2023)				
CAA	-	-	%	Not Applicable -
ASP (By:12/2023)				
M-NAV	-	-	%	Not Applicable -
CAA	-	-	%	Not Applicable -

AOP11	**Initial Airport Operations Plan** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B1-ACDM | Key Feature: High Performing Airport Operations				
LWSK - Skopje Airport **(Outside Applicability Area)**				
Not Applicable for Skopje Airport. The low level of traffic and its lack of impact on the Network does not justify the implementation of an AOP.				**-**
ASP (By:12/2021)				
M-NAV	-	-	%	Not Applicable -
APO (By:12/2021)				
SKOPJE Airport	-	-	%	Not Applicable -

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				
LWSK - Skopje Airport **(Outside Applicability Area)**				
Not Applicable for Skopje Airport, outside of Applicability Area. Not needed due to the low level of traffic and low complexity.				-
ASP (By:12/2020)				
M-NAV	-	-	%	Not Applicable -
APO (By:12/2020)				
SKOPJE Airport	-	-	%	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				
LWSK - Skopje Airport **(Outside Applicability Area)**				
Not applicable, LWSK is not a PCP high performing airport				-
REG (By:12/2023)				
CAA	Not applicable, LWSK is not a PCP high performing airport	-	%	Not Applicable -
ASP (By:12/2023)				
M-NAV	No operational need for applying this objective due to low traffic at LWSK	-	%	Not Applicable -

ATC02.8	**Ground-Based Safety Nets** ***Timescales:*** Initial operational capability: 01/01/2009 Full operational capability: 31/12/2016		**100%**	**Completed**
Links: B0-SNET, B1-SNET | Key Feature: Advanced Air Traffic Services				
-				
M-NAV have implemented APW and MSAW. APM has been already implemented at Ohrid TWR. The implementation of Approach Path Monitoring (APM) will be reassessed depending on the implementation of the Mode-S sensors and traffic volume at the Skopje airport.				**31/12/2016**
ASP (By:12/2016)				
M-NAV	The APM function is already implemented at Ohrid TWR. - The implementation of Approach Path Monitoring (APM) and download of TCAS Resolution Advisor (RA) will be reassessed in 2018 depending in the implementation of the Mode-S sensors and traffic volume at the Skopje airport	-	100%	Completed 31/12/2016

ATC02.9	**Short Term Conflict Alert (STCA) for TMAs** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2020		**100%**	**Completed**
Links: B0-SNET, B1-SNET | Key Feature: Advanced Air Traffic Services				
-				
The STCA that is used in TMA is the same STCA that is used En-route, using the same algorithm, which in our case, taking into account the complexity of the TMA and the traffic level, is sufficient for the purpose. Multi-hypothesis algorithm is not used as not needed.				**31/12/2009**
ASP (By:12/2020)				
M-NAV	The STCA that is used in TMA is the same STCA that is used En-route, using the same algorithm, which in our case, taking into account the complexity of the TMA and the traffic level, is sufficient for the purpose.	-	100%	Completed 31/12/2009

ATC07.1	**AMAN Tools and Procedures** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B0-RSEQ | Key Feature: Advanced Air Traffic Services				
LWSK - Skopje Airport **(Outside Applicability Area)**				
There is no operational need for AMAN tool but an arrival sequencing function is already implemented				**-**
ASP (By:12/2019)				
M-NAV	There is no operational need for AMAN tool but an arrival sequencing function is already implemented	-	%	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		**75%**	**Ongoing**
Links: B1-FRTO | Key Feature: Advanced Air Traffic Services				
-				
MONA and MTCD have been implemented (conflict resolution function is not available). TCT is planned for the new ATM system.				**31/12/2021**
ASP (By:12/2021)				
M-NAV	MONA and MTCD have been implemented. TCT is planned for the new ATM system.	New ATM System Project	75%	Ongoing 31/12/2021

ATC15.1	**Information Exchange with En-route in Support of AMAN** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B1-RSEQ | Key Feature: Advanced Air Traffic Services				
-				
There is no operational need and justification for AMAN tool.				**-**
ASP (By:12/2019)				
M-NAV	There is no operational need and justification for AMAN tool.	-	%	Not Applicable -

ATC15.2	**Arrival Management Extended to En-route Airspace** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B1-RSEQ | Key Feature: Advanced Air Traffic Services				
-				
So far, there is no operational need for implementation of Arrival Management to be extended to en-route airspace.				**-**
ASP (By:12/2023)				
M-NAV	So far, there is no operational need for implementation of Arrival Management to be extended to en-route airspace.	-	%	Not Applicable -

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		**26%**	**Late**
Key Feature: Advanced Air Traffic Services				
-				
Will be part of the new ATM system, planned to be operational by 31/12/2021				**31/12/2021**
ASP (By:12/2018)				
M-NAV	Will be part of the new ATM system, planned to be operational by 31/12/2021	New ATM System Project / New ATM System Project	26%	Late 31/12/2021

COM10	**Migrate from AFTN to AMHS** ***Timescales:*** Initial operational capability: 01/12/2011 Full operational capability: 31/12/2018		**44%**	**Late**
Key Feature: Enabling the Aviation Infrastructure				
-				
M-NAV has implemented the EUROCONTROL Communication Gateway (ECG), which replaced the previous AFTN system . ECG as a means of AMHS compliance satisfies the AFS requirements for Macedonia. **Regarding ICAO requirements migration of OPMET Data Exchange of Traditional Alphanumeric Code to IWXXM, M-NAV plans to upgrade existing AFTN/AMHS switch with basic services to AFTN/AMHS with extended services.** **The deadline for implementation is April 2021.**				**31/12/2020**
ASP (By:12/2018)				
M-NAV	M-NAV has implemented the EUROCONTROL Communication Gateway (ECG), which replaced the previous AFTN system.	-	44%	Late 31/12/2020

COM11.1	**Voice over Internet Protocol (VoIP) in En-Route** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2021		**40%**	**Ongoing**
Key Feature: Enabling the Aviation Infrastructure				
-				
Planned with the new communication system.				**30/06/2021**
ASP (By:12/2021)				
M-NAV	Planned with the new communication system.	VoIP	40%	Ongoing 30/06/2021

COM11.2	**Voice over Internet Protocol (VoIP) in Airport/Terminal** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2023		**%**	**Not Applicable**
Key Feature: Enabling the Aviation Infrastructure				
-				
TMA and airport terminal do not need VoIP. Communication limited to adjacent Skopje ACC.				**-**
ASP (By:12/2023)				
M-NAV	-	VoIP	%	Not Applicable -

COM12	**New Pan-European Network Service (NewPENS)** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability (33 ANSPs): 31/12/2020		**25%**	**Ongoing**
Links: B1-SWIM | Key Feature: Enabling the Aviation Infrastructure				
-				
-				**31/12/2020**
ASP (By:12/2024)				
M-NAV	M-NAV participates in NEW PENS procurement process and plans to connect to NEW PENS.	-	25%	Ongoing 31/12/2020
APO (By:12/2024)				
SKOPJE Airport	-	-	%	Not Applicable -

ENV01	**Continuous Descent Operations (CDO)** ***Timescales:*** - not applicable -		**0%**	**Not yet planned**
Links: B0-CDO, B1-CDO | Key Feature: Advanced Air Traffic Services				
LWSK - Skopje Airport **(Outside Applicability Area)**				
In the following months, depending on the availability of resources, M-NAV will elaborate and analyze further needs and requirements for applying CDO.				**-**
ASP (By:12/2023)				
M-NAV	-	-	0%	Not yet planned -
APO (By:12/2023)				
SKOPJE Airport	-	-	%	Not Applicable -

FCM03	**Collaborative Flight Planning** ***Timescales:*** Initial operational capability: 01/01/2000 Full operational capability: 31/12/2017		**34%**	**Late**
Links: B0-NOPS | Key Feature: Optimised ATM Network Services				
-				
Will be part of the new ATM system, planned to be operational by 31/12/2021.				**31/12/2021**
ASP (By:12/2017)				
M-NAV	Will be part of the new ATM system, planned to be operational by 31/12/2021.	-	34%	Late 31/12/2021

FCM04.2	**Short Term ATFCM Measures (STAM) - Phase 2** ***Timescales:*** Full operational capability: 31/12/2021		**5%**	**Ongoing**
Key Feature: Optimised ATM Network Services				
-				
Currently there is no operational need for STAM P2. However, the new system will have the capability to support STAM P2. **The new system is planned to be operational 31/12/2021**				**31/12/2021**
ASP (By:12/2021)				
M-NAV	Currently there is no operational need for STAM P2. However, the new system will have the capability to support STAM P2.	-	5%	Ongoing 31/12/2021

FCM05	**Interactive Rolling NOP** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
Links: B1-ACDM, B1-NOPS | Key Feature: Optimised ATM Network Services				
-				
M-NAV has no need and no plans to deploy LARA in a near future therefore the AIXM 5.1 interface is not applicable. AOP is not being implemented at Skopje Airport therefore there is no need for integration into the NOP				**-**
ASP (By:12/2021)				
M-NAV	-	-	%	Not Applicable -
APO (By:12/2021)				
SKOPJE Airport	-	-	%	Not Applicable -

FCM06	**Traffic Complexity Assessment** ***Timescales:*** Full operational capability: 31/12/2021		**10%**	**Ongoing**
Links: B1-NOPS | Key Feature: Optimised ATM Network Services				
-				
Planned for implementation within the new ATM system				**31/12/2021**
ASP (By:12/2021)				
M-NAV	Planned for implementation within the new ATM system	-	10%	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				
-				
No Plan yet, pending evolution of the concept.				-
ASP (By:12/2021)				
M-NAV	No Plan yet, pending evolution of the concept	-	0%	Not yet planned -

INF07	**Electronic Terrain and Obstacle Data (eTOD)** ***Timescales:*** Initial operational capability: 01/11/2014 Full operational capability: 31/05/2018		**5%**	**Late**
Key Feature: Enabling the Aviation Infrastructure				
-				
CAA still has to develop a regulatory framework and adopt a national TOD policy. Depending on the CAA's fulfillment of the obligations, M-NAV will develop a TOD implementation plan and act accordingly.				**31/12/2022**
REG (By:05/2018)				
CAA	CAA still has to develop a regulatory framework and adopt a national TOD policy.	-	0%	Late 31/05/2022
ASP (By:05/2018)				
M-NAV	Depending on the CAA's fulfillment of the obligations, M-NAV will develop a TOD implementation plan and act accordingly.	-	10%	Late 31/12/2022
APO (By:05/2018)				
SKOPJE Airport	Depending on the CAA's fulfillment of the obligations, LWSK will develop a TOD implementation plan and act accordingly.	-	10%	Late 31/12/2022

INF08.1	**Information Exchanges using the SWIM Yellow TI Profile** ***Timescales:*** - not applicable -		**%**	**Not yet planned**
Links: B1-DATM, B1-SWIM | Key Feature: Enabling the Aviation Infrastructure				
-				
No plans for this implementation objective.				-
ASP (By:12/2024)				
M-NAV	No plans for this implementation objective.	-	%	Not yet planned -
MIL (By:12/2024)				
Mil. Authority	No plans for this implementation objective.	-	%	Not yet planned -
APO (By:12/2024)				
SKOPJE Airport	No plans for this implementation objective.	-	%	Not yet planned -

ITY-ACID	**Aircraft Identification** ***Timescales:*** Entry into force of the Regulation: 13/12/2011 System capability: 02/01/2020		**3%**	**Late**
Key Feature: Enabling the Aviation Infrastructure				
-				
To be implemented in the new ATM system latest 31/12/2021				**31/12/2021**
ASP (By:01/2020)				
M-NAV	To be implemented in the new ATM system	-	3%	Late 31/12/2021

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		**15%**	**Late**
Links: B0-DATM | Key Feature: Enabling the Aviation Infrastructure				
-				
-				**31/12/2020**
REG (By:06/2017)				
CAA	The Reg(EU)73/2010 and Reg(EU)1029/2014 are transposed into national legislation under ARC NO 6.9 with effective date 01/2018.	-	10%	Late 31/12/2020
ASP (By:06/2017)				
M-NAV	-	-	27%	Late 31/12/2020
APO (By:06/2017)				
SKOPJE Airport	-	-	0%	Late 31/12/2020

ITY-AGDL	**Initial ATC Air-Ground Data Link Services** ***Timescales:*** ATS unit operational capability: 05/02/2018 Aircraft capability: 05/02/2020		**8%**	**Late**
Links: B0-TBO | Key Feature: Enabling the Aviation Infrastructure				
-				
The data link air-ground, ground-ground infrastructure capabilities and ATM system upgrades are planned for 2021, without prejudice to the evolution of the technical aspects and possible amendments of the Regulation.				**31/12/2021**
REG (By:02/2018)				
CAA	CAA to approve the operational deployment of data link services by M-NAV. FHA, PSSA for the new ATM system has been approved by the CAA.	-	5%	Late 31/12/2021
ASP (By:02/2018)				
M-NAV	The data link air-ground, ground-ground infrastructure capabilities and ATM system upgrades are planned for 2021.	-	8%	Late 31/12/2021
MIL (By:01/2019)				
Mil. Authority	State transport fleet is not flying above FL 285.	-	%	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		**3%**	**Ongoing**
Key Feature: Enabling the Aviation Infrastructure				
-				
-				**31/12/2021**
REG (By:12/2018)				
CAA	This objective will be covered in 2021 through support to states	-	0%	Planned 31/12/2021
ASP (By:12/2018)				
M-NAV	-	-	5%	Ongoing 31/12/2020
MIL (By:12/2020)				
Mil. Authority	Compelling technical or budgetary constraints do not allow the equipage of State Aircraft	-	%	Not Applicable -
APO (By:12/2018)				
SKOPJE Airport	Due to the expected high level of non-equipped traffic (general aviation, military traffic, etc.) it will not be possible to convert any of the airport frequency assignments. therefore the AOP SLoAs are considered as Not Applicable	-	%	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		**10%**	**Late**
Links: B0-FICE, B1-FICE | Key Feature: Enabling the Aviation Infrastructure				
-				
The new FDPS will support the OLDI data exchanged over TCP/IP V6. Will be part of the new ATM system, planned to be operational by the 31/12/2021				**31/12/2021**
ASP (By:12/2014)				
M-NAV	M-NAV implemented the OLDI data exchange via TCP/IP by a dedicated router, which encapsulates X.25 data packages into TCP/IP protocol. The new FDPS will support the OLDI data exchanged over TCP/IP V6.	-	10%	Late 31/12/2021
MIL (By:12/2014)				
Mil. Authority	Military does not provide ATS and does not have the ATM system because there is no operational need for it, all ATS services for military flight are provided by civil ANSP M-NAV.	-	%	Not Applicable -

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		**70%**	**Late**
Links: B0-ASUR | Key Feature: Enabling the Aviation Infrastructure				
-				
-				**31/12/2020**
REG (By:02/2015)				
CAA	The Regulation is transposed into national legislation.(see Part 1.3 EU regulations transposed into national Legislation)	-	10%	Late 01/07/2020
ASP (By:02/2015)				
M-NAV	The Regulation is transposed into national legislation.(see Part 1.3 EU regulations transposed into national Legislation)	-	85%	Late 31/12/2020
MIL (By:06/2020)				
Mil. Authority	No operational need for the military regarding this SloA.	-	%	Not Applicable -

NAV03.1	**RNAV 1 in TMA Operations** ***Timescales:*** Initial operational capability: 01/01/2001 Locally determined number of RNAV1 SID/STAR, where established: 06/06/2030		**9%**	**Ongoing**
Links: B0-CCO, B0-CDO, B1-RSEQ | Key Feature: Advanced Air Traffic Services				
-				
Depending on the national plans, the availability and the plans for further development of RNAV 1 in TMA operations is in progress. **As a short/medium term goal in the PBN implementation plan, RNAV 1 operations in TMA are planned for 2018-2023.**				**31/12/2023**
REG (By:06/2030)				
CAA	-	-	10%	Ongoing 31/12/2023
ASP (By:06/2030)				
M-NAV	Implementation of P-RNAV procedures within Skopje TMA is foreseen for the end of 2023. The PBN implementation plan is subject to Government approval, and all affected stakeholders will produce the required procedures, accordingly.	Supply and installation of new DME for Skopje Airport	8%	Ongoing 31/12/2023

NAV03.2	**RNP 1 in TMA Operations** ***Timescales:*** Start: 07/08/2018 Locally determined number of RNP1 SID/STAR, where established.: 06/06/2030		**0%**	**Planned**
Links: B1-RSEQ | Key Feature: Advanced Air Traffic Services				
-				
The plan for RNP 1 in TMA is foreseen to be implemented with the time frame defined in the PBN implementation plan. **As a long-term goal in the PBN implementation plan, RNP operations in TMA are planned for 2023.**				**31/12/2023**
REG (By:06/2030)				
CAA	Meetings have taken place (part of the EUROCONTROL support to states agenda items). The implementation plan is in phase of being reviewed by the ANSP. The CAA workplan has been drafted. Working Groups meetings between stakeholders are taking place are taking place	-	%	Planned 31/12/2023
ASP (By:06/2030)				
M-NAV	The plan for RNP 1 in TMA is foreseen to be implemented with the time frame defined in the PBN implementation plan. It is up to CAA to approve the PBN implementation plan, and accordingly, M-NAV will efficiently produce the required procedures, taking into account the managerial decision with the priorities between RNAV and RNP operations in TMA.	-	0%	Planned 31/12/2023

NAV10	**RNP Approach Procedures to instrument RWY** ***Timescales:*** Initial operational capability: 01/06/2011 Instrument RWY ends served by precision approach (including PCP airports): 25/01/2024 Instrument RWY ends without precision approach at other ECAC+ instrument RWYs.: 25/01/2024		**33%**	**Ongoing**
Links: B0-APTA | Key Feature: Advanced Air Traffic Services				
-				
The PBN implementation plan (PBN IP) will be effective after the proposed changes into the Aviation Act are accepted. **According to the proposed PBN IP, The implementation of the roadmap steps are defined in the PBN implementation plan.** **The first LNAV/VNAV/Baro procedures are expected to be implemented by 03/12/2021.** **The Regulator is expected to establish proper procedures for training of all involved personnel, design criteria and monitoring of the signal.**				**31/12/2023**
REG (By:01/2024)				
CAA	The PBN implementation plan (PBN IP) will be effective after the proposed changes into the Aviation Act are accepted. According to the proposed PBN IP, The implementation of the roadmap steps are defined in the PBN implementation plan. The first LNAV/VNAV/Baro procedures are expected to be implemented by 03/12/2020. The Regulator is expected to establish proper procedures for training of all involved personnel, design criteria and monitoring of the signal.	-	10%	Ongoing 31/12/2023
ASP (By:01/2024)				
M-NAV	LNAV/VNAV (APV/Baro) procedures for Skopje TMA are planned to be implemented by the 03/12/2020.	Supply and installation of new DME for Skopje Airport	40%	Ongoing 31/12/2023

NAV12	**ATS IFR Routes for Rotorcraft Operations** ***Timescales:*** IFR ATS route above/below FL150, SID and STAR for Rotorcraft Operations, where established: 06/06/2030		**%**	**Not yet planned**
Links: B1-APTA | Key Feature: Advanced Air Traffic Services				
-				
For the time being, there is no operational need for IFR routes in TMA for Rotorcraft, due to extremely low rotorcrafts traffic.				-
REG (By:06/2030)				
CAA	-	-	%	Not yet planned -
ASP (By:06/2030)				
M-NAV	-	-	%	Not yet planned -

SAF11	**Improve Runway Safety by Preventing Runway Excursions** ***Timescales:*** Initial operational capability: 01/09/2013 Full operational capability: 31/01/2018		**20%**	**Late**
Key Feature: High Performing Airport Operations				
-				
The CAA planes to adopt certain parts from the European Action Plan for prevention of runway excursion. **The stakeholders are expected to fulfill their obligations in accordance with the prescribed provisions from the EAFPPRE.**				**01/06/2021**
REG (By:01/2018)				
CAA	This objective will be covered with support from Eurocontrol under Support to States. The support is plan for 2020 and 2021.Futhermore, there is nominated focal points from all stakeholders in our State, which will establish communication and undertake the necessary activities.	-	0%	Late 01/06/2021
ASP (By:12/2014)				
M-NAV	-	-	0%	Not yet planned -
Mil. Authority	-	-	0%	Not yet planned -
APO (By:12/2014)				
Mil. Authority	-	-	100%	Completed 31/12/2018
SKOPJE Airport	-	-	100%	Completed 31/12/2018

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				
-				
Night Direct Routing was implemented in 2013, at the time planned for phase I of III in the implementation of full FRA in Skopje FIR. Full FRA in Skopje FIR above FL245 has been implemented in June 2016.				**24/04/2013**
ASP (By:12/2017)				
M-NAV	-	-	100%	Completed 24/04/2013

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				
-				
STCA function has been implemented on the ATM system deployed for service provision at Skopje ACC/APP. The system at Ohrid APP is also equipped with the STCA function.				**31/12/2009**
ASP (By:01/2013)				
M-NAV	STCA function has been implemented by all ATS units that provide radar service. The ATCO training on STCA was done in 2009.	-	100%	Completed 31/12/2009

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				
-				
See comments at stakeholder level.				**31/12/2016**
REG (By:12/2015)				
CAA	-	-	100%	Completed 31/12/2016
ASP (By:03/2012)				
M-NAV	The training has been completed during the refresher ATC course at the end of 06/2012. A monitoring system of the performance of ACAS in the ATC environment has been established in 12/2012	-	100%	Completed 31/12/2012
MIL (By:12/2015)				
Mil. Authority	No State aircraft fulfil the criteria for equipage.	-	%	Not Applicable -

FCM01	**Implement enhanced tactical flow management services** ***Timescales:*** Initial operational capability: 01/08/2001 Full operational capability: 31/12/2006		**28%**	**Late**
Links: B0-NOPS | Key Feature: Optimised ATM Network Services				
-				
The provision of correlated surveillance data to ETFMS and implementation of FSA will be part of the new ATM system, planned to be operational by 31/12/2021.				**31/12/2021**
ASP (By:07/2014)				
M-NAV	M-NAV decided to procure a new ATM system, which is required for ARTAS implementation, and FDPS upgrade. Will be part of the new ATM system, planned to be operational by 31/12/2021.	-	28%	Late 31/12/2021

ITY-COTR	**Implementation of ground-ground automated co-ordination processes** ***Timescales:*** Entry into force of Regulation: 27/07/2006 For putting into service of EATMN systems in respect of notification and initial coordination processes: 27/07/2006 For putting into service of EATMN systems in respect of Revision of Coordination, Abrogation of Coordination, Basic Flight Data and Change to Basic Flight Data: 01/01/2009 To all EATMN systems in operation by 12/2012: 31/12/2012		**100%**	**Completed**
Links: B0-FICE | Key Feature: Advanced Air Traffic Services				
-				
The current ATM systems at Skopje ACC/APP/TWR and Ohrid APP/TWR unit are capable to send and receive complete set of OLDI messages (ACT, LAM, PAC, REV, MAC ABI), to present them to the controllers who could interact, modify and send back to the FDPS system.				**30/06/2004**
ASP (By:12/2012)				
M-NAV	REV/PAC/MAC are implemented. ROF/COF/MAS/LOF and NAN will be implemented in the new ATM system.	-	100%	Completed 30/06/2004
MIL (By:12/2012)				
Mil. Authority	No operational needs exist for implementation of BFD/CFD exchange with the military authorities, due to the fact that M-NAV is responsible for handling OAT/GAT traffic.	-	%	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			
LWOH - OHRID			
At this time, there is no operational need for Remote tower at Ohrid.			-

AOP14	Remote Tower Services *Applicability and timescale: Local*	%	Not Applicable
Links: B1-RATS | Key Feature: High Performing Airport Operations			
LWSK - Skopje Airport			
No plan for implementation of Remote tower in Skopje, no operational need.			-

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			
LWSK - Skopje Airport			
Skopje airport does not intent to implement. No surface movement surveillance aids available.			-

AOP16	Guidance assistance through airfield ground lighting *Applicability and timescale: Local*	%	Not Applicable
Links: B1-RSEQ, B2-SURF | Key Feature: High Performing Airport Operations			
LWSK - Skopje Airport			
Skopje airport does not intent to implement. No surface movement surveillance aids available.			-

AOP17	Provision/integration of departure planning information to NMOC *Applicability and timescale: Local*	%	Not yet planned
Links: B1-ACDM, B1-NOPS | Key Feature: High Performing Airport Operations			
LWSK - Skopje Airport			
Unavailability of systems for ACDM and no much traffic.			-

AOP18	Runway Status Lights (RWSL) *Applicability and timescale: Local*	%	Not Applicable
Links: B2-SURF | Key Feature: High Performing Airport Operations			
LWSK - Skopje Airport			
No needs for Skopje at this moment.			-

ATC18	Multi-Sector Planning En-route - 1P2T *Applicability and timescale: Local*	%	Planned
Key Feature: Advanced Air Traffic Services			
-			
Planned to be implemented in Skopje ACC, through the whole FIR. Planned to be implemented on all 6 sectors, but with only 2 planning positions. (1 planning controller per 3 sectors). Maximum available positions is 8. Planned as a capability with the new ATM system, however, the availability of this configuration will be additionally assessed, taking into account the features of the new ATM system, the increase and the complexity of the traffic.			31/12/2021

ATC19	Enhanced AMAN-DMAN integration *Applicability and timescale: Local*	%	Not Applicable
Links: B2-RSEQ | Key Feature: Advanced Air Traffic Services			
-			
Skopje has no needs, not a busy airport.			-

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			
-			
Still under investigation.			-

ENV02	Airport Collaborative Environmental Management *Applicability and timescale: Local*	%	Ongoing
Key Feature: High Performing Airport Operations			
LWSK - Skopje Airport			
The airport Safety Committee, regarding the impact on the environment, from the ATC landing and departure procedures, performs regular measurements and monitoring twice a year of the noise on two referent points on the Airport Skopje. The first being the Aerodrome Reference Point, and the second is at the begging of the threshold. Delayed to 31/12/2020.			31/12/2020

ENV03	Continuous Climb Operations (CCO) *Applicability and timescale: Local*	%	Not Applicable
Links: B0-CCO | Key Feature: Advanced Air Traffic Services			
LWOH - OHRID			
No operational need exist for CCO in Ohrid.			-

ENV03	Continuous Climb Operations (CCO) *Applicability and timescale: Local*	%	Not yet planned
Links: B0-CCO | Key Feature: Advanced Air Traffic Services			
LWSK - Skopje Airport			
After the adoption of the PBN Implementation Plan, the relevant procedures for application of CCO will be assessed.			-

6. Annexes

A. Specialists involved in ATM implementation reporting for North Macedonia:

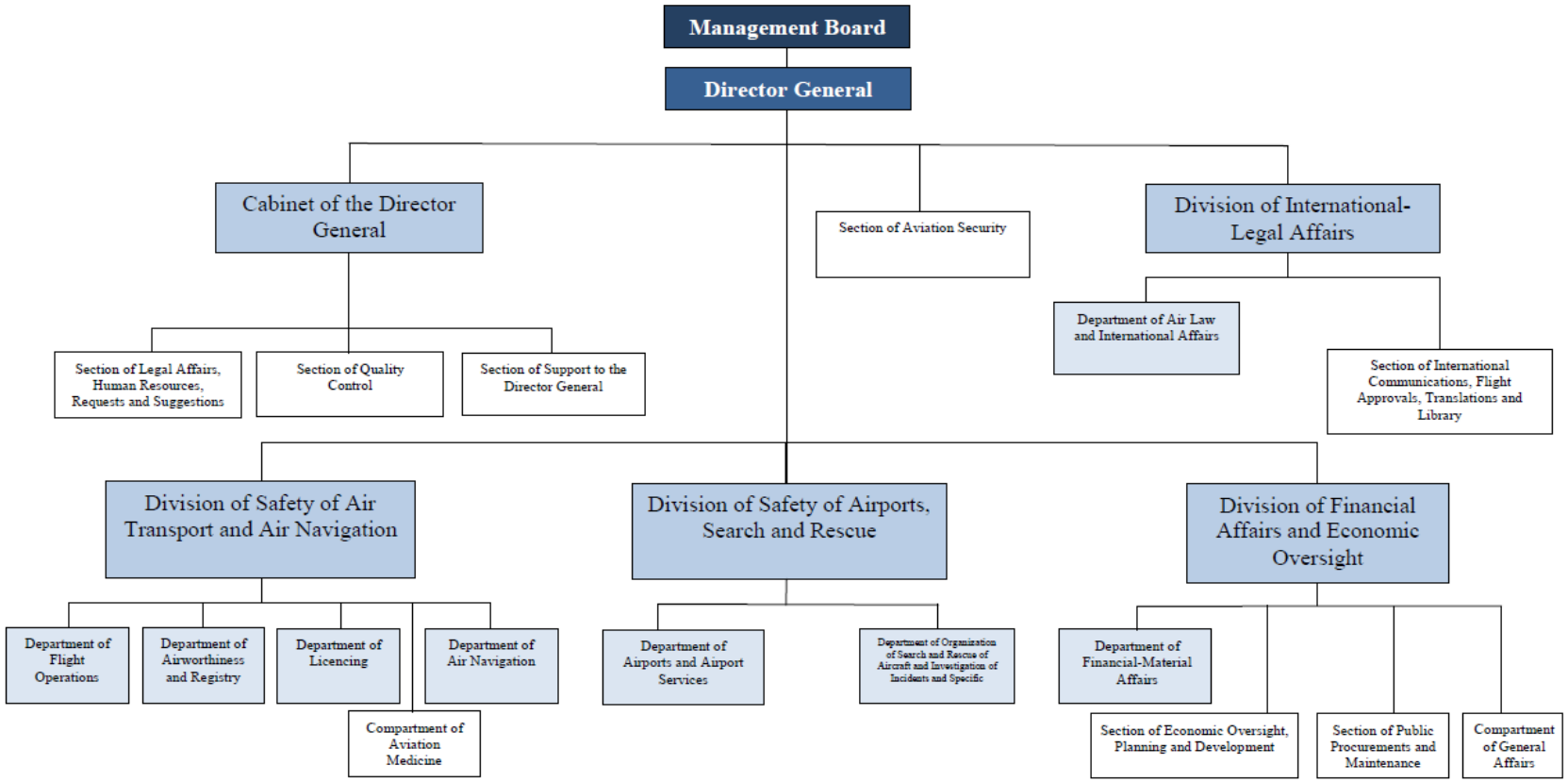
LSSIP Co-ordination

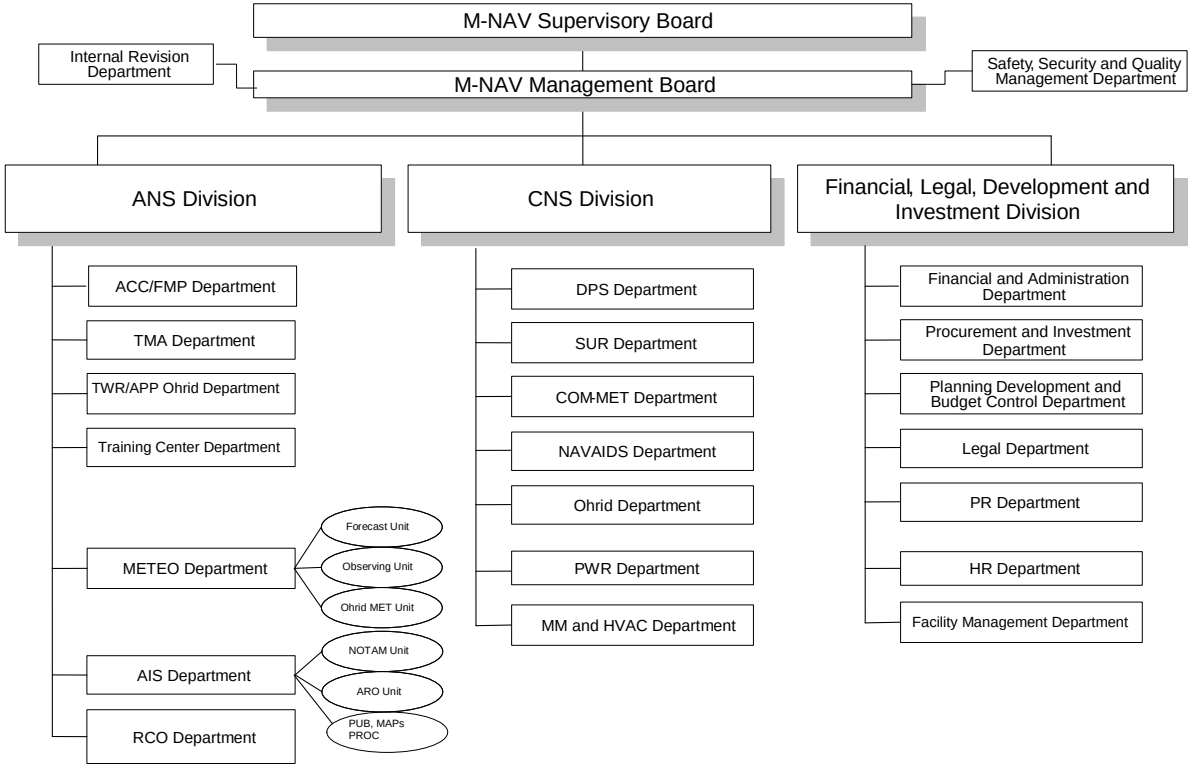
LSSIP Focal Points	Organisation	Name
LSSIP National Focal Point	M-NAV	Jasminka GOCEVSKA
LSSIP Focal Point for NSA/CAA	CAA	Irena LAZAREVSKA Hristina NASKOVSKA
LSSIP Focal Point for ANSP	M-NAV	Jasminka GOCEVSKA
LSSIP Focal Point for Airport	Skopje Airport	Sasho SHTERJOV
LSSIP Focal Point for Military	North Macedonian Aviation Operation Unit	Maj. Ljupco ARNAUTOVSKI

Other Focal Points	Organisation	Name
Focal Point for U-space		MARKOVSKA Katarina (ANSP) FILIPOV Aleksandar(ANSP) LAZAREVSKA Irena (CAA) STOJANOVSKI Dragi (CAA)
Focal Point for NETSYS		JAKIMOV Milan (ANSP) PALCEVSKI Aleksandar (ANSP) LAZAREVSKA Irena (CAA) IVANOV Gjorgi (CAA)

B. National stakeholders organisation charts

ORGANIZATIONAL STRUCTURE OF THE CIVIL AVIATION AGENCY




M-NAV Supervisory Board
Internal Revision Department
M-NAV Management Board
Safety, Security and Quality Management Department
ANS Division
CNS Division
Financial, Legal, Development and Investment Division
ACC/FMP Department
TMA Department
TWR/APP Ohrid Department
Training Center Department
METEO Department
Forecast Unit
Observing Unit
Ohrid MET Unit
AIS Department
NOTAM Unit
ARO Unit
PUB, MAPs PROC
RCO Department
DPS Department
SUR Department
COM-MET Department
NAVAIDS Department
Ohrid Department
PWR Department
MM and HVAC Department
Financial and Administration Department
Procurement and Investment Department
Planning Development and Budget Control Department
Legal Department
PR Department
HR Department
Facility Management Department

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. SESAR Solutions implemented in a voluntary way[3]

This annex is considered as not applicable for North Macedonia.

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.

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

E. 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.

F. Glossary of abbreviations

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

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

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

Term	Description
AF	ATM Functionality
CAA	Civil Aviation Agency
FT	Fast Track
ISIS	Implementation of SES in South East Europe
M-NAV	North Macedonian Air Navigation Service Provider
MAOU	North Macedonian Aviation-Operation Unit
MASOC	North Macedonian Air-Sovereignty-Operations Center
PCP	Pilot Common Project
PDP	Preliminary Deployment Programme
S-AF	Sub ATM Functionality