25 YEARS of ATM Implementation Reporting in Europe

EUROCONTROL

LSSIP 2018 - HUNGARY
Local Single Sky ImPlementation

Level 1 - Implementation Overview

FOREWORD

The Local Single Sky ImPlementation (LSSIP) documents are the yearly expression of 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). They provide an extensive view, 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 European aviation policies.

The Master Plan Level 3 and LSSIP Implementation Planning and Reporting are well-established and mature mechanisms, with a long history dating back more than 25 years. They continue to provide a well-recognised stable platform for ATM implementation planning, monitoring and reporting, while continuously adapting to the changing environment.

The reliability and quality of data provided by national stakeholders allowed, for the fourth 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. The Agency undertakes this work, on behalf of ICAO, for all 55 ICAO/EUR States in accordance with the Global Air Navigation Plan (GANP). This ASBUs Implementation Monitoring Report is a formal companion document and integral part of the ICAO European Air Navigation Plan.

The Agency promotes efficient practices to avoid duplication of work by cooperating with the European Defence Agency (EDA) and collecting information on their behalf through the LSSIP process.

In this light, the Agency is also cooperating with the SESAR Deployment Manager and the European Aviation Safety Agency (EASA).

As always, I would like again to thank all the stakeholders for their 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!

Philippe MERLO
Director
Directorate European Civil-Military Aviation
EUROCONTROL

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LSSIP Guidance Material	http://www.eurocontrol.int/articles/lssip
Master Plan Level 3 – Plan Edition 2018	http://www.eurocontrol.int/articles/european-atm-master-plan-level-3-implementation-plan
Master Plan Level 3 – Report Year 2018	http://www.eurocontrol.int/articles/european-atm-master-plan-level-3-implementation-report
European ATM Portal	https://www.eatmportal.eu and http://www.atmmasterplan.eu/
STATFOR Forecasts	http://www.eurocontrol.int/statfor
Acronyms and abbreviations	https://www.eurocontrol.int/sites/default/files/content/documents/official-documents/guidance/Glossaries.pdf
National AIP	http://ais.hungarocontrol.hu/en/
FAB Performance Plan	Latest FABCE Performance Plan V2.0 For details contact: Mr Matej Eljon matej.eljon@fab-ce.eu

APPROVAL SHEET

The following authorities have approved all parts of the LSSIP Year 2018 document and their signatures confirm the correctness of the reported information and reflect their commitment to implement the actions laid down in the European ATM Master Plan Level 3 Implementation Plan – Edition 2018.

Stakeholder / Organisation	Name	Position	Signature
Ministry for Innovation and Technology, Department for Civil Aviation and Inland Navigation	Ms. Erika Der	Head of Department for Civil Aviation and Inland Navigation	
Ministry for Innovation and Technology, Aviation Supervisory Department	dr. Zsolt Veron	Head of Aviation Supervisory Department (Head of CAA)	
Ministry for Innovation and Technology Transportation Safety Bureau	dr. Loránd Becske	Head of Transportation Safety Bureau	
HungaroControl Hungarian Air Navigation Services Pte. Ltd. Co.	Mr. Barnabás Kis	Chief Technology Officer	
Ministry of Defence State Aviation Department	Col. Alexandra Halászné Tóth dr.	Head of the State Aviation Department	
Budapest Airport Zrt.	Mr. Péter Huszka	Chief Operations Officer	
HUN Defence Forces	Brig. Gen. Nándor Kilián	Air Chief	

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Executive Summary

National ATM Context

From 1st of January 2017 the National Transport Authority Aviation Authority (NTA AA) and the Transportation Safety Bureau (TSB) were integrated into the Ministry of National Development (MoND) and the Military Aviation Authority (MAA) was integrated into the Ministry of Defence (MoD). In May 2018 due to governmental reorganisation the aviation related departments of MoND were transferred to operate as a part of the successor of MoND, the Ministry for Innovation and Technology (MIT). The detailed changes and new organigrams are included in this document. Under the supervision of the Deputy State Secretary of Transport are working the Department for Civil Aviation and Inland Navigation (DCAIN) and the Transportation Safety Bureau (TSB). The DCAIN is acting as a controlling and regulatory department while the TSB is responsible for the investigation of civil aviation, rail and water transport related incidents and accidents. The tasks of the Civil Aviation Authority were integrated into the Ministry for Innovation and Technology but functionally separated from the regulatory department. Under the supervision of the Deputy State Secretary for Transport Authority there are four departments (ANS and Aerodrome Supervisory Department, Aviation Supervisory Department, Licensing Department, Risk Assessment Department), which are acting as the civil aviation authority (CAA). The ANS and Aerodrome Supervisory Department is performing the National Supervisory Authority (NSA) tasks.

From 1st of January 2017 the Military Aviation Authority (MAA) is integrated into the Ministry of Defence (MoD). The supervision of military aviation is managed by the State Aviation Department.

HungaroControl is the main air navigation service provider in the State. Separate military ATC is provided for military TMAs and CTRs. Regional ANS for military airspace users is provided by HungaroControl.

Airspace Management is a joint responsibility of the Minister of Innovation and Technology and the Minister of Defence. The Government has established the National Airspace Co-ordination Board (NACB) in order to prepare the implementation of the strategic airspace management tasks. The AMC (Airspace Management Cell) is a part of HungaroControl as a joint civil military cell and it is staffed with military and civilian experts. The AMC is an operationally independent body; its activities are supervised by the NACB.

Traffic and Capacity

Evolution of traffic in Hungary

2018

Traffic in Hungary **increased by 11.1%** during summer 2018 (May to October), when compared to the same period during 2017.

2019-2023

The EUROCONTROL Seven-Year Forecast predicts an average annual traffic growth between 1.8% and 5.1% throughout the planning cycle, with a baseline growth of 3.4%.

ACC Budapest

Summer 2018 performance assessment

The ACC capacity baseline was measured with ACCESS at 214, 1% higher than in 2017. During the measured period, the average peak 1 hour demand was 208 and the average peak 3 hour demand was 191.

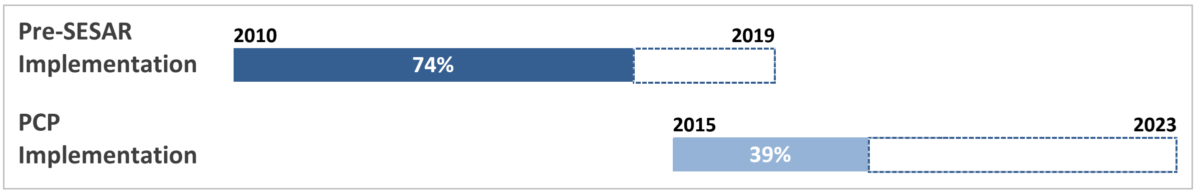
Planning period 2019-2024

Capacity gap is expected at Budapest ACC in the short term due to the high current route traffic flow and the limited number of controller staff.

Progress per SESAR Phase

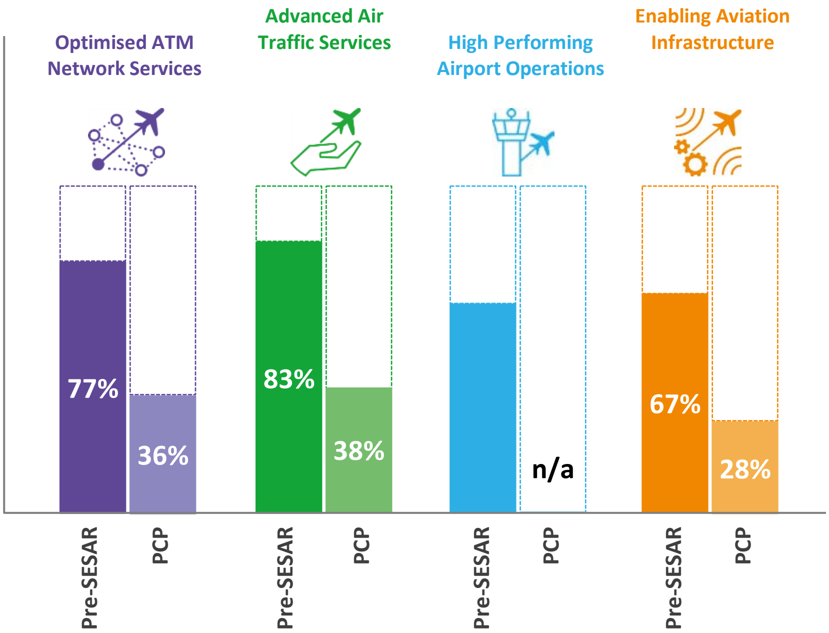
The figure below shows the progress made so far in the implementation of the SESAR baseline and the PCP elements. The percentage is calculated as an average of the relevant objectives as shown in Chapter 6.1 (PCP objectives are marked as such, the rest are considered SESAR baseline); note that two objectives – AOM19.1 and FCM05 – are considered as both part of the SESAR baseline and PCP so their progress contributes to the percentage of both phases.

The objectives declared ‘Achieved’ in previous editions (up to, and including, ATM MP L3 Edition 2011-2017) are also taken into account for as long as they were linked to the Level 2 of the ATM Master Plan and implemented by the State.



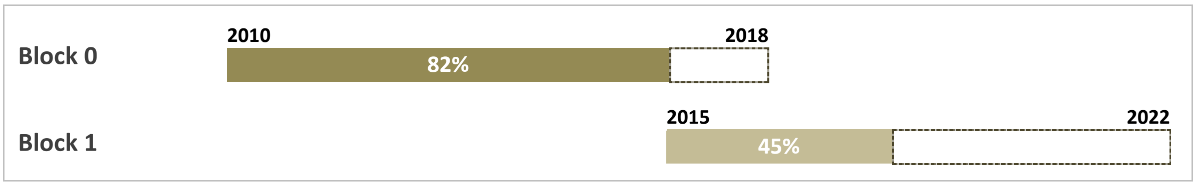
Progress per SESAR Key Feature and Phase

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 Blocks 0 and 1. 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 6.1.



ATM Deployment Outlook

State objectives

Deployed in 2017-2018:	**- RNAV 1 for TMA Operations** [NAV03.1] 70% progress

By 12/2019	By 12/2020	By 12/2021	2022+
- Voice over IP [COM11] 83% progress **- Surveillance Performance & Interoperability** [ITY-SPI] 81% progress **- MTCD & CORA** [ATC12.1] 73% progress **- Collaborative Flight Planning** [FCM03] 62% progress **- NewPENS** [COM12] 47% progress **- AMAN to en-route** [ATC15.1] 28% progress	**- Runway excursions** [SAF11] 75% progress **- Aeronautical Information** [ITY-ADQ] 50% progress **- eTOD** [INF07] 31% progress **- AMHS** [COM10] 30% progress **- Traffic Complexity** [FCM06] 0% progress	**- Real-Time Airspace Data** [AOM19.2] 80% progress **- Extended Flight Plan** [FCM08] 10% progress **- Pre-defined Airspace Configurations** [AOM19.4] 10% progress	**- Free Route Airspace** [AOM21.2] 80% progress **- 8,33 kHz below FL195** [ITY-AGVCS2] 73% progress **- Coordination and transfer** [ATC17] 68% progress

Airport objectives - LHBP - Budapest Liszt Ferenc International Airport

Deployed in 2017-2018: -

By 12/2019	By 12/2020	By 12/2021	2022+
- A-SMGCS RMCA (former Level 2) [AOP04.2] 50% progress	**- Remote Tower** [AOP14] 70% progress **- CCOs** [ENV03] 50% progress		**- Airport CDM** [AOP05] 62% 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 2018, 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, an overview of the Airspace Organisation and Classification, the ATC Units, the ATM systems operated by the main ANSP are also provided;

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 gives also 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 a set of conclusions extracted from the MP L3 Implementation Report 2018, which are relevant to the State/stakeholders concerned. The State reports how they have handled those conclusions and the actions taken during the year to address the concerns expressed by those conclusions;

Chapter 4 provides the main Implementation Projects (at national, FAB and regional level) which contribute directly to the implementation of the MP Operational Improvements and/or Enablers and Implementation Objectives. Level 1 document covers 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 Level 2 document;

Chapter 5 deals with other cooperation activities beyond Implementation Projects. It provides an overview of the FAB cooperation and also all other regional 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 6 contains aggregated information at State level covering the overall level of implementation, implementation per SESAR Key Feature and implementation of ICAO ASBUs. In addition the high-level information on progress and plans of each Implementation Objective is presented. 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.

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 to achieve their respective Stakeholder Lines of Action (SLoAs) as established in the European ATM Master Plan L3 Implementation Plan Edition 2018. In addition it covers detailed description of the Implementation Projects for the State as extracted from the LSSIP Data Base.

The information contained in Chapter 6 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

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

Organisation		Since
ECAC	✓	1990
EUROCONTROL	✓	1992
European Union	✓	2004
EASA	✓	2004
ICAO	✓	1969
NATO	✓	1999
ITU	✓	1866

Geographical description of the FIR(s)

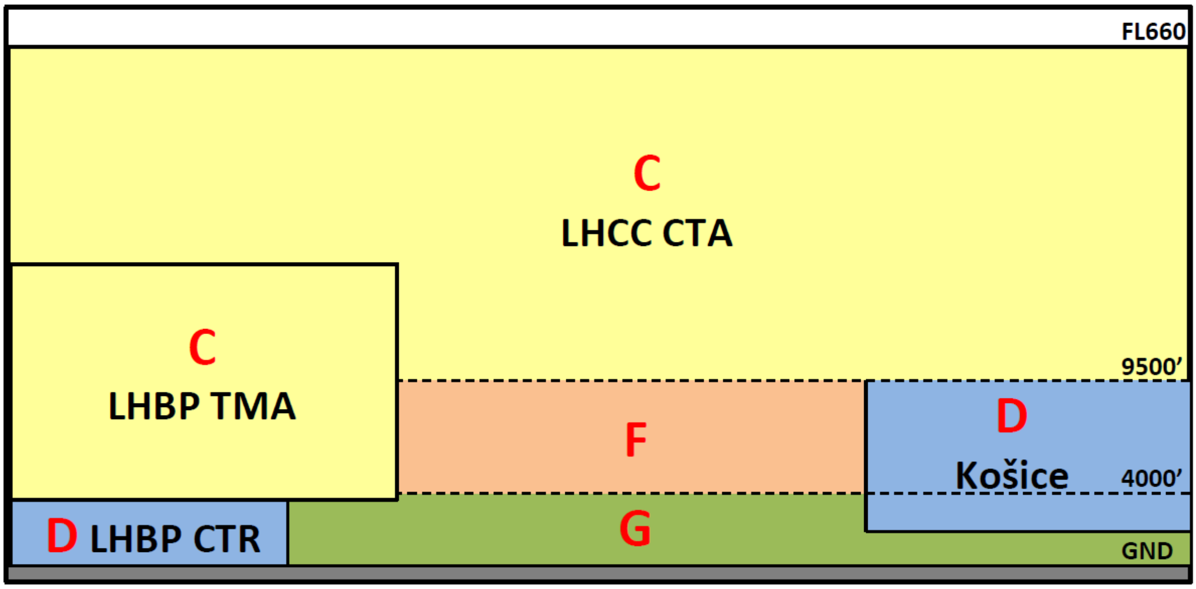
The geographical scope of this document addresses the Budapest FIR.

Budapest FIR is surrounded by FIRs of 7 States, namely Austria, Slovak Republic, Slovenia, Croatia, Serbia, Romania and Ukraine.

Airspace Classification and Organisation

The current classification of the airspace is described in the table and graph below.

Airspace Class	Main Rules	Applicable airspace
Controlled Airspace		
Class C	IFR and VFR permitted (en-route VFR); all flights are subject to ATC	Controlled airspace from 9500' AMSL up to FL660 and Budapest TMA
Class D	IFR and VFR permitted; all flights are subject to ATC	Budapest CTR from GND up to 2000' AMSL
Class D	IFR and VFR permitted; all flights are subject to ATC	Košice TMA below 9500' AMSL
Class D	IFR and VFR permitted; all flights are subject to ATC	LESMO area between FL245 and 5500' AMSL
Class D	IFR and VFR permitted; all flights are subject to ATC	LHSM, LHDC CTA/CTR from GND up to 9500' AMSL
Uncontrolled Airspace		
Class F	IFR and VFR flights are permitted and receive FIS, transponder C-mode operation is mandatory	Uncontrolled airspace between 4000 and 9500' AMSL
Class G	IFR and VFR flights are permitted and receive flight information service if requested.	Uncontrolled airspace below 4000' AMSL



ATC Units

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

ATC Unit	Number of sectors		Associated FIR(s)	Remarks
	En-route	TMA		
Budapest ACC	12		--	For overflights, inbound/outbound traffic to/from aerodromes within or adjacent to the Budapest FIR
Budapest APP		4	--	For inbound/outbound traffic to/from aerodromes within the Budapest TMA.
Budapest TWR			-	For aerodrome traffic at Budapest Liszt Ferenc International Airport (LHBP)

1.2. National Stakeholders

From 1st of January 2017 the National Transport Authority Aviation Authority (NTA AA) and the Transportation Safety Bureau (TSB) were integrated into the Ministry of National Development (MoND) and the Military Aviation Authority (MAA) was integrated into the Ministry of Defence (MoD). In may 2018 due to governmental reorganisation the aviation related departments of MoND were transferred to operate as a part of the successor of MoND, the Ministry for Innovation and Technology (MIT).

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

- Ministry for Innovation and Technology and the Ministry of Defence (MoD) are jointly responsible for the governance of air traffic services;

The departments related to aviation inside of the organisation of the MIT are the followings:

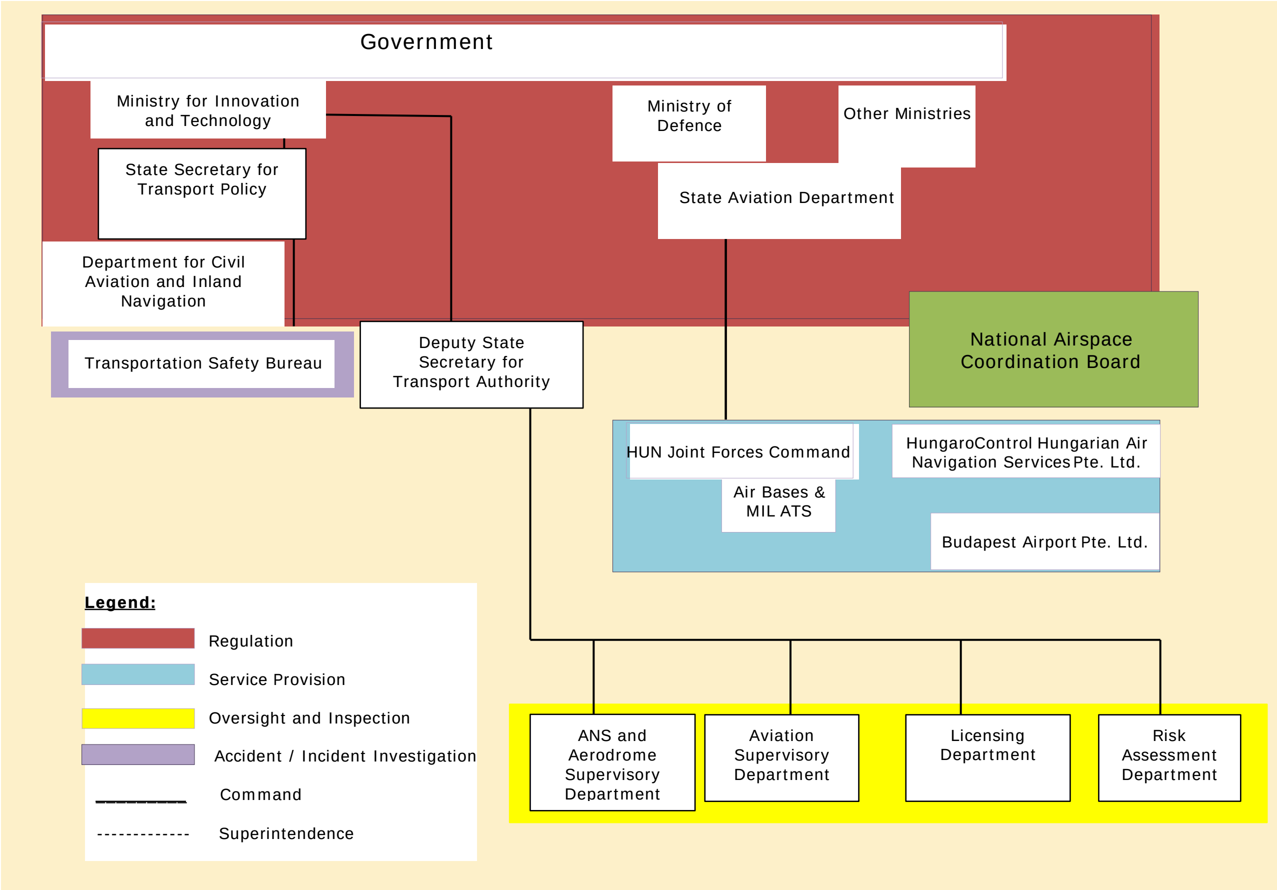
- Under the supervision of the Deputy State Secretary of Transport are working the Department for Civil Aviation and Inland Navigation (DCAIN) and the Transportation Safety Bureau (TSB). The DCAIN is acting as a controlling institution while the TSB is responsible for the investigation of civil aviation, rail and water transport related incidents and accidents;
- Under the supervision of the Deputy State Secretary for Transport Authority there are four departments:
    - ANS and Aerodrome Supervisory Department
    - Aviation Supervisory Department
    - Licensing Department
    - Risk Assessment Department

  which are acting as the civil aviation authority (CAA). The ANS and Aerodrome Supervisory Department is performing the National Supervisory Authority (NSA) tasks.

- HungaroControl Pte. Ltd. Co acting as the Air Navigation Service Provider (ANSP);

The role of the military aviation authority is integrated into the Ministry of Defence.

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



Civil Regulator(s)

General Information

The four departments under the Deputy State Secretary for Transport Authority have the oversight over civil aviation in Hungary. The MIT Department for Civil Aviation and Inland Navigation and the Ministry of Defence are responsible for the regulation of aviation.

Different other national entities having regulatory responsibilities in ATM, according to the National Aviation Act are summarised in the table below.

Activity in ATM:	Organisation responsible	Legal Basis
Rule-making	Parliament, Government, Ministry for Innovation and Technology and Ministry of Defence	Aviation Act XCVII/1995
Safety Oversight	Ministry for Innovation and Technology/ Deputy State Secretary for Transport Authority/ ANS and Aerodrome Supervisory Department	Aviation Act XCVII/1995, Gov. Decree 382/2016. (XII. 2.)
Enforcement actions in case of non-compliance with safety regulatory requirements	Ministry for Innovation and Technology	Commission Regulation (EC) 549/2004, Aviation Act XCVII/1995
Rules of Procedures	Ministry for Innovation and Technology	Gov. Decree 532/2017. (XII. 29.) on the rules of additional procedures in the field of aviation
Airspace	Minister for Innovation and Technology and Minister of Defence	Aviation Act XCVII/1995; Gov. Decree 4/1998., (I.16.), MO 26/2007. (III.1.) GKM
Economic	Minister of Finance/ National and Customs Administration (access of data) Ministry for Innovation and Technology, together with the Minister of Finance (Route charges)	Act CL of 2017 on the Rules of Taxation* 84/2011. (XII.29.) NFM Ministerial Order on the charges payable after the use of the Hungarian airspace.
Environment	Minister for Innovation and Technology together with the Minister of Rural Development (Noise protection)	Gov. Decree 176/1997. (X.11.) on the rules of the designation, benefit and termination of noise protection areas established in the vicinity of airports* MO 18/1997 (X.11.) KHVM-KTM joint decree* on detailed technical rules of the designation benefit and termination of noise protection areas to be established in the vicinity of airports*
Security	Ministry for Innovation and Technology	Gov. Decree 169/2010. (V.11.) on the rules of civil aviation security and the sphere of authority duties and rules of operation of the Aviation Security Committee.
Accident investigation	Ministry for Innovation and Technology	Act CLXXXIV/2005., Gov. Decree 70/2015. (XII. 1.) NFM, Regulation (EU) 996/2010 of the European Parliament and of the Council of 20 October 2010. Regulation (EU) 376/2014 of the European Parliament and of the Council of 3 April 2014, Commission Implementing Regulation (EU) 2015/1018 of 29 June 2015.

*Not specifically related to ATM.

Deputy State Secretary for Transport Authority –ANS and Aerodrome Supervisory Department

Under the supervision of the Deputy State Secretary for Transport Authority there are four departments:

- ANS and Aerodrome Supervisory Department
- Aviation Supervisory Department
- Licensing Department
- Risk Assessment Department

which are acting as the civil aviation authority (CAA). The ANS and Aerodrome Supervisory Department is performing the National Supervisory Authority (NSA) tasks.

Annual Report published:	N	Annual Report 2017 is published, Annual Report covering 2018 activities will be published by the end of March 2019 on the website https://www.nkh.gov.hu/web/legugyi-hivatal/nsa-felugyeleti-tevekenyseg. Due to the change in the organisational structure the address of the website will be changed.

The website of the four departments mentioned above is the following: http://www.nkh.gov.hu/web/legugyi-hivatal

Due to the change in the organisational structure the address of the website will be changed.

The organisational chart is in Annexes.

HungaroControl Pte. Ltd. Co

Services provided

Governance:	Ministry for Innovation and Technology	**Ownership:**	State 100%
Services provided	**Y/N**	**Comment**	
ATC en-route	Y		
ATC approach	Y		
ATC Aerodrome(s)	Y		
AIS	Y		
CNS	Y		
MET	Y		
ATCO training	Y		
Others	Y	Flow management, Airspace management	
Additional information:			
Provision of services in other State(s):	Y	ATC in Austria and Slovak Republic ATC en-route in the KFOR sector established over Kosovo	

Annual Report published:	Y	Annual Report 2016 is published at the link https://www.hungarocontrol.hu/download/e3d0ec1318221492c62b55c4250127d1.eves-jelentes-2016.pdf and the Annual Report 2017 is published at the link https://www.hungarocontrol.hu/download/a941cf0edc766669051abfc40e9bf67f.2017-eves-jelentes.pdf

The address of the ANSP website is the following: www.hungarocontrol.hu

The organisation chart of HungaroControl (valid from 1st of January 2017) is in Annexes.

ATC systems in use

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

FDPS

Specify the manufacturer of the ATC system currently in use:	THALES Air Systems
Upgrade[2] of the ATC system is performed or planned?	Performed: 2015, Planned: 2019
Replacement of the ATC system by the new one is planned?	No
ATC Unit	Budapest ACC, Budapest APP, Budapest TWR

Specify the manufacturer of the ATC system currently in use:	THALES Air Systems
Upgrade of the ATC system is performed or planned?	Performed: 2014, Planned: 2021
Replacement of the ATC system by the new one is planned?	No
ATC Unit	Budapest ACC KFOR Sector

SDPS

Specify the manufacturer of the ATC system currently in use:	THALES Air Systems
Upgrade[3] of the ATC system is performed or planned?	Performed: 2015, Planned: 2019
Replacement of the ATC system by the new one is planned?	No
ATC Unit	Budapest ACC, Budapest APP, Budapest TWR

RDPS

Specify the manufacturer of the ATC system currently in use:	THALES Air Systems
Upgrade of the ATC system is performed or planned?	Performed: 2014, Planned: 2021
Replacement of the ATC system by the new one is planned?	No
ATC Unit	Budapest ACC KFOR Sector

[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

Due to size of Hungary and the geographical situation the civil aviation is focused on the international operations mainly. The domestic flights are not relevant. The significant part of flights are using eight (8) airports published in the Hungarian AIP. These eight (8) airports are the following:

LHBP-Budapest Liszt Ferenc International Airport; LHDC-Debrecen; LHSM-Hévíz/Balaton; LHPR-Győr/Pér, LHBC-Békéscsaba, LHNY-Nyiregyháza, LHPP-Pécs-Pogány, LHUD-Szeged.

The main airport is Budapest Liszt Ferenc International Airport owned by the state but all operational rights were privatized in 2005. The current owner of these rights is a consortium led by Avialliance GmbH.

Airport(s) covered by the LSSIP

Referring to the List of Airports in the European ATM Master Plan Level 3 Implementation Plan Edition 2018 – Annex 2, it is up to the individual State to decide which additional airports will be reported through LSSIP for those Objectives.

So the following airports are covered in this LSSIP: Budapest Liszt Ferenc International Airport (LHBP/BUD).

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

Military Authorities

From 1st of January 2017 the Military Aviation Authority (MAA) is integrated into the Ministry of Defence (MoD). The detailed changes described and included in the LSSIP 2017 document.

Separate military ATC is provided for military TMAs and CTRs. Service in TRAs is provided by Air Defence Controllers (mainly) and military ATCUs (rarely). Regional ANS for military airspace users is provided by the national ANSP.

Airspace Management is a joint responsibility of the Minister for Innovation and Technology and the Minister of Defence. The Government has established the National Airspace Co-ordination Board (NACB) by a Government Decision 1298/2011. (IX.1.) in order to prepare the implementation of the strategic airspace management tasks in line with Article 4 of Commission Regulation (EC) No 2150/2005 of 23 December 2005, laying down common rules for the flexible use of airspace. The AMC (Airspace Management Cell) is a part of HungaroControl as a joint civil-military cell and it is staffed with military and civilian experts. The two Ministers concerned regulate the tasks, duties and responsibilities of the AMC. The AMC is an operationally independent body; its activities are supervised by the NACB.

At the Ministry of Defence the Chief of Defence Staff is inter alia superior of the Defence Forces Joint Forces Command, which is responsible for the Air Defence of Hungary. In addition this Command is responsible for the overall policy and planning of the Airforce administration and logistics. Foreign Air Forces operations in national airspace during NATO/PfP (Partnership for Peace) exercises are performed according to national regulation and/or individual exercises plans.

The organisation chart is in the Annexes.

Regulatory role

Regulatory framework and rule-making

OAT		GAT	
OAT and provision of service for OAT governed by national legal provisions?	Y	Provision of service for GAT by the Military governed by national legal provisions?	Y
Level of such legal provision: Air Navigation Act. (1995. XCVII. tv.); and Government Decree on enacting clauses of the Air Navigation Act (141/1995. (XI.30.) Government decree).		Level of such legal provision: Air Navigation Act (1995. XCVII.) and Government Decree on enacting clauses of the Air Navigation Act (141/1995. (XI. 30.) Government decree).	
Authority signing such legal provision: The President of the Republic and the President of the National Assembly (in case of State Law); Prime Minister on behalf of the Government (in case of Government Decree).		Authority signing such legal provision: The President of the Republic and the President of the National Assembly (in case of State Law); the Prime Minister on behalf of the Government (in case of Government Decree)	
These provisions cover:		These provisions cover:	
Rules of the Air for OAT	X		
Organisation of military ATS for OAT	X	Organisation of military ATS for GAT	
OAT/GAT Co-ordination	X	OAT/GAT Co-ordination	
ATCO Training	X	ATCO Training	
ATCO Licensing	X	ATCO Licensing	
ANSP Certification		ANSP Certification	
ANSP Supervision	X	ANSP Supervision	
Aircrew Training	X	ESARR applicability	
Aircrew Licensing	X		
Additional Information: N/A		Additional Information: N/A	
Means used to inform airspace users (other than military) about these provisions:		Means used to inform airspace users (other than military) about these provisions:	
National AIP	X	National AIP	
National Military AIP	X	National Military AIP	
EUROCONTROL eAIP		EUROCONTROL eAIP	
Other:		Other:	

Oversight

OAT	GAT
National oversight body for OAT: Civil Aviation Authority	**National oversight body for GAT**: Civil Aviation Authority
Additional information: None	Additional information: Military ATS provides services primarily not for GAT inside MCTR/MTMA/TRA.

Service Provision role

OAT			GAT	
Services Provided:			Services Provided:	
En-Route	X		En-Route	X
Approach/TMA	X		Approach/TMA	X
Airfield/TWR/GND	X		Airfield/TWR/GND	X
AIS	X		AIS	X
MET	X		MET	X
SAR	X		SAR	
TSA/TRA monitoring	X	AMC is operating within HungaroControl	FIS	X
Other:			Other:	
Additional Information:			Additional Information: ASP is responsible for provision of Alerting Service within Budapest FIR.	

Military ANSP providing GAT services SES certified?	N	If YES, since:	-	Duration of the Certificate:	
Certificate issued by:	-		If NO, is this fact reported to the EC in accordance with SES regulations?		N
Additional Information: According to Article 7(5) of 550/2004. (EC) Regulation, certification is not necessarily required where providers offer 'primarily' their services to aircraft movement other than GAT.					

User role

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

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

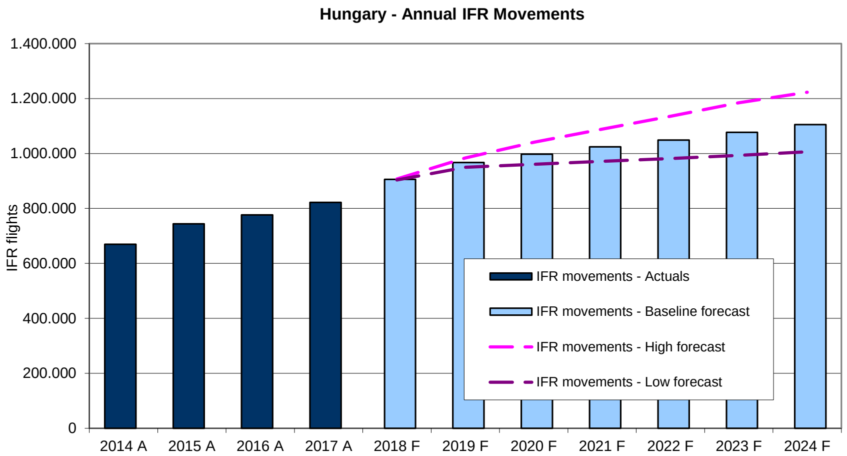
If Military fly GAT-IFR inside controlled airspace, specify existing special arrangements:							
No special arrangements				Exemption from Route Charges			X
Exemption from flow and capacity (ATFCM) measures			X	Provision of ATC in UHF			
CNS exemptions:	RVSM	X	8.33 X	Mode S	X	ACAS	X
Others:	None						

Flexible Use of Airspace (FUA)

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

2. Traffic and Capacity

2.1. Evolution of traffic in Hungary



EUROCONTROL Seven-Year Forecast (September 2018)											
IFR flights yearly growth		2015 A	2016 A	2017 A	2018 F	2019 F	2020 F	2021 F	2022 F	2023 F	2024 F
Hungary	H				10.4%	8.4%	5.8%	4.5%	4.3%	4.3%	3.2%
	B	11.1%	4.3%	5.9%	10.2%	6.8%	3.2%	2.7%	2.4%	2.6%	2.7%
	L				9.9%	5.1%	1.1%	1.2%	1.0%	1.2%	1.3%
ECAC	B	1.6%	2.8%	4.0%	3.7%	3.0%	2.6%	2.1%	1.9%	2.0%	2.1%

2018

Traffic in Hungary **increased by 11.1%** during summer 2018 (May to October), when compared to the same period during 2017.

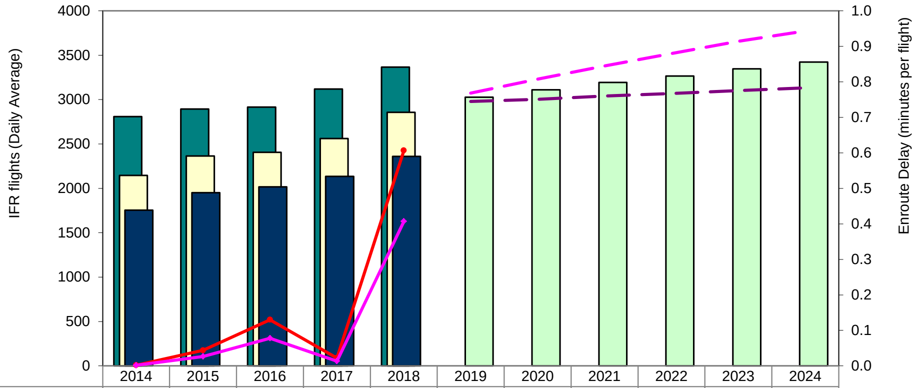
2019-2023

The EUROCONTROL Seven-Year Forecast predicts an average annual traffic growth between 1.8% and 5.1% throughout the planning cycle, with a baseline growth of 3.4%.

2.2. ACC Budapest

Traffic and en-route ATFM delays 2014-2024

LHCCACC - Traffic and en-route ATFM delays



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Peak Day Traffic	2808	2893	2915	3119	3365						
Summer Traffic	2147	2364	2405	2561	2857						
Yearly Traffic	1754	1951	2016	2135	2360						
Summer Traffic Forecast						3026	3110	3193	3265	3347	3423
High Traffic Forecast - Summer						3073	3231	3379	3519	3656	3772
Low Traffic Forecast - Summer						2980	3002	3041	3068	3101	3131
Summer enroute delay (all causes)	0.00	0.04	0.13	0.02	0.61						
Yearly enroute delay (all causes)	0.00	0.03	0.08	0.01	0.41						

Performance summer 2018

Traffic Evolution	2018 Capacity Baseline	En-route Delay (min/flight) - Summer		Capacity gap
		Ref value	Actual	
+11.6 %	214 (+1%)	0.07	0.61	Yes

The average en-route delay per flight increased from 0.02 minutes per flight in Summer 2017 to 0.60 minutes per flight during the same period in 2018.
28% of the delays were for the reason ATC Capacity, 56% for Weather and 15% for ATC Staffing.

Capacity Plan +3%	**Achieved**	**Comments**
Optimization of airspace structure	Yes	Ongoing in East and West during 2019
Recruitment and training of controllers and possible extra work	Yes	Ongoing planned increase in controllers by 2022. However unexpected retirement and lower success rate of trainees than planned has resulted in a serious staff shortage.
Maximum configuration: 8 sectors (	Yes	8 sectors were opened (+1 KFOR 1 controller) for short periods the average was 6 to 7 sectors

Summer 2018 performance assessment

The ACC capacity baseline was measured with ACCESS at 214, 1% higher than in 2017. During the measured period, the average peak 1 hour demand was 208 and the average peak 3 hour demand was 191.

Planning Period 2019-2024

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

Following the inputs provided by the European Commission at the ad-hoc NMB on 25 October 2018, en-route delay reference values and capacity requirement profiles have been calculated for RP3 (2020-2024) based on the proposal made by the PRB to the European Commission.

NETWORK	En-route ATFM delay breakdown RP2 Reference Values	En-route ATFM delay breakdown PRB proposal RP3 Reference Values				
	2019	2020	2021	2022	2023	2024
Annual	0.5	0.8	0.7	0.6	0.5	0.5

Final en-route delay reference values and capacity requirement profiles will be provided after the final decision on RP3 targets.

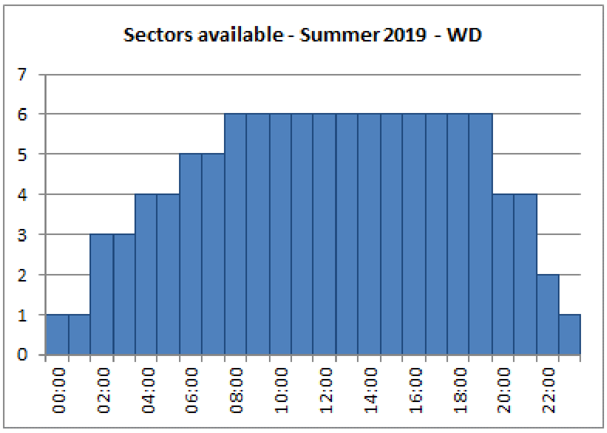
			RP2 Capacity Profiles		RP3 Indicative Capacity Profiles									
ACC	2018 baseline		Profiles (hourly movements and % increase over previous year)											
			2019		2020		2021		2022		2023		2024	
LHCC	214	H	215	0%	217	1%	219	1%	228	4%	237	4%	245	3%
		Ref.	214	0%	214	0%	214	0%	214	0%	218	2%	220	1%
		L	214	0%	214	0%	214	0%	214	0%	214	0%	215	0%
		Open	214	0%	214	0%	214	0%	214	0%	215	0%	218	1%
		C/R	228	7%	245	7%	246	0.4%	247	0.4%	250	1%	256	2%

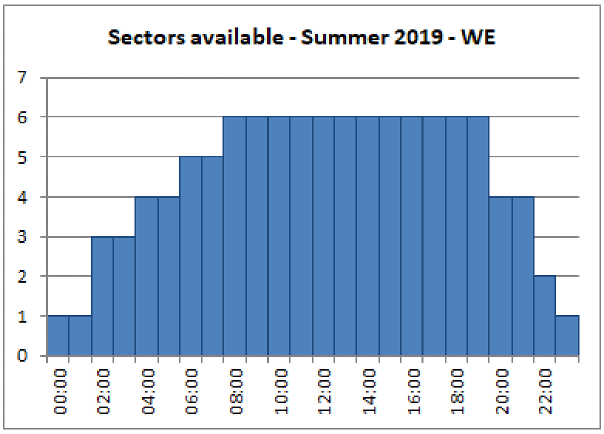
Summer Capacity Plan						
	2019	2020	2021	2022	2023	2024
Free Route Airspace						
Airspace Management Advanced FUA						
Airport & TMA Network Integration						
Cooperative Traffic Management						
Airspace	Optimization of airspace structure	4 geographical ACC sectors				
Procedures						
Staffing	Recruitment and training of controllers and possible extra work					
Technical						
Capacity						
Significant Events					World Athletic Championship	
Max sectors	6 (+1 KFOR)	6 (+1 KFOR)	6 (+1 KFOR)	7 (+1 KFOR)	8 (+1 KFOR)	8 (+1 KFOR)
Planned Annual Capacity Increase	-5%	3%	3%	3%	3%	3%
Reference profile Annual % Increase	0%	0%	0%	0%	2%	1%
Current Routes Profile % Increase	7%	7%	0.4%	0.4%	1%	2%
Difference Capacity Plan v. Reference Profile	-5,1%	-2,3%	0,5%	3,3%	4,6%	6,8%
Difference Capacity Plan v. Current routes Profile	-11,0%	-14,7%	-12,6%	-10,5%	-8,8%	-8,2%
Annual Reference Value (min)	0.05	0.04	0.08	0.10	0.12	0.12
Summer reference value (min)	0.07	0.06	0.12	0.15	0.18	0.19

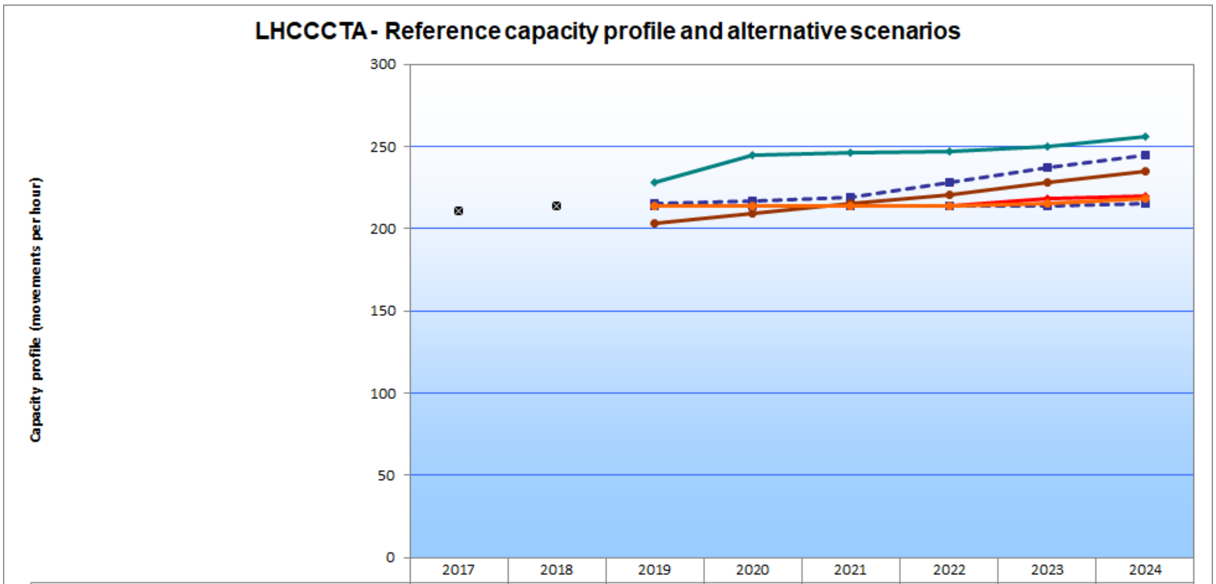
2020-2024: Indicative RP3 Reference Values

The graphs above show an outline of available sector configurations for a typical weekday and a weekend day for summer 2019.

Note: *It always must be considered that the Budapest ACC has to ensure staff for the KFOR sector as well as the traffic demand. It is important when determining backbone vs. sectors. Max. Configuration will be 6+1. From 2018 KFOR sector should be manned by two controllers during the day shift.*







	2017	2018	2019	2020	2021	2022	2023	2024
2019 Reference Capacity Profile 2020-2024 Indicative Reference Capacity Profile			214	214	214	214	218	220
Capacity Profile - Current Routes			228	245	246	247	250	256
Capacity Profile - High			215	217	219	228	237	245
Capacity Profile - Low			214	214	214	214	214	215
Capacity Baseline	211	214						
2019 - 2024 Plan			203	209	215	221	228	235
Capacity Profile - Shortest Routes (Open)			214	214	214	214	215	218

2019-2024 Planning Period Outlook
Capacity gap is expected at Budapest ACC in the short term due to the high current route traffic flow and the limited number of controller staff.

3. Master Plan Level 3 Implementation Report conclusions

Conclusions issued from the European ATM Master Plan Level 3 Implementation Report 2018 applicable to Hungary for all items that require corrective actions and improvements.

Conclusion	Applicable to
COLLABORATIVE FLIGHT PLANNING IMPLEMENTATION DELAYS SHOULD BE ADDRESSED AND SUPPORT FOR IMPLEMENTATION FROM NM GIVEN TO THE LOCAL STAKEHOLDERS. (page 10 of the Report)	All States with delays in implementation of FCM03
State's action planned for this conclusion: YES **Description of the planned action:** ASP: The necessary software upgrade will be installed by 31/03/2019 and the AFP message sending/reception function will be introduced by 31/12/2019.	

Conclusion	Applicable to
IMPLEMENTATION OF FRA IS VERY MUCH ENCOURAGED BELOW FL310 AND IN CROSS-BORDER AIRSPACE. (page 19 of the Report)	ECAC States
State's action planned for this conclusion: YES **Description of the planned action:** H24 Free route operation has been implemented within Budapest CTA since February 5 2015, from GND-FL660. South-East European Night FRA has been in operation from March 2017, which is now includes Bratislava CTA, Budapest CTA, Bucharest CTA and Sofia CTA. Transformation of SEEN FRA into H24 SEE FRA is planned for November 7 2019.	

Conclusion	Applicable to
DELAYS IN IMPLEMENTATION OF A-SMGCS SURVEILLANCE CAN POTENTIALLY IMPACT THE TIMELY IMPLEMENTATION OF OTHER SUBSEQUENT A-SMGCS FUNCTIONALITIES. (page 26 of the Report, same as in 2017 LSSIP)	All Airports with delays in implementation of AOP04.1 and AOP04.2 and in particular the PCP airports
State's action planned for this conclusion: YES **Description of the planned action:** Tests for RMCA are in progress, functionalities need to be fine tuned and are not yet in operation. Planned date of operation is 31/12/2019.	

4. Implementation Projects

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

4.1. National projects

Name of project:	Organisation(s):	Schedule:	Status:	Links:
ADQ implementation	Budapest Airport Pte. Ltd. (HU), HungaroControl (HU), Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department (HU)	From 2011 to 12/2019	The project is expected to be closed by the end of 2019. HungaroControl Data Quality Assurance Plan and data origination, provision and publication processes, AIS ISQMS, Data Quality Assurance Summary and parts of AIS conformity documents are developed. ADQ compliant formal arrangements with airports are in place. ADQ compliant AIM system (workflow, traceability, archiving of amendment proposals, validation, etc.) has been implemented. All required means of compliance documents have been provided to the CAA. Obligations of Eurocontrol Data Assurance Level Specification to conduct awareness campaign is fulfilled in HungaroControl. Hungary will declare the use all of Eurocontrol Specification. The Hungarian ADQ implementing regulation will prescribe the evidence requirements for all regulated parties. The ADQ legislative process is in the final stage. The concerning implementation ministerial decree will come into force at the latest in May 2019. The Budapest Airport Zrt. Data quality requirements have been implemented and are documented for verification and audited by the national Authority. The Airport operator is connected to AIM system operated by HungaroControl and approved by the NSA. Meeting the requirements will be done based on the national guideline.	L3: INF07, ITY-ADQ

Name of project:	Organisation(s):	Schedule:	Status:	Links:
ATM System (MATIAS) upgrade for cross-border free route operation (2015_034_AF3)	HungaroControl (HU)	04/01/2016 - 31/03/2019	The current ATM system (MATIAS) software version fully supports the FRA airspace in Budapest FIR. The new software version of the ATM system (MATIAS) is aiming to implement the prerequisites for cross-border free route operation at a local level contributing to the future FAB CE wide FRA implementation. The implementation project is ongoing. The Site Acceptance Test has been finished. The planned date of operational implementation is 31. March 2019.	L3: AOM21.2 DP2016: 2015_034_AF3 RP2 PP: MATIAS Build 11.1
CDM	Budapest Airport Pte. Ltd. (HU), HungaroControl (HU)	From: 10/2013 To: 12/2019	The MATIAS system has been upgraded with the new CDM functionality in cooperation with Budapest Airport by 03/2016. The implementation plan based on CDM Manual guidelines is finalized and the data sharing platform is installed. Variable taxi-time has been defined and implemented. The test phase of data sharing and TSAT calculation started in March 2018. The system test and validation finished in Q4 of 2018 in cooperation with Budapest Airport Pte. Ltd. Predeparture sequencing procedure will be implemented and published in AIP by 06/2019. Procedures for CDM in adverse conditions, including the de-icing have been defined and implemented and planned to be validated by 31/12/2019. The MoU and LoAs are planned to be signed in 2019.	L3: AOP05
Implement Voice over IP (VoIP) network segment for VoIP in ATM	HungaroControl (HU)	From: 10/2013 15/12/2019	IP capable radios were implemented during 2017 and the A/G network segment was implemented by the end of 2017. Live A/G tests are finished successfully by the end of 2017. All radios have been upgraded to handle ED-137B by 09/2018. The upgraded system will be put into operation till 12/2019.	L3: COM11 RP2 PP: Implement Voice over IP (VoIP) network segment for VoIP in ATM
MANS 2010+ Program (Military)	Mil. Authority (HU)	From 2008 ongoing	Procurement process for the latest update of ASAP PHX software (instrument flight procedure design) is under preparation.	L3: ITY-ADQ

Name of project:	Organisation(s):	Schedule:	Status:	Links:
MATIAS Build 11	HungaroControl (HU)	To: 31/03/2019	The new software version of the ATM system (MATIAS) is aiming to implement the prerequisites for cross-border free route operation at a local level contributing to the future FAB CE wide FRA implementation and AMAN OLDI functionality supporting Vienna Airport AMAN operation. The implementation project is ongoing. The Site Acceptance Test has been finished. The planned date of operational implementation of the AMAN message processing capability in the MATIAS system is 31. March 2019.	L3: AOM21.2, ATC15.1 RP2 PP: MATIAS Build 11.1
PBN Implementation in Hungary (PBNV)	HungaroControl (HU)	To: 29/02/2019	The project is in implementation phase with some of the PBN procedures being ground validated. PBN procedures for 3 airports have been flight validated already. The GNSS monitoring station was deployed in the course of 2018, the first data flows are being fed to the central analysis system, and the first year of operations has started.	-
Remote Tower	HungaroControl (HU)	From: 01/02/2013 To: 31/03/2020	In July 2017 HungaroControl's remote tower centre acquired NSA approval to be operational. The facility currently serves multiple purposes, primarily it is to be used as a contingency site. Further developments are under way to transition to a full time remote operation.	-
Replacement of the AFTN / AMHS communication centre	HungaroControl (HU)	To: 31/05/2019	In line with the Technical Specifications the contract was concluded in May 2017. The FAT took place in May 2018, with the SAT scheduled for December 2018. The latter is being postponed until spring 2019.	L3: COM10 RP2 PP: Replacement of the AFTN / AMHS communication centre
Replacement of the meteorological system at Budapest Airport	Budapest Airport Pte. Ltd. (HU), HungaroControl (HU)	From: 10/10/2014 To: 31/03/2019	Procurement process is finished. Site Acceptance Test and the installation of the system are completed, the test operation is ongoing. Operational use is planned from Q1 2019.	RP2 PP: Replacement of the meteorological system at Budapest Airport

4.2. FAB projects

Name of project:	Organisation(s):	Schedule:	Status:	Links:
DEVOPS: FABCE Development of Operational Performance and ATM Strategies (previously Project 1) (DEVOPS)	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Project 1: Start 3.1.2011, End: Continuous	FAB CE FRA Study was completed in 2017 Other activities described below are ongoing	L3: AOM21.2 DP: 102AF3 Free route airspace from the Black Forest to the Black Sea RP2 PP: FAB CE FRA Project (described under NSP actions 'FAB CE Airspace and route structure planning' and 'Free Route Airspace')
FAB CE-wide Study of Dynamic Airspace Management (DAM) and STAM (FAB CE DAM/STAM Study)	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	DAM/STAM Study: Start: 7.2.2017, End: 31.12.2018	Completed in 2018	L3: AOM19.1, AOM19.2, AOM19.3, FCM04.1, FCM04.2, FCM05, FCM06 DP: 2016_075_AF3_A FAB CE wide Study of DAM and STAM (PCP under CEF2016 Call) RP2 PP: Advanced Airspace Management (described under NSP actions)
Navigation infrastructure optimization project	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Start: April 2018, End: April 2019	On-going	-

Name of project:	Organisation(s):	Schedule:	Status:	Links:
Surveillance Infrastructure Optimisation (FAB CE Project 18)	ASP ANS CR (CZ), Austrocontrol (AT), BHANSA (BA), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Start: 6.7.2016, End: End of 2018	Completed in 2018	RP2 PP: Optimisation of CNS resources
X-Bone HW Procurement (FAB CE Project 17)	ASP ANS CR (CZ), Austrocontrol (AT), CCL Service Provider (HR), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK), Slovenia Control (SI)	Start: 19.2.2016, End: 30.4.2018	Completed in 2018	RP2 PP: Optimisation of CNS resources

4.3. Regional projects

Name of project:	Organisation(s):	Schedule:	Status:	Links:
AMAN LOWW initial	ASP ANS CR (CZ), Austrocontrol (AT), HungaroControl (HU), Letové prevádzkové služby Slovenskej republiky, štátny podnik (SK)	Start: 19.2.2016, End: 31.12.2020	Ongoing	L3: ATC07.1, ATC15.1 DP: 2015_234_AF1 AMAN LOWW initial RP2 PP: Various projects covering individual ANSPs' requirements (e.g. covered under DPS ATM Services for Austria)

5. Cooperation activities

5.1. FAB Co-ordination

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

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

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

There have been a number of important achievements in 2018 focusing on several key areas. The following bullets summarise the most important activities delivering the benefits to airspace users:

- Airspace planning and network development activities focusing on continuous improvements to enable optimum use of airspace, taking into account air traffic flows are the top priority for FAB CE. The FAB CE ANSPs have transformed themselves into a ‘FAB CE Airspace Alliance’ and are currently defining options for further airspace defragmentation to unlock additional capacity and flight efficiency benefits for airspace users. After the completion of the FAB CE FRA Study, the DEVOPS project (FAB CE Development of Operational Performance and ATM Strategies, previously known as FAB CE Project 1 incl. FAB CE FRA Study) was considerably revised and it now includes annual updates of FAB CE Network Operations Plan (FNOP), FAB CE Airspace Plan and ATM Manual. Additional tasks were launched at the end of 2017 focusing on coordination and monitoring of the regional FRA initiatives in which FAB CE ANSPs participate.

  Two additional new activities were assigned to the DEVOPS project in 2018:

  - ‘FAB CE Capacity and flow improvements’ activity contains a set of tasks performed with the aim of improving FAB CE network performance;
  - ‘FAB CE cross-border airspace improvements’ contains a set of tasks aimed at improving FAB CE airspace cross-border functionality and seamless operations in FAB CE airspace. The associated tasks are related to static cross-border improvements.

Both new activities are expected to be launched in Q1 2019 in alignment and coordination with the NM. The project's scope is now, however, under evaluation taking into account the available draft results of the Airspace Architecture Study to make sure that the project is aligned with the upcoming NM/SJU activities.

- The FAB CE states, together with their neighbouring partners, are at the frontline of the Free Route Airspace (FRA) implementation in the region. In just less than a year after signing the memorandum of cooperation aimed towards merging the two Free Route Airspaces SAXFRA (Slovenian Austrian Cross-border Free Route Airspace) and SEAFRA (South-East Axis Free Route Airspace - project of three ANSPs from Bosnia and Herzegovina, Croatia, Serbia and Montenegro), the South East Common Sky Initiative Free Route Airspace (SECSI FRA) has successfully been implemented, with the support of the Network Manager. In addition, LPS SR, Slovakia's air navigation service provider (ANSP), has joined the SEEN FRA (South East Europe Night Free Route Airspace) initiative of three ANSPs - BULATSA, HungaroControl and ROMATSA. SEEN FRA is a volume of European airspace where aircraft operators can file flight plans without having to follow prescribed air traffic service (ATS) routes (or "airways") during night times, between midnight and 0600.

  Coordination of the FAB aspects and monitoring of all regional FRA initiatives in which FAB CE ANSPs participate is done at the FAB CE level through the DEVOPS project. For FAB CE, the success of these initiatives is also an important step towards establishing Free Route airspace across FAB CE and also to Non-EU airspace.

- FAB CE has completed the 'FAB CE-wide implementation of DAM and STAM' study in 2018 aimed at the following goals:
  - Enable equitable treatment of all airspace users in the allocation of airspace and required trajectories on short notice and increased flexibility in dealing with short-term adjustments of airspace configurations (achieved through data-sharing and collaboration mechanisms);
  - Provide proactive route/trajectory activation/airspace reservation or restriction allocation through a collaborative (cross-border) decision-making process to accommodate short-term changes;
  - Provide supporting processes and tools (requirements) that allow for the FAB CE FRA to achieve optimal operational efficiency;
  - Overall increase of airspace capacity through optimized utilization of airspace configurations and scenarios, as STAM will provide more opportunities to balance demand and available capacity;
  - More robust and reliable planning for the airspace users through a common view amongst all stakeholders on the availability of airspace and a larger selection of airspace configurations tailored towards different scenarios;
  - Enable airspace users to make informed decisions and to increase their benefits by offering a larger choice of possible routeing and (until full FRA implementation is completed) airspace options.
- FAB CE ANSPs have completed Phase I of an activity to develop a joint contingency concept in cooperation with the Network Manager. Phase I resulted in commonly agreed concept, procedures and technical enablers for the management of short- and medium-term (less than 2 hours) contingency event. FAB CE is now initiating Phase II which will address management of long-term contingency events (beyond 2 hours duration) and will provide for a common coordination platform for coordinating and monitoring the implementation activities of Phase I.
- FAB CE ANSPs completed a comprehensive review of its Concept of Seamless Operations in 2018. This document summarizes the ATM functionalities (Pilot Common Project - PCP and New Essential Operational Capabilities – NEOC) which, when implemented on FAB CE-wide level in a harmonised manner, establish an operational environment enabling seamless operations. The CSO concept described in this document assesses the whole ATM service chain from pre-departure to landing with reference to the on-going developments within SESAR, EUROCONTROL and EC Regulations while taking into consideration other on-going activities within FAB CE. CSO therefore also outlines the FAB CE Operational Concept in OPS and TEC domains for the coming years.

- A pilot project for common procurement of FAB CE CNS covering an upgrade of the cross-border telecommunications network (X-bone) hardware has been successfully completed in 2018. The procurement was managed by FAB CE ANSPs' joint venture FABCE Aviation Services, Ltd., which is used as a FAB CE outsourcing platform for ATM/CNS infrastructure. Six air navigation service providers (ANSPs) purchased CISCO routers based on a common specification and tender to benefit from lower procurement costs and economies of scale. Following the successful conclusion of this project, the FAB CE CEO Committee has agreed to apply these same procedures for future smart procurement initiatives.
- FAB CE ANSPs have also made a significant progress in terms of developing processes for planning and operations of the surveillance infrastructure. The 'Surveillance infrastructure optimisation' project has been successfully completed in 2018. The processes for surveillance infrastructure planning, surveillance maintenance planning, maintenance of SUR database and sharing the specifications were developed and are now in the process of implementation. The project also proposed a number of overall SUR service quality improvements and developed a feasibility study for the regional tracker. Due to the negative CBA, the regional tracker project will be not further pursued.
- The NAVAID optimisation project which will improve interoperability and data-sharing through the optimisation of navigational aid (NAVAID) infrastructure, reducing duplication and unnecessary complexity has been started in 2018. This project will meet the accuracy, integrity and continuity requirements for proposed operations in FAB CE airspace by aligning NAVAID operating and purchasing policies among the seven FABEC ANSPs, reducing purchasing, implementation, operational and maintenance costs. The project group will first develop a process for coordinated NAVAID infrastructure and preventive maintenance planning and information-sharing where operational dependencies are evident. The second part of the project is focusing on an analysis of NAVAID infrastructure and coverage - including those of neighbouring countries. The team will identify potential areas for improvement, including operational interdependencies and requirements. The third part is focusing on solving operational issues – namely, assessing vulnerabilities within the global navigation satellite system (GNSS) network. This will require addressing signal monitoring and interference issues while assessing how free route airspace will influence the requirements for ground-based NAVAIDs in this new era of area navigation operations.
- FAB CE progressed with the development of the ATSEP Competence Scheme in order to close the gaps with respect to requirements of the Commission Regulation (EU) 373/2017 in the coordinated way.

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

5.2. Regional cooperation

Regional cooperation initiatives

Operation of the KFOR sector

Based on the 'Implementing Agreement' between the Government of Hungary and the International Security Force in Kosovo (KFOR) for provision of Air Navigation Services and other relevant activities in the designated airspace over Kosovo HungaroControl has started service provision on 4th of April 2014.

KFOR sector has inter-Centre Agreements on the co-ordination procedures (LoA) with:

- Belgrade
- Skopje
- Tirana
- Pristina Airport

Budapest ACC has inter-Centre Agreements on the co-ordination procedures (LoA) with:

- Bucharest
- Belgrade
- Zagreb
- Ljubljana
- Vienna
- Bratislava
- Lviv

- SAR agreement is established with Romania (between military) and Hungary is pursued to conclude SAR agreements with the other neighbouring countries.
- The Hungarian Military Authorities have air policing agreement with Romania and negotiations are in progress with Slovenia and the Slovak Republic. The Hungarian Military Authorities have Air Surveillance Data Exchange agreements with Austria, Ukraine and Croatia.
- ACT/LAM OLDI messages are in use with the Bucharest, Belgrade, Zagreb, Vienna, Bratislava and Lviv ACC's. Flight plan data and real time radar data are automatically transmitted to Air Defence (CRC Veszprém).
- REV exchange with Lviv and Bucharest has been in operation since 2012, with Bratislava since 2015 and with Vienna, Zagreb and Belgrade since 2017.
- Night Cross-Border Free Route operation is available between Budapest FIR, Bucharest FIR and Sofia FIR from 30th of March 2017.

NATO

Hungary became a member of NATO in March 1999. As a consequence, NATO plans and NATO activities are also affecting the demand for military use of airspace.

South East Europe Common Sky Initiative (SECSI FRA)

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

The SECSI FRA went operational on the 1st of February2018 offering airspace users significant benefits along the South East Axis, by delivering the shortest route options from Central Europe to South Eastern Europe. The benefits gained through the SECSI FRA are substantial. Based on the shortest route assignment potential savings per day are up to 1.940 NM in flight distance, 285 minutes in flight time, a reduction in fuel consumption of 8,000 kg and a reduction in CO_2 emissions of 25,500 kg.

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

South East Europe Night Free Route Airspace (SEEN FRA)

On the 30th March 2017, the DANUBE FAB (Romania and Bulgaria) and Hungary introduced SEEN FRA by bridging the airspace between the two Functional Airspace Blocks of the DANUBE FAB and FAB CE during the time period 2300-0500 (2200 - 0400) UTC. At the end of 2018, the initiative was expanded by the airspace of Slovakia. From the 6th December 2018, aircraft operators are thus able to plan their flights freely across the airspace of four States covering parts of two FABs without having to take into account the limitations imposed by geographical borders. The new flight planning rules significantly optimize flight trajectories to provide the shortest possible connections and the most effective routings when changes to the flight plan – to avoid adverse weather, for example – are required. According to simulations of the airspace change the synergistic effect of all improvements could reduce trajectories by a daily average of 3,200 NM, which equates to 15 tonnes of fuel and 49 tonnes of CO2 emissions.

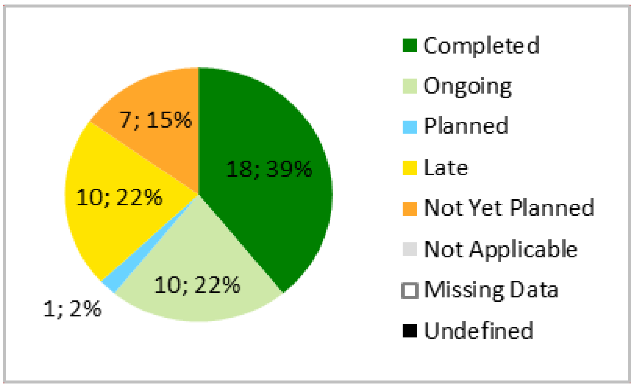
Further improvements to Central and South-Eastern European airspace configurations will take place in 2019. From April 2019, 24-hour FRA will be implemented within Slovakian airspace and during summer 2019 LPS SR will consider extending SEEN FRA availability for longer periods of the day. From 7 November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

6. Implementation Objectives Progress

6.1. State View

Overall Objective Implementation

Progress distribution for applicable Implementation Objectives



Completed: Active objectives AOM13.1, AOM19.1, AOM19.3, AOP04.1 (LHBP), ATC02.8, ATC02.9, ENV01 (LHBP), ENV02 (LHBP), FCM04.1, ITY-ACID, ITY-AGDL, ITY-FMTP, NAV03.1 and NAV10 as well as all the applicable additional ICAO objectives ATC02.2, ATC16, FCM01, INF04 and ITY-COTR.

Ongoing: Active objectives AOM19.2, AOM19.4, ATC12.1, ATC15.1, COM11, COM12, FCM08, ITY-SPI as well as local objectives AOP14 (LHBP) and ENV03 (LHBP).

Planned: Active objective FCM06.

Late: Active objectives AOM21.2, AOP04.2 (LHBP), AOP05 (LHBP), ATC17, COM10, FCM03, INF07, ITY-ADQ, ITY-AGVCS2 and SAF11.

Not yet planned: Active objectives ATC15.2, FCM04.2, FCM05, INF08.1 and NAV03.2 as well as local objectives ATC18 and NAV12.

Not Applicable: Active objectives AOP10 (LHBP), AOP11 (LHBP), AOP12 (LHBP), AOP13 (LHBP) and ATC07.1 (LHBP) as well as the additional ICAO objective AOM21.1.

Problems in completing objectives due for 2015-2018:

Active objective AOP04.2 (LHBP) (due by 31/12/2017) is Late because of the delay in fine tuning activity progress of the RMCA function due to heavy lack of availability of human resources allocated to the activity. Planned to be completed by 31/12/2019.

Active objective AOP05 (LHBP) (due by 31/12/2016) is Late mainly due to late planned implementation of Pre-departure sequencing together with DMAN and operational procedures.

Planned to be completed by 31/12/2023.

Active objective ATC17 (due by 31/12/2018) is Late due to the fact that currently there is no plan for the operational use for inter FIR communication of several messages since there is no partner ANSP ready for the common implementation.

Planned to be completed by 31/12/2022.

Active objective COM10 (due by 31/12/2018) is Late due to late delivery of the system by the contracting party and that MIL expects to migrate the system by the end of 2020.

Planned to be completed by 31/12/2020.

Active objective FCM03 (due by 31/12/2017) is Late in spite of the fact that the MATIAS system software satisfies the requirements since December 2005, but a number of functionalities are not yet in operation. The automation of sending all of the corresponding messages is planned to be operational by December 2019. Planned to be completed by 31/12/2019.

Active objective INF07 (due by 31/05/2018) is Late because of the fact that the national TOD policy and regulatory framework have not been approved yet and therefore the stakeholders can not start their work on developing the required plan and the implementation.

Planned to be completed by 31/12/2020.

Active objective ITY-ADQ (due by 30/06/2017) is Late because of the delay of national ADQ implementing regulation prescribing the evidence requirements for all regulated parties and as a consequence of the delay of detailed implementation plans and requirements for the concerned stakeholders as well as because of the delay of the MIL stakeholder.

Planned to be completed by 31/12/2020.

Active objective ITY-AGVCS2 (due by 31/12/2018) is Late because all the 25 kHz channel spacing ground frequencies used for military operations will have been converted to 8,33 kHz only by 31/12/2025 by the MIL stakeholder, since these frequencies are used by state aircraft with equipage mandate in 2025 according to Paragraph 11 of Article 9 in Regulation (EU) No. 1079/2012.

Planned to be completed by 31/12/2025.

Active objective SAF11 (due by 31/01/2018) is Late because of the delay in implementation of part of the European Action Plan related to the aviation English of vehicle drivers by the Budapest Airport and the postponement of the implementation date due to delay of planned necessary infrastructural development by MIL stakeholder.

Planned to be completed by 31/12/2020.

Plans for completing objectives due for 2019 and 2020:

From the active objectives due for 2019 and 2020 the following are completed: ATC02.9, ITY-ACID, ITY-AGDL.

Active objective ATC15.1 (due by 31/12/2019) is Ongoing. HungaroControl plans to comply with the objective by 12/2019. The MATIAS ATC system will be upgraded to be compliant to AMAN use in en-route having functionality implemented to support AMAN operations in Vienna Airport.

Active objective COM11 (due by 31/12/2020) is Ongoing. The upgraded Voice Communication Systems to support VoIP will be put into operation by 12/2019. Military has no intention to implement this objective due security reasons.

Active objective COM12 (due by 31/12/2020) is Ongoing. HungaroControl plans to migrate to NewPENS all services by 31/10/2019. Budapest Airport presently has no plan to implement this objective.

Active objective ITY-SPI (due by 07/06/2020) is Ongoing. The objective is completed by the REG and ASP stakeholder and planned to be completed by the MIL by 31/01/2019.

Objective Progress per SESAR Key Feature

Note: The detailed table of links between Implementation Objectives and SESAR Key Features is available in Annex.

Legend:

- ## % = Expected completion / % Progress
- 100% = Objective completed
- = Implementation Objective timeline (different colour per KF)
- = Completion beyond Implementation Objective timeline

Optimised ATM Network Services

		<15 15 16 17 18 19 20 21 22 23 24 ≥25
AOM13.1	Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) handling	100%
AOM19.1 (PCP)	ASM Support Tools to Support AFUA	100%
AOM19.2 (PCP)	ASM Management of Real-Time Airspace Data	80%
AOM19.3 (PCP)	Full rolling ASM/ATFCM Process and ASM Information Sharing	100%
AOM19.4 (PCP)	Management of Pre-defined Airspace Configurations	10%
FCM01	Enhanced Tactical Flow Management Services	100%
FCM03	Collaborative Flight Planning	62%
FCM04.1	STAM Phase 1	100%
FCM04.2 (PCP)	STAM Phase 2	0%
FCM05 (PCP)	Interactive Rolling NOP	0%
FCM06 (PCP)	Traffic Complexity Assessment	0%

Advanced Air Traffic Services

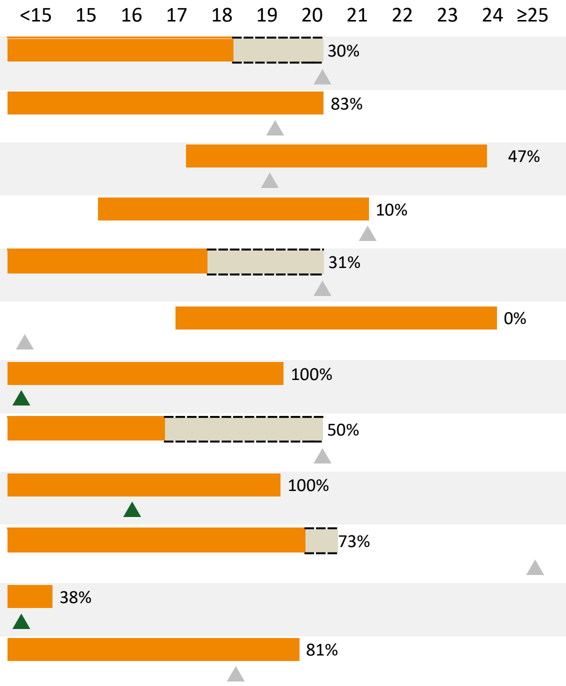
		<15 15 16 17 18 19 20 21 22 23 24 ≥25
AOM21.1 (PCP)	Direct Routing	n/a
AOM21.2 (PCP)	Free Route Airspace	80%
ATC02.2	STCA En-Route	100%
ATC02.8	Ground-Based Safety Nets	100%
ATC02.9	Enhanced STCA for TMAs	100%
ATC07.1	AMAN Tools and Procedures	
	LHBP - Budapest Liszt Ferenc International Airport (Outside Applicability Area)	n/a
ATC12.1	Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring	73%
ATC15.1	Information Exchange with En-route in Support of AMAN	28%
ATC15.2 (PCP)	Arrival Management Extended to En-route Airspace	0%
ATC16	ACAS II Compliant with TCAS II Change 7.1	100%
ATC17	Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer	68%
ATC18	Multi Sector Planning En-route - 1P2T	Local objective 0%
ENV01	Continuous Descent Operations	
	LHBP - Budapest Liszt Ferenc International Airport	100%
ENV03	Continuous Climb Operations	Local objective
	LHBP - Budapest Liszt Ferenc International Airport	50%
ITY-COTR	Ground-Ground Automated Co-ordination Processes	100%
NAV03.1	RNAV 1 in TMA Operations	70%
NAV03.2 (PCP)	RNP 1 in TMA Operations	0%
NAV10	APV procedures	100%
NAV12	Optimised Low-Level IFR Routes in TMA for Rotorcraft	Local objective 0%

High Performing Airport Operations

		<15 15 16 17 18 19 20 21 22 23 24 ≥25
AOP04.1	A-SMGCS Level 1	
	LHBP - Budapest Liszt Ferenc International Airport	100%
AOP04.2	A-SMGCS Level 2	
	LHBP - Budapest Liszt Ferenc International Airport	50%
AOP05	Airport CDM	
	LHBP - Budapest Liszt Ferenc International Airport	62%
AOP10 (PCP)	Time-Based Separation	
	LHBP - Budapest Liszt Ferenc International Airport (Outside Applicability Area)	n/a
AOP11 (PCP)	Initial Airport Operations Plan	
	LHBP - Budapest Liszt Ferenc International Airport (Outside Applicability Area)	n/a
AOP12 (PCP)	Improve Runway and Airfield Safety with ATC Clearances Monitoring	
	LHBP - Budapest Liszt Ferenc International Airport (Outside Applicability Area)	n/a
AOP13 (PCP)	Automated Assistance to Controller for Surface Movement Planning and Routing	
	LHBP - Budapest Liszt Ferenc International Airport (Outside Applicability Area)	n/a
AOP14	Remote Tower Services	Local objective
	LHBP - Budapest Liszt Ferenc International Airport	70%
ENV02	Collaborative Environmental Management	Local objective
	LHBP - Budapest Liszt Ferenc International Airport	0%
SAF11	Improve Runway Safety by Preventing Runway Excursions	75%

Enabling Aviation Infrastructure

COM10	Migrate from AFTN to AMHS
COM11	Voice over Internet Protocol (VoIP)
COM12 (PCP)	NewPENS
FCM08 (PCP)	Extended Flight Plan
INF07	Electronic Terrain and Obstacle Data (eTOD)
INF08.1 (PCP)	Information Exchanges using the SWIM Yellow TI Profile
ITY-ACID	Aircraft Identification
ITY-ADQ	Ensure Quality of Aeronautical Data and Aeronautical Information
ITY-AGDL	Initial ATC Air-Ground Data Link Services
ITY-AGVCS2	8,33 kHz Air-Ground Voice Channel Spacing below FL195
ITY-FMTP	Common Flight Message Transfer Protocol
ITY-SPI	Surveillance Performance and Interoperability



ICAO ASBU Implementation

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 2018 declared statuses and progress of the relevant Implementation objectives in accordance with the mapping approved by ICAO EUR EANPG/60 (European Air Navigation Planning Group).

Legend:

- = Completed (during 2018 or before)
- = Progress achieved in 2018
- = Missing planning date
- = Not applicable

		<16 16 17 18 19 20 21 22 23 24 ≥25
B0-APTA	Optimization of Approach Procedures including vertical guidance	100%
B0-SURF	Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)	100% / 75%
B0-FICE	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration	100%
B0-DATM	Service Improvement through Digital Aeronautical Information Management	100% / 50%
B0-ACAS	ACAS Improvements	100%
B0-SNET	Increased Effectiveness of Ground-Based Safety Nets	100%
B0-ACDM	Improved Airport Operations through	100% / 62%
B0-RSEQ	Improved Traffic flow through Runway sequencing (AMAN/DMAN)	
B0-FRTO	Improved Operations through Enhanced En-Route Trajectories	100%
B0-NOPS	Improved Flow Performance through Planning based on a Network-Wide view	100% / 81%
B0-ASUR	Initial capability for ground surveillance	100% / 81%
B0-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDO)	100%
B0-TBO	Improved Safety and Efficiency through the initial application of Data Link En-Route	100%

6.2. Detailed Objectives Implementation progress

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

Main Objectives

<table>
<tr><td>AOM13.1</td><td colspan="3">Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling
Timescales:
Initial operational capability: 01/01/2012
Full operational capability: 31/12/2018</td><td>100%</td><td>Completed</td></tr>
<tr><td colspan="6">-</td></tr>
<tr><td colspan="5">Hungary overviewed all of national legislation with respect on the EUROAT connections and its requirements. Modifying of the related regulations is not necessary.
En-Route MIL traffic flying under GAT rule is handled by civil ATC. OAT presently under military control in TRAs. ATS personnel are trained for present national regulations during initial and continuation training. Military AIP and NOTAM information is provided through the civil AIS (HungaroControl) into the EAD.</td><td>31/12/2013</td></tr>
<tr><td colspan="6">REG (By:12/2018)</td></tr>
<tr><td>Mil. Authority</td><td colspan="2">Hungary overviewed all of national legislation with respect on the EUROAT connections and its requirements. Modifying of the related regulations is not necessary.</td><td>-</td><td>100%</td><td>Completed
31/12/2013</td></tr>
<tr><td>Ministry for Innovation and Technology/Department for Civil Aviation and Inland Navigation</td><td colspan="2">Hungary overviewed all of national legislation with respect on the EUROAT connections and its requirements. Modifying of the related regulations is not necessary.</td><td>-</td><td>100%</td><td>Completed
31/12/2013</td></tr>
<tr><td colspan="6">ASP (By:12/2018)</td></tr>
<tr><td>Mil. Authority</td><td colspan="2">En-route MIL traffic flying under GAT rules is handled by civilian ATC. ATC personnel are trained.</td><td>-</td><td>100%</td><td>Completed
-</td></tr>
<tr><td>HungaroControl</td><td colspan="2">En-route MIL traffic flying under GAT rules is handled by civilian ATC. OAT presently under military control in TRAs. ATS personnel are trained for present national regulations during initial and continuation training.</td><td>-</td><td>100%</td><td>Completed
-</td></tr>
<tr><td colspan="6">MIL (By:12/2018)</td></tr>
<tr><td>Mil. Authority</td><td colspan="2">The Decree 3/2006. (II. 2.) of the Ministry of Defence on rules of the air applicable within the airspace designated for the purpose of state flights deals with this objective.</td><td>-</td><td>100%</td><td>Completed
31/12/2013</td></tr>
</table>

AOM19.1	**ASM Support Tools to Support Advanced FUA (AFUA)** ***Timescales:*** Initial operational capability: 01/01/2011 Full operational capability: 31/12/2018		**100%**	**Completed**
-				
Improved ASM/ATFCM processes and LARA system are implemented on the civil side and staff is trained accordingly. The rolling ASM/ATFCM and interoperability with ADR is ensured via LARA system. On the military side LARA deployment and training are completed.				**31/12/2016**
ASP (By:12/2018)				
Mil. Authority	The military and civilian ATM experts are working side-by-side in the HungaroControl AMC which is a joint cell in Hungary. On the military side LARA deployment and training are completed.	-	100%	Completed 31/12/2016
HungaroControl	Improved ASM/ATFCM processes are implemented. Deployment of LARA system is completed. The Hungarian AMC staff training is done. The rolling ASM/ATFCM and interoperability with ADR is ensured via LARA system. The military and civilian ATM experts are working side-by-side in the HungaroControl AMC which is a joint cell in Hungary. The AUP/UUP containing information about the airspace allocations is accessible in the HungaroControl WEB site.	FAB CE-wide Study of Dynamic Airspace Management (DAM) and STAM	100%	Completed 31/12/2015

AOM19.2	**ASM Management of Real-Time Airspace Data** ***Timescales:*** Initial operational capability: 01/01/2017 Full operational capability: 31/12/2021		**80%**	**Ongoing**
-				
HungaroControl has successfully implemented LARA ASM tool. HungaroControl is waiting for the new software release of LARA system which will support the automatic exchange of real-time airspace data between ATM and ASM systems. **MATIAS ATC system will be upgraded within the MATIAS Build 12 project in order to be able to support real time ASM data exchange with local ASM support system.**				**31/10/2021**
ASP (By:12/2021)				
HungaroControl	HungaroControl has successfully implemented LARA ASM tool. HungaroControl is waiting for the new software release of LARA system which will support the automatic exchange of real-time airspace data between ATM and ASM systems. MATIAS ATC system will be upgraded within the MATIAS Build 12 project in order to be able to support real time ASM data exchange with local ASM support system. Objective is linked with one of the FAB CE projects - see details in Chapter 5 of Level 1 document.	FAB CE-wide Study of Dynamic Airspace Management (DAM) and STAM	80%	Ongoing 31/10/2021

AOM19.3	**Full Rolling ASM/ATFCM Process and ASM Information Sharing** ***Timescales:*** Initial operational capability: 01/01/2014 Full operational capability: 31/12/2021		**100%**	**Completed**
-				
Full rolling ASM/ATFCM process was implemented together with the implementation of LARA system and used operationally since 01.01.2016.				**01/01/2016**
ASP (By:12/2021)				
HungaroControl	Full rolling ASM/ATFCM process was implemented together with the implementation of LARA system and used operationally since 01.01.2016.	FAB CE-wide Study of Dynamic Airspace Management (DAM) and STAM	100%	Completed 01/01/2016

AOM19.4	**Management of Pre-defined Airspace Configurations** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2021		**10%**	**Ongoing**
-				
MATIAS System will be adapted to communicate with LARA System in terms of airspace data. Procedures will be implemented in support of an improved ASM solution process and pre-defined airspace configurations.				**31/05/2021**
ASP (By:12/2021)				
HungaroControl	MATIAS System will be adapted to communicate with LARA System in terms of airspace data. Procedures will be implemented in support of an improved ASM solution process and pre-defined airspace configurations.	-	10%	Ongoing 31/05/2021

<table>
<tr><td>AOM21.2</td><td colspan="2">Free Route Airspace
<u>Timescales:</u>
Initial operational capability: 01/01/2015
Full operational capability: 31/12/2021</td><td>80%</td><td>Late</td></tr>
<tr><td colspan="5">-</td></tr>
<tr><td colspan="4">The implementation of Free Route concept in Budapest FIR was planned by 03/2015 but implemented by 05/02/2015 for the whole airspace H24 7/7 (24 hours a day 7 days a week, both upper and lower airspace).
Currently HungaroControl has not yet defined the project management/implementation plan for the implementation of automatic support of dynamic sectorisation.</td><td>31/12/2023</td></tr>
<tr><td colspan="5">ASP (By:12/2021)</td></tr>
<tr><td>HungaroControl</td><td>The implementation of Free Route concept in Budapest FIR was planned by 03/2015 but implemented by 05/02/2015 for the whole airspace H24 7/7 (24 hours a day 7 days a week, both upper and lower airspace). The FRA airspace is coordinated with the FAB partners (and also with non FAB partners). The NM has been informed and the airspace is validated with the NM. The RAD is updated. The ASM and ATFCM processes have been reviewed. Publication was completed according to the AIRAC system by 11th of December 2014.

Currently HungaroControl has not yet defined the project management/implementation plan for the implementation of automatic support of dynamic sectorisation.</td><td>ATM System (MATIAS) upgrade for cross-border free route operation / DEVOPS: FABCE Development of Operational Performance and ATM Strategies (previously Project 1) / MATIAS Build 11</td><td>80%</td><td>Late
31/12/2023</td></tr>
</table>

<table>
<tr><td>AOP04.1</td><td colspan="2">Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)
<u>Timescales:</u>
Initial operational capability: 01/01/2007
Full operational capability: 31/12/2011</td><td>100%</td><td>Completed</td></tr>
<tr><td colspan="5">LHBP - Budapest Liszt Ferenc International Airport</td></tr>
<tr><td colspan="4">Multi-lateration system (including new Surface Movement Radars) fulfilling Level 1 requirements is in operation and has been approved by NSA, staff has been trained. Automatic aircraft identification is operational as from end 2010. Collaboration is established between HungaroControl and Budapest Airport. NTA AA approved the amendment of the Airport Rules.</td><td>31/12/2011</td></tr>
<tr><td colspan="5">REG (By:12/2010)</td></tr>
<tr><td>Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department</td><td>The carriage of required aircraft and vehicle equipment are mandated and verified, procedures are incorporated into national legislation. The A-SMGCS Level 1 system has been approved for operational use.</td><td>-</td><td>100%</td><td>Completed
31/12/2010</td></tr>
<tr><td colspan="5">ASP (By:12/2011)</td></tr>
<tr><td>HungaroControl</td><td>Multi-lateration system (including new Surface Movement Radars) fulfilling Level 1 requirements is in operation, staff has been trained. Automatic aircraft identification is operational from the end of 2010.</td><td>-</td><td>100%</td><td>Completed
31/12/2010</td></tr>
<tr><td colspan="5">APO (By:12/2010)</td></tr>
<tr><td>Budapest Airport Pte. Ltd.</td><td>Collaboration is established between HungaroControl and Budapest Liszt Ferenc International Airport. A-SMGCS is at HungaroControl costs (including surveys); equipment of vehicles, training of drivers is at Budapest Airport costs. Equipment of ground vehicles and training of drivers completed, ongoing process.</td><td>-</td><td>100%</td><td>Completed
31/12/2011</td></tr>
</table>

AOP04.2	**Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)** ***Timescales:*** Initial operational capability: 01/01/2007 Full operational capability: 31/12/2017		**50%**	**Late**
LHBP - Budapest Liszt Ferenc International Airport				
RMCA compliant A-SMGCS is installed and operated by HungaroControl at Budapest Liszt Ferenc International Airport. Tests for RMCA functionalities are in progress but the system is not yet in operation. The test period of the RMCA functionalities are extended. Operational use will start after fine tuning of functionalities, to be achieved by 12/2019. Controllers training in accordance with agreed training requirements and programme planned to be completed at December 2019. The Airport operator installed the vehicle locator systems for all involved vehicles. The driver trainings were completed.				**31/12/2019**
ASP (By:12/2017)				
HungaroControl	SMRs and Mode S multilateration are installed and operated by HungaroControl at Budapest Liszt Ferenc International Airport. Tests for RMCA are in progress, functionalities need to be fine tuned and are not yet in operation. Controllers training in accordance with agreed training requirements and programme will be completed by December 2019.	-	33%	Late 31/12/2019
APO (By:12/2017)				
Budapest Airport Pte. Ltd.	Required surveillance and functional equipment for A-SMGCS are installed and operated by HungaroControl at Budapest Liszt Ferenc International Airport. The Airport operator installed the vehicle locator systems for all involved vehicles. The driver trainings were completed.	-	100%	Completed 31/12/2009

<table>
<tr><td>AOP05</td><td colspan="3">Airport Collaborative Decision Making (A-CDM)
<u>Timescales:</u>
Initial operational capability: 01/01/2004
Full operational capability: 31/12/2016</td><td>62%</td><td>Late</td></tr>
<tr><td colspan="6">LHBP - Budapest Liszt Ferenc International Airport</td></tr>
<tr><td colspan="5">The CDM project has been restarted by Budapest Airport in September 2010. Budapest Airport is the leading party, HungaroControl and EUROCONTROL have initiated work to put in place CDM. The implementation plan based on CDM Manual guidelines is finalized and the data sharing platform is installed. Information sharing platform test and validation have been restarted and ongoing.
The MoU and LoAs are planned to be signed in 2019. The modifications of the existing LoAs with all CDM stakeholders (handling agents, AOC, ATC Airport) are in progress and local procedures for turnaround processes planned to be defined in accordance with the CDM Manual guidelines will be implemented by the end of 2019.</td><td>31/12/2023</td></tr>
<tr><td colspan="6">ASP (By:12/2016)</td></tr>
<tr><td>HungaroControl</td><td colspan="2">Budapest Airport is the leading party and HungaroControl is participating in the project. Automatic information sharing between systems of Budapest Airport and HungaroControl is in operation. Local procedures for turnaround processes definitions will be finalized in accordance with the CDM Manual guidelines as part of the CDM project and planned to be implemented till 12/2019 in cooperation with Budapest Airport Pte. Ltd. Variable taxi-time has been defined and implemented. Pre-departure sequencing together with DMAN and operational procedures planned to be implemented and published in AIP by 12/2023. Procedures for CDM in adverse conditions, including the de-icing planned to be defined, implemented and validated by 31/12/2019. Implementation date of CDM adverse procedures depends on the Airport activity in the subject.</td><td>CDM</td><td>66%</td><td>Late
31/12/2023</td></tr>
<tr><td colspan="6">APO (By:12/2016)</td></tr>
<tr><td>Budapest Airport Pte. Ltd.</td><td colspan="2">The Gap Analysis took place in September 2010; the report is finalized. The implementation plan based on CDM Manual guidelines is finalized and the data sharing platform is installed. The system test and validation finished in Q4 of 2018. The MoU and LoAs are planned to be signed in 2019.</td><td>CDM</td><td>58%</td><td>Late
31/12/2019</td></tr>
</table>

AOP10	**Time-Based Separation** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
LHBP - Budapest Liszt Ferenc International Airport **(Outside Applicability Area)**				
Hungary is outside the applicability area.				**-**
REG (By:12/2023)				
Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department	Hungary is outside the applicability area.	-	%	Not Applicable -
ASP (By:12/2023)				
HungaroControl	Hungary is outside the applicability area.	-	%	Not Applicable -

AOP11	**Initial Airport Operations Plan** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
LHBP - Budapest Liszt Ferenc International Airport **(Outside Applicability Area)**				
Hungary is outside the applicability area.				**-**
ASP (By:12/2021)				
HungaroControl	Hungary is outside the applicability area.	-	%	Not Applicable -
APO (By:12/2021)				
Budapest Airport Pte. Ltd.	Hungary is outside the applicability area.	-	%	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**
LHBP - Budapest Liszt Ferenc International Airport **(Outside Applicability Area)**				
Hungary is outside of the Applicability Area.				**-**
ASP (By:12/2020)				
HungaroControl	Hungary is outside of the Applicability Area.	-	%	Not Applicable -
APO (By:12/2020)				
Budapest Airport Pte. Ltd.	The Budapest Airport at this stage is not part of the Applicability Area.	-	%	Not Applicable -

AOP13	**Automated Assistance to Controller for Surface Movement Planning and Routing** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
LHBP - Budapest Liszt Ferenc International Airport **(Outside Applicability Area)**				
Hungary is outside of the Applicability Area.				**-**
REG (By:12/2023)				
Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department	Hungary is outside of the Applicability Area.	-	%	Not Applicable -
ASP (By:12/2023)				
HungaroControl	Hungary is outside of the Applicability Area.	-	%	Not Applicable -

ATC02.8	**Ground-Based Safety Nets** ***Timescales:*** Initial operational capability: 01/01/2009 Full operational capability: 31/12/2016		**100%**	**Completed**
-				
The APW, MSAW and APM implementation by HungaroControl has been done fully in line with the EUROCONTROL Specification. **The technical functionality is implemented in MATIAS ATC system. The operational implementation is completed in 02/2014.** **Not applicable for MIL.**				**28/02/2014**
ASP (By:12/2016)				
HungaroControl	The APW, MSAW and APM implementation by HungaroControl has been done fully in line with the EUROCONTROL Specification. Technical implementation has been done. The technical file (TF) with evidences of compliance and the EC declaration of verification of systems (DoV) has been delivered to the NSA at the end of 2012. The APW, MSAW and APM functions are in operation from 02/2014. The ATCOs have been trained according to the Eurocontrol Specifications.	-	100%	Completed 28/02/2014

ATC02.9	**Enhanced Short Term Conflict Alert (STCA) for TMAs** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2020		**100%**	**Completed**
-				
Hungary has implemented and approved STCA functionality in accordance with EUROCONTROL specification in Budapest ACC and TMA. The STCA in place satisfies the current operational needs and it does not use the multi-hypothesis algorithm.				**31/12/2005**
ASP (By:12/2020)				
HungaroControl	Hungary has implemented and approved STCA functionality in accordance with EUROCONTROL specification in Budapest ACC and TMA. The STCA in place satisfies the current operational needs and it does not use the multi-hypothesis algorithm.	-	100%	Completed 31/12/2005

ATC07.1	**AMAN Tools and Procedures** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
LHBP - Budapest Liszt Ferenc International Airport **(Outside Applicability Area)**				
Hungary is not in the applicability area for this objective. Arrival management tool implementation will be considered when traffic increase at Budapest Liszt Ferenc International Airport demands it. Arrival sequencing is a function included in MATIAS ATC system, but is not sufficient to meet the requirements of this objective.				**-**
ASP (By:12/2019)				
HungaroControl	Arrival management tool implementation will be considered when traffic increase at Budapest Liszt Ferenc International Airport demands it. Arrival sequencing is a function included in MATIAS ATC system, but is not sufficient to meet the requirements of this objective.	AMAN LOWW initial	%	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		**73%**	**Ongoing**
-				
MTCD and the resolution support functions have been implemented in MATIAS ATC system. TCT functions are planned to be implemented and in operational use by 31/03/2019.				**31/03/2019**
ASP (By:12/2021)				
HungaroControl	MTCD and the resolution support functions have been implemented in MATIAS ATC system. TCT functions are planned to be implemented and in operational use by 31/03/2019.	-	73%	Ongoing 31/03/2019

<table>
<tr><td>ATC15.1</td><td colspan="2">Information Exchange with En-route in Support of AMAN
<u>Timescales:</u>
Initial operational capability: 01/01/2012
Full operational capability: 31/12/2019</td><td>28%</td><td>Ongoing</td></tr>
<tr><td colspan="5">-</td></tr>
<tr><td colspan="4">HungaroControl plans to comply with the objective in coordination with Austro Control. HungaroControl plans to implement ATC procedures in En-Route airspace/sectors. The MATIAS ATC system is planned to be upgraded to be compliant to AMAN use in en-route.</td><td>31/12/2019</td></tr>
<tr><td colspan="5">ASP (By:12/2019)</td></tr>
<tr><td rowspan="2">HungaroControl</td><td rowspan="2">HungaroControl plans to comply with the objective by 12/2019. The MATIAS ATC system will be upgraded to be compliant to AMAN use in en-route having functionality implemented to support AMAN operations in Vienna Airport.</td><td rowspan="2">AMAN LOWW initial / MATIAS Build 11</td><td rowspan="2">28%</td><td>Ongoing</td></tr>
<tr><td>31/12/2019</td></tr>
</table>

<table>
<tr><td>ATC15.2</td><td colspan="2">Arrival Management Extended to En-route Airspace
<u>Timescales:</u>
Initial operational capability: 01/01/2015
Full operational capability: 31/12/2023</td><td>0%</td><td>Not yet planned</td></tr>
<tr><td colspan="5">-</td></tr>
<tr><td colspan="4">HungaroControl and NSA expect to comply with the objective with other stakeholders. HungaroControl expects to implement ATC procedures in En-Route airspace/sectors. The MATIAS ATC system is expected to be upgraded to be compliant to extended use of AMAN in en-route Airspace.</td><td>-</td></tr>
<tr><td colspan="5">ASP (By:12/2023)</td></tr>
<tr><td rowspan="2">HungaroControl</td><td rowspan="2">HungaroControl expects to comply with the objective in coordination with the adjacent ANSPs if required by them (i.e. Austro Control). All activities will start after finishing the objective ATC 15.1 Basic AMAN.</td><td rowspan="2">-</td><td rowspan="2">0%</td><td>Not yet planned</td></tr>
<tr><td>-</td></tr>
</table>

<table>
<tr><td>ATC17</td><td colspan="3">Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer
Timescales:
Initial operational capability: 01/01/2013
Full operational capability: 31/12/2018</td><td>68%</td><td>Late</td></tr>
<tr><td colspan="6">-</td></tr>
<tr><td colspan="5">The OLDI messages of the Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer are fully implemented technically in the MATIAS ATC system. Currently only the PAC, COF and MAS (transfer) messages are in operational use since there is no partner ANSP ready for the common implementation.
The training plans have been updated and a training package has been developed by the HungaroControl for the use of electronic dialogue procedure in case of intersector coordination. For any changes in the electronic dialogue procedure in case of inter ATSU coordination the ATM personnel will be trained.
Formal approval by the NSA of the changes induced by upgrades of the MATIAS ATC system to support Electronic Dialogue during Coordination and Transfer planned to be provided to the ANSP by the end of 2022.</td><td>31/12/2022</td></tr>
<tr><td colspan="6">ASP (By:12/2018)</td></tr>
<tr><td>HungaroControl</td><td colspan="2">The OLDI messages of the Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer are fully implemented technically in the MATIAS ATC system and in operation in case of intersector communication. For inter FIR communication the PAC, COF and MAS (transfer) messages are in operational use currently. For the rest of the messages there is no plan since there is no partner ANSP ready for the common implementation. Testing of all the remaining OLDI messages has been started with partners.
The training plans have been updated and a training package has been developed by the HungaroControl for the use of electronic dialogue procedure and transfer in case of intersector coordination. For any changes in the electronic dialogue procedure and transfer in case of inter ATSU coordination the ATM personnel will be trained.</td><td>-</td><td>68%</td><td>Late
31/12/2022</td></tr>
</table>

COM10	Migrate from AFTN to AMHS *Timescales:* Initial operational capability: 01/12/2011 Full operational capability: 31/12/2018		30%	Late
-				
AFTN/AMHS COM centre with AMHS functionalities has been implemented already in Hungary. The international AMHS functionalities are operationally used since of 10/07/2017, the EXTENDED functionalities by Q2 2019. MIL will follow afterwards and plans to migrate the system by the end of 2020.				**31/12/2020**
ASP (By:12/2018)				
Mil. Authority	The military implementation of AMHS functionality depends on finishing of the implementation of this objective by HungaroControl. High level decision is required for further actions.	-	0%	Late 31/12/2020
HungaroControl	HungaroControl has implemented an AFTN/AMHS COM centre with AMHS functionalities. The international AMHS functionalities are operationally used since 10/07/2017, the extended functionalities are planned to be operationally used by Q2 2019.	Replacement of the AFTN / AMHS communication centre	60%	Late 31/05/2019

COM11	Voice over Internet Protocol (VoIP) *Timescales:* Initial operational capability: 01/01/2013 Full operational capability: 31/12/2020		83%	Ongoing
-				
HungaroControl has the intention to implement this objective under NSA oversight. Safety assessment documentation have been submitted to and approved by the NSA. Project has finished the upgrade of Voice Communication Switch to be capable for ED-137B VoIP standard. Technical File and Declaration of Verification have been delivered to the NSA. Voice communication A/G system has been tested and validated by 13th of December 2017. The upgraded system will be put into operation by 12/2019 due to necessary cabling modification and radio racks upgrade. Military has no intention to implement this objective due security reasons.				**15/12/2019**
ASP (By:12/2020)				
HungaroControl	Safety assessment documentation have been submitted to and approved by the NSA. Project has finished the upgrade of Voice Communication Switch to be capable for ED-137B VoIP standard. Technical File and Declaration of Verification have been delivered to the NSA. Voice communication A/G system has been tested and validated by 13th of December 2017. The upgraded system will be put into operation by 12/2019 due to necessary cabling modification and radio racks upgrade. Military has no intention to implement this objective due security reasons.	Implement Voice over IP (VoIP) network segment for VoIP in ATM	83%	Ongoing 15/12/2019

COM12	**New Pan-European Network Service (NewPENS)** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability (33 ANSPs): 31/12/2020		**47%**	**Ongoing**
-				
HungaroControl is supporting the work of the established NewPENS transition related working groups. After signing of the contract with the new Network service provider, based on the pan-european transition plan, we schedule the in-house activities. The existing infrastructure is suitable and ready to interconnect the NewPENS Network with the in-house systems. HungaroControl plans to migrate to NewPENS all services by 31/10/2019.				**31/10/2019**
ASP (By:12/2024)				
HungaroControl	HungaroControl is supporting the work of the established NewPENS transition related working groups. After signing of the contract with the new Network service provider, based on the pan-european transition plan, we schedule the in-house activities. The existing infrastructure is suitable and ready to interconnect the NewPENS Network with the in-house systems. HungaroControl plans to migrate to NewPENS all services by 31/10/2019.	-	70%	Ongoing 31/10/2019
APO (By:12/2024)				
Budapest Airport Pte. Ltd.	Budapest Airport presently has no plan to implement this objective.	-	0%	Not yet planned -

<table>
<tr><td>ENV01</td><td colspan="2">Continuous Descent Operations (CDO)
Timescales:
Initial operational capability: 01/07/2007
Full operational capability: 31/12/2023</td><td>100%</td><td>Completed</td></tr>
<tr><td colspan="5">LHBP - Budapest Liszt Ferenc International Airport</td></tr>
<tr><td colspan="4">The objective was implemented in 2013. Budapest Airport Pte. Ltd. took part in the consultation with HungaroControl and EUROCONTROL on the CDA implementation. CDA techniques training was accomplished for the Approach staff by 03/2013. The Noise Monitoring and Flight Track System is in place and capable of monitoring performance. The benefits of CDA are under continuous analysis. The airlines, aircraft operators and other involved partners regularly informed about the benefits of the system.
Within the framework of BUD2.0 project new fine tuned approach procedures were developed, tested, validated, published and made available for users from September 2016. The monitoring and measurement of CDO execution is performed by an own developed software. The feedback of CDO performance is available in the monthly environmental reports for all interested parties.</td><td>15/09/2016</td></tr>
<tr><td colspan="5">ASP (By:12/2023)</td></tr>
<tr><td>HungaroControl</td><td>Development and validation of the CDA operational concept finished successfully in 2011. As part of the implementation of CDA live flight trials were conducted in cooperation with WizzAir within the frame of a SESAR related project (REACT-Plus) in 2013. HungaroControl published the fully operational CDAs in 2013.
Within the framework of BUD2.0 project new fine tuned approach procedures were developed, tested, validated, published and made available for users from September 2016. The monitoring and measurement of CDO execution is performed by an own developed software. The feedback of CDO performance is available in the monthly environmental reports for all interested parties.</td><td>-</td><td>100%</td><td>Completed
15/09/2016</td></tr>
<tr><td colspan="5">APO (By:12/2023)</td></tr>
<tr><td>Budapest Airport Pte. Ltd.</td><td>The objective is completed for Budapest Liszt Ferenc International Airport. The Noise Monitoring and Flight Track System is already in place and capable of monitoring performance. Information for the local community as well as for general media is provided by Budapest Airport Pte. Ltd. The benefits of CDA are under continuous analysis. The airlines, aircraft operators and other involved partners regularly informed about the benefits of the system.</td><td>-</td><td>100%</td><td>Completed
31/12/2012</td></tr>
</table>

<table>
<tr><td>FCM03</td><td colspan="2">Collaborative Flight Planning
<u>Timescales:</u>
Initial operational capability: 01/01/2000
Full operational capability: 31/12/2017</td><td>62%</td><td>Late</td></tr>
<tr><td colspan="5">-</td></tr>
<tr><td colspan="4">Automatic IFPS processing is achieved. The ATC system can send and receive flight plan data in ADEXP format. The MATIAS ATC system software satisfies the requirements since December 2005 but a number of functionalities are not yet in operation. The automation of sending all of the corresponding messages is planned to be operational by December 2019. Not applicable for MIL since traffic amount does not justify the implementation.</td><td>31/12/2019</td></tr>
<tr><td colspan="5">ASP (By:12/2017)</td></tr>
<tr><td>HungaroControl</td><td>Automatic IFPS processing is achieved. The ATC system can send and receive flight plan data in ADEXP format. The MATIAS ATC system software satisfies the requirements since December 2005 but a number of functionalities are not yet in operation. The automation of sending all of the corresponding messages is planned to be operational by December 2019.</td><td>-</td><td>62%</td><td>Late
31/12/2019</td></tr>
</table>

<table>
<tr><td>FCM04.1</td><td colspan="2">Short Term ATFCM Measures (STAM) - Phase 1
<u>Timescales:</u>
Initial operational capability: 01/09/2013
Full operational capability: 31/10/2017</td><td>100%</td><td>Completed</td></tr>
<tr><td colspan="5">-</td></tr>
<tr><td colspan="4">Although FAB CE States are not in the initial applicability area for STAM Phase 1 implementation, FAB CE STAM Working Group was formed as part of FAB CE P3 and tasked with a STAM Live Trial, which was executed in September 2015. Live Trial was used to explore and verify the possibility to introduce the application of STAM Phase 1 in FABCE area.
After assessing the results and recommendations coming from the FAB CE STAM LT, FAB CE OPS SC has decided to proceed with STAM Phase 1 implementation in FABCE. Implementation was planned for FAB CE States by 27. April 2017. HungaroControl has already implemented STAM phase 1.</td><td>31/07/2014</td></tr>
<tr><td colspan="5">ASP (By:10/2017)</td></tr>
<tr><td>HungaroControl</td><td>Despite HungaroControl is not in the applicability area for this objective it implemented STAM phase 1.</td><td>FAB CE-wide Study of Dynamic Airspace Management (DAM) and STAM</td><td>100%</td><td>Completed
31/07/2014</td></tr>
</table>

<table>
<tr><td rowspan="4">FCM04.2</td><td colspan="2">Short Term ATFCM Measures (STAM) - Phase 2
Timescales:
Initial operational capability: 01/11/2017
Full operational capability: 31/12/2021</td><td>0%</td><td>Not yet planned</td></tr>
</table>

<table>
<tr><td colspan="5">-</td></tr>
<tr><td colspan="4">HungaroControl has general intention to implement this objective by 12/2021 but there has not been defined project management and implementation plan for this objective with assigned financial and human resources yet.

At FAB CE level Initial actions have started as part of FAB CE DAM/STAM Project (ex. P3). It is likely that STAM phase 2 will be implemented with the availability of this function in the N-connect Tool.</td><td>-</td></tr>
<tr><td colspan="5">ASP (By:12/2021)</td></tr>
<tr><td rowspan="2">HungaroControl</td><td rowspan="2">HungaroControl has general intention to implement this objective by 12/2021 but there has not been defined project management and implementation plan for this objective with assigned financial and human resources yet.</td><td rowspan="2">FAB CE-wide Study of Dynamic Airspace Management (DAM) and STAM</td><td rowspan="2">0%</td><td>Not yet planned</td></tr>
<tr><td>-</td></tr>
</table>

<table>
<tr><td>FCM05</td><td>Interactive Rolling NOP
Timescales:
Initial operational capability: 01/09/2013
Full operational capability: 31/12/2021</td><td>0%</td><td>Not yet planned</td></tr>
</table>

<table>
<tr><td colspan="5">-</td></tr>
<tr><td colspan="4">HungaroControl and the Airport Operator is fully committed to implement this objective, but there is no implementation date decided yet.
The airport is providing the slot information to the National Slot Coordinating Service and the Flow manager belonging to HungaroControl.

AT FAB CE level implementation of interactive rolling NOP is planned through upgrade of the automated ASM support system with the capability of AIXM 5.1 B2B data exchange with NM and an integration of the automated ASM support systems with the Network. All these projects will be fulfilled in accordance with the NM support, the guidance and the relevant provisions of the NM B2B Reference Manuals.</td><td>-</td></tr>
<tr><td colspan="5">ASP (By:12/2021)</td></tr>
<tr><td rowspan="2">HungaroControl</td><td rowspan="2">HungaroControl is fully committed to implement this objective, but there is no implementation date decided yet.</td><td rowspan="2">FAB CE-wide Study of Dynamic Airspace Management (DAM) and STAM</td><td rowspan="2">0%</td><td>Not yet planned</td></tr>
<tr><td>-</td></tr>
<tr><td colspan="5">APO (By:12/2021)</td></tr>
<tr><td rowspan="2">Budapest Airport Pte. Ltd.</td><td rowspan="2">The airport is providing the slot information to the National Slot Coordinating Service and the Flow manager belonging to HungaroControl. Budapest Airport is fully committed to implement this objective, but there is no implementation date decided yet.</td><td rowspan="2">-</td><td rowspan="2">0%</td><td>Not yet planned</td></tr>
<tr><td>-</td></tr>
</table>

FCM06	**Traffic Complexity Assessment** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 31/12/2021		**0%**	**Planned**
-				
HungaroControl has intention to procure Local Traffic Management tool as a system or as a service planned to be used operationally by September 2020.				**30/09/2020**
ASP (By:12/2021)				
HungaroControl	HungaroControl has intention to procure Local Traffic Management tool as a system or as a service planned to be used operationally by September 2020.	FAB CE-wide Study of Dynamic Airspace Management (DAM) and STAM	0%	Planned 30/09/2020

FCM08	**Extended Flight Plan** ***Timescales:*** Initial operational capability: 01/01/2016 Full operational capability: 31/12/2021		**10%**	**Ongoing**
-				
Project management and implementation plan has been defined by HungaroControl for the implementation. The project started on 31/01/2018. EFPL reception and process will be implemented operationally by 31/12/2021.				**31/12/2021**
ASP (By:12/2021)				
HungaroControl	Project management and implementation plan has been defined by HungaroControl for the implementation. The project started on 31/01/2018. EFPL reception and process will be implemented operationally by 31/12/2021.	-	10%	Ongoing 31/12/2021

INF07	**Electronic Terrain and Obstacle Data (eTOD)** ***Timescales:*** Initial operational capability: 01/11/2014 Full operational capability: 31/05/2018		**31%**	**Late**
-				
Within the framework of the ADQ implementation program the TOD policy has been drafted. The relevant national regulation has also been drafted and now it has been presented to the Government for approval. **As the TOD policy is Late, stakeholders can't start their work on developing the required plan and the implementation.**				**31/12/2020**
REG (By:05/2018)				
Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department	The national TOD policy has been prepared, however the approval at State level is ongoing. The approval will be realized by the adoption of the TOD regulatory framework. The TOD regulatory framework has been prepared, the legislative process is in the final stage. The ANS and Aerodrome Supervisory Department plans to apply oversight of TOD implementation procedure and to verify the regulatory compliance of TOD implementation once the national TOD policy and regulatory framework is established.	ADQ implementation	5%	Late 31/12/2019
Ministry for Innovation and Technology/Department for Civil Aviation and Inland Navigation	The national TOD policy has been prepared, however the approval at State level is ongoing. The approval will be realized by the adoption of the TOD regulatory framework. The approval of the regulatory framework can react to the policy. The regulatory framework is in the final stage and it has been presented to the Government for approval.	-	40%	Late 31/05/2019
ASP (By:05/2018)				
HungaroControl	Within the framework of the ADQ implementation program the TOD policy has been drafted in terms of Aeronautical obstacle provision. The relevant national regulation has also been drafted and now it is under legislative review. Implementation programme will be developed based on the regulatory framework when it will be in force. In spite of the fact that the national regulatory framework is not in force yet, the AIM system to ensure the collection, management and provision of Aeronautical Obstacle data is implemented. The collection of the terrain data will be implemented according to the national policy when it will be in force.	ADQ implementation	40%	Late 31/07/2020
APO (By:05/2018)				
Budapest Airport Pte. Ltd.	The national TOD policy has been prepared, however the approval at State level is ongoing. Within the framework of the ADQ implementation program the TOD policy has been drafted. The relevant national regulation has also been drafted and now it is under legislative review. Implementation programme will be developed based on the regulatory framework when it will be in force.	ADQ implementation	40%	Late 31/12/2020

<table>
<tr><td>INF08.1</td><td colspan="3">Information Exchanges using the SWIM Yellow TI Profile
<u>Timescales:</u>
Initial operational capability: 01/01/2018
Full operational capability: 31/12/2024</td><td>0%</td><td>Not yet planned</td></tr>
<tr><td colspan="6">-</td></tr>
<tr><td colspan="5">HungaroControl has not yet defined a project management/implementation plan for this objective with assigned financial and human resources but has the intention to implement it.
Budapest Airport has not yet defined a project management/implementation plan for this objective with assigned financial and human resources but has the intention to implement it.
Not applicable for MIL.</td><td>-</td></tr>
<tr><td colspan="6">ASP (By:12/2024)</td></tr>
<tr><td rowspan="2">HungaroControl</td><td rowspan="2">HungaroControl has not yet defined a project management/implementation plan for this objective with assigned financial and human resources but has the intention to implement it.
Hungarocontrol already exchanges aeronautical data with NM in support of the Airspace Management function via LARA tool.</td><td rowspan="2">-</td><td rowspan="2" colspan="2">0%</td><td>Not yet planned</td></tr>
<tr><td>-</td></tr>
<tr><td colspan="6">MIL (By:12/2024)</td></tr>
<tr><td rowspan="2">Mil. Authority</td><td rowspan="2">Not applicable for MIL.</td><td rowspan="2">-</td><td rowspan="2" colspan="2">%</td><td>Not Applicable</td></tr>
<tr><td>-</td></tr>
<tr><td colspan="6">APO (By:12/2024)</td></tr>
<tr><td rowspan="2">Budapest Airport Pte. Ltd.</td><td rowspan="2">Budapest Airport has not yet defined a project management/implementation plan for this objective with assigned financial and human resources but has the intention to implement it.</td><td rowspan="2">-</td><td rowspan="2" colspan="2">0%</td><td>Not yet planned</td></tr>
<tr><td>-</td></tr>
</table>

<table>
<tr><td>ITY-ACID</td><td colspan="3">Aircraft Identification
<u>Timescales:</u>
Entry into force of the Regulation: 13/12/2011
System capability: 02/01/2020</td><td>100%</td><td>Completed</td></tr>
<tr><td colspan="6">-</td></tr>
<tr><td colspan="5">The Aircraft Identification function technically implemented in MATIAS ATC system is fully in line with the EUROCONTROL Specification. The upgraded systems have been put into service, allowing the establishment of the individual aircraft identification since 12/2012.
HungaroControl declared as well the rest of the airspace of Budapest FIR below FL095 to the NM by the AIRAC date of 6. December 2018.
There is no plan to declare other airports as Mode S.</td><td>31/12/2012</td></tr>
<tr><td colspan="6">ASP (By:01/2020)</td></tr>
<tr><td rowspan="2">HungaroControl</td><td rowspan="2">The Aircraft Identification function technically implemented in MATIAS ATC system is fully in line with the EUROCONTROL Specification. The upgraded systems have been put into service, allowing the establishment of the individual aircraft identification since 12/2012. HungaroControl declared as well the rest of the airspace of Budapest FIR below FL095 to the NM by the AIRAC date of 6. December 2018. There is no plan to declare other airports as Mode S.</td><td rowspan="2">-</td><td rowspan="2" colspan="2">100%</td><td>Completed</td></tr>
<tr><td>31/12/2012</td></tr>
</table>

<table>
<tr><td>ITY-ADQ</td><td colspan="3">Ensure Quality of Aeronautical Data and Aeronautical Information
<u>Timescales:</u>
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</td><td>50%</td><td>Late</td></tr>
<tr><td colspan="6">-</td></tr>
<tr><td colspan="5">Hungary will declare the use of all of Eurocontrol Specification. The Hungarian ADQ implementing regulation will prescribe the evidence requirements for all regulated parties. The modification of the detailed plan is under development. AISP (HungaroControl) safety assessment report and EC declaration of verification of systems have been received and accepted by the NSA. The NSA is waiting for other ANSPs to send their change notification (based on ANSP implementation plan). NSA will audit ADQ conformity based on these evidence documents.
The ADQ legislative process is in the final stage. The concerning implementation ministerial decree will come into force at the latest in May 2019.
Awareness campaign for HungaroControl staff is completed. DQAP, ADQ compliant processes and procedures have been developed and are in force. ISQMS manual is reviewed and updated accordingly. ADQ compliant AIM System (workflow, traceability, archiving of amendment proposals, validation, etc.) has been implemented. All required means of compliance documents have been provided to the CAA.
Budapest Airport is connected to AIM system operated by HungaroControl and approved by the NSA. Meeting the requirements will be done based on the national guideline.
Military make actions to comply with ADQ regulation. Part of the MILAIS staff finished ISO 9001:2015 training. Military will make efforts to obtain ISO 9001 certification for MILAIS.</td><td>31/12/2020</td></tr>
<tr><td colspan="6">REG (By:06/2017)</td></tr>
<tr><td>Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department</td><td>Hungary will declare the use all of Eurocontrol Specification. The Hungarian ADQ implementing regulation will prescribe the evidence requirements for all regulated parties. The ADQ legislative process is in the final stage. The concerning implementation ministerial decree will come into force at the latest in May 2019. Detailed plan is under development. AISP (HungaroControl) safety assessment report and EC declaration of verification of systems have been received and accepted by the NSA. The NSA is waiting for other ANSPs to send their change notification (based on ANSP implementation plan). NSA will further audit ADQ conformity based on these evidence documents.</td><td>ADQ implementation</td><td></td><td>7%</td><td>Late
31/12/2019</td></tr>
</table>

ASP (By:06/2017)				
Mil. Authority	According to Commission Regulation (EU) No 73/2010 para (9) and Regulation (EC) No 549/2004 of the European Parliament and of the Council article 1 para (2) this objective should not concern military operations and training. However military makes effort to meet requirements. New procedures have been developed via Hungarian Defence Forces Joint Forces Command action No 602/2017 to regulate provision of aeronautical information and data. Military static and dynamic data published in EAD assured in conformity with SLA signed between AIS and MILAIS. Military plan to obtain ISO9001 certification for MILAIS not earlier than 2021. Military QMS manual has been developed and finalised in 2017Q3. Part of the MILAIS staff participated in ISO 9001:2015 training in January and September 2018. First inner audit implemented in October-November 2018. Due to procurement issues e-MILAIP will not be prepared and published for undefined period. Also in data chain, data provision index catalogue could not be finalised by reason of human resource shortage.	MANS 2010+ Program (Military)	21%	Late 31/12/2020
HungaroControl	Awareness campaign for HungaroControl staff is completed. DQAP, ADQ compliant processes and procedures have been developed and are in force. ISQMS manual is reviewed and updated accordingly. ADQ compliant AIM System (workflow, traceability, archiving of amendment proposals, validation, etc.) has been implemented. All required means of compliance documents have been provided to the CAA.	ADQ implementation	80%	Late 31/07/2019
APO (By:06/2017)				
Budapest Airport Pte. Ltd.	Data quality requirements have been implemented and are documented for verification and audited by the national Authority. The Airport operator is connected to AIM system operated by HungaroControl and approved by the NSA. Meeting the requirements will be done based on the national guideline.	ADQ implementation	77%	Late 30/03/2019

<table>
<tr><td>ITY-AGDL</td><td colspan="3">Initial ATC Air-Ground Data Link Services
<u>Timescales:</u>
Entry into force: 06/02/2009
ATS unit operational capability: 05/02/2018
Aircraft capability: 05/02/2020</td><td>100%</td><td>Completed</td></tr>
<tr><td colspan="6">-</td></tr>
<tr><td colspan="5">REG ensured the publication of all relevant information on the use of Datalink services in the AIP Hungary and during the CPDLC audit the NSA ensured ATN/VDL-2 availability, security policy and address management procedures are compliant with the EU standards.
HungaroControl completed the Objective by October of 2016.</td><td>13/10/2016</td></tr>
<tr><td colspan="6">REG (By:02/2018)</td></tr>
<tr><td>Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department</td><td colspan="2">REG ensured the publication of all relevant information on the use of Datalink services in the AIP Hungary and during the CPDLC audit the NSA ensured ATN/VDL-2 availability, security policy and address management procedures are compliant with the EU standards.</td><td>-</td><td>100%</td><td>Completed
31/12/2015</td></tr>
<tr><td colspan="6">ASP (By:02/2018)</td></tr>
<tr><td>HungaroControl</td><td colspan="2">HungaroControl completed the Objective by October of 2016.</td><td>-</td><td>100%</td><td>Completed
13/10/2016</td></tr>
<tr><td colspan="6">MIL (By:01/2019)</td></tr>
<tr><td>Mil. Authority</td><td colspan="2">Only the brand new transport type State aircraft which will enter into military service will have this capability.</td><td>-</td><td>100%</td><td>Completed
31/01/2014</td></tr>
</table>

<table>
<tr><td rowspan="1">ITY-AGVCS2</td><td>8,33 kHz Air-Ground Voice Channel Spacing below FL195
<u>Timescales:</u>
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</td><td>73%</td><td>Late</td></tr>
<tr><td colspan="4">-</td></tr>
<tr><td colspan="3">REG completed the Objective by the target date. Notification has been sent to the European Commission (DG Move) on frequency conversions planned by 12/2014. All OPC frequencies were converted by the target date. All the frequency assignments have been converted to 8,33 kHz and published so in the Table COM2 of ICAO Doc 7754, except where State has granted local exemptions notified to the European Commission until end of December 2017 according to the Regulation.
The State has published exemptions in the Hungarian AIP. From 17 November 2013, according to the regulations the NSA implemented processes that all radio equipment put into service or subject to radio upgrades by ANSPs, operators and other users or owners of radios includes the 8,33 kHz channel spacing capability and issues individual certificates of airworthiness or individual flight permits to aircraft that have a radio having the 8,33 kHz channel spacing capability.
The State nominated an 8,33 national coordinator to coordinate the process of converting radios on the ground and on board as well within Hungary and present the Hungarian status of implementation to the 8,33 Implementation Support Group. Hungary sent an exemption request to the EC regarding the on-board radios used by aircraft operated in Class F and G airspace for VFR traffic. The exemption request (on-board equipment to be replaced until 30 June 2018) has not affect on the European or the National frequency conversion progress. Exemption notification regarding frequency conversions has been sent to the European Commission until end of December 2017 according to the Regulation.
The SAFIRE (frequency database) represents the actual conversion status and plan, most of the frequencies of the ground services have been converted by the end of 2018. The remaining frequencies will be converted at the end of 2025 since these frequencies are mostly used by state aircraft (some of them with equipage mandate in 2025 according to Paragraph 11 of Article 9 in Regulation (EU) No. 1079/2012).

HungaroControl converted all 25 kHz channel spacing frequency assignments to 8.33 kHz channel spacing on 6 of December 2018 according to the Regulation 1079/2012/EU except those listed in the exemption notification sent to the European Commission until end of December 2017 according to the Regulation. All related information is published in the national AIP.

MIL plans to complete the Objective by 31/12/2025.</td><td>31/12/2025</td></tr>
</table>

REG (By:12/2018)				
Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department	REG completed the Objective by the target date. Notification has been sent to the European Commission (DG Move) on frequency conversions planned by 12/2014. All OPC frequencies were converted by the target date. All the frequency assignments have been converted to 8,33 kHz and published so in the Table COM2 of ICAO Doc 7754, except where State has granted local exemptions notified to the European Commission until end of December 2017 according to the Regulation. The State has published exemptions in the Hungarian AIP. From 17 November 2013, according to the regulations the NSA implemented processes that all radio equipment put into service or subject to radio upgrades by ANSPs, operators and other users or owners of radios includes the 8,33 kHz channel spacing capability and issues individual certificates of airworthiness or individual flight permits to aircraft that have a radio having the 8,33 kHz channel spacing capability. The State nominated an 8,33 national coordinator to coordinate the process of converting radios on the ground and on board as well within Hungary and present the Hungarian status of implementation to the 8,33 Implementation Support Group. Hungary sent an exemption request to the EC regarding the on-board radios used by aircraft operated in Class F and G airspace for VFR traffic. The exemption request (on-board equipment to be replaced until 30 June 2018) has not affect on the European or the National frequency conversion progress. Exemption notification regarding frequency conversions has been sent to the European Commission until end of December 2017 according to the Regulation. The SAFIRE (frequency database) represents the actual conversion status and plan, most of the frequencies of the ground services have been converted by the end of 2018. The remaining frequencies will be converted at the end of 2025 since these frequencies are mostly used by state aircraft (some of them with equipage mandate in 2025 according to Paragraph 11 of Article 9 in Regulation (EU) No. 1079/2012)	-	100%	Completed 31/12/2018
Mil. Authority	Mil. Authority plans to complete the Objective by 31/12/2025. The status of the SAFIRE (frequency database) represents the conversion plan. Frequencies used for military operations will be converted at the end of 2025 since these frequencies are used by state aircraft (some of them with equipage mandate in 2025 according to Paragraph 11 of Article 9 in Regulation (EU) No. 1079/2012).	-	38%	Late 31/12/2025

ASP (By:12/2018)				
Mil. Authority	Currently all the radios operated on the ground providing service to civilian aircraft are capable of providing 8.33 kHz channel spacing, except the radio communication equipment operated by the Tower of Szolnok Air Base. All frequency assignments published in the Table COM2 of ICAO Doc 7754, except where derogations apply or the State has granted local exemptions, will have been converted to 8,33 kHz by the target date.	-	37%	Late 31/12/2025
HungaroControl	All radio stations concerned by the project (remote radio sites and the ANS-I centre) are upgraded with radio equipment capable of 8.33 kHz channel spacing. The new radios were put into operation with the license issued by the NSA in December 2016. HungaroControl has performed two frequency conversions according to the Regulation by the end of 2014. HungaroControl converted all 25 kHz channel spacing frequency assignments to 8.33 kHz channel spacing on 6 of December 2018 according to the Regulation 1079/2012/EU except those listed in the exemption notification sent to the European Commission until end of December 2017 according to the Regulation. All related information is published in the national AIP.	-	100%	Completed 06/12/2018
MIL (By:12/2020)				
Mil. Authority	The military has already started the necessary developments. Due to the improvements probably there will be no such kind of equipment which are not 8.33 kHz capable until 31/12/2025.	-	50%	Late 31/12/2025
APO (By:12/2018)				
Budapest Airport Pte. Ltd.	The airport completed the required modifications based on regulations and authority requirements.	-	100%	Completed 06/12/2018
Mil. Authority	MIL ground radios that are providing service to civilian aircraft except Szolnok Air Base (LHSN) - are capable of 8.33 kHz channel spacing. MIL will ensure 25 kHz capability at its aviation related facilities until 31/12/2025 due to search and rescue operations. Search and rescue aircraft will be modernized with 8.33 kHz radios, or replaced with 8.33 capable aircraft until 31/12/2025. All frequency assignments published in the Table COM2 of ICAO Doc 7754, except where derogations apply or the State has granted local exemptions, will have been converted to 8,33 kHz until 31/12/2025.	-	0%	Late 31/12/2025

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		**38%**	**Completed**
-				
FMTP solution is implemented, International FMTP tests were performed. FMTP is operational. Authority approval was issued based on the required documents (TF and DoV). **Currently the military has no intention to implement FMTP solution. The MIL is considered 'low key stakeholder' for the completion of this objective, therefore the status at ASP and objective level is 'Completed' despite of MIL 'Not yet planned' status.**				**30/06/2013**
ASP (By:12/2014)				
Mil. Authority	The MIL is considered 'low key stakeholder' for the completion of this objective, therefore the status at ASP and objective level is 'Completed' despite of MIL 'Not yet planned' status. Currently the military has no intention to implement FMTP solution.	-	0%	Not yet planned -
HungaroControl	FMTP solution is implemented and operational with Croatia, Austria, Slovakia, Romania and Serbia. Authority approval was issued based on the required documents (TF and DoV).	-	100%	Completed 30/06/2013
MIL (By:12/2014)				
Mil. Authority	Currently the military has no intention to implement FMTP solution.	-	0%	Not yet planned -

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	**81%**	**Ongoing**
-			
Since the introduction of the SPI there was one change in the surveillance infrastructure. Safety assessment was done, acceptance was received from the NSA. Safety assessment for existing surveillance infrastructure as required by Regulation 1207/2011 EC has been developed and delivered to the NSA. NSA accepted the submitted safety assessment. Safety assessments in case of a change or new installation will be done when necessary. All HungaroControl personnel affected by the changes to the surveillance infrastructure have been trained. **In case ANSP will submit safety assessment report concerning change or new installation planned NSA will review the report before acceptance.** **All applicable state aircraft equipped with Mode S Elementary Surveillance. Further developments are under review based on the capability set out in Part B and Part C of Annex II.**			**31/01/2019**

REG (By:02/2015)				
Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department	Since the introduction of the SPI there was one change in the surveillance infrastructure, the A-SMGCS at BUD Airport was upgraded. Safety assessment was done, acceptance was received. Safety assessment for existing surveillance infrastructure as required by Regulation 1207/2011 EC has been developed and delivered to the NSA. NSA accepted the submitted safety assessment. In case ANSP will submit safety assessment report concerning further change or new installation planned NSA will review the report before acceptance.	-	100%	Completed 30/09/2013
ASP (By:02/2015)				
HungaroControl	Since the introduction of the SPI there was one change in the surveillance infrastructure. Safety assessment was done, acceptance was received. Safety assessment for existing surveillance infrastructure as required by Regulation 1207/2011 EC has been developed and delivered to the NSA. NSA accepted the submitted safety assessment. Safety assessments in case of a change or new installation will be done when necessary. The training plans have been updated, the training package has been developed and the personnel have been trained according to the Regulation (EU) 1207/2011 (SPI-IR).	-	100%	Completed 12/12/2015
MIL (By:06/2020)				
Mil. Authority	All applicable state aircraft equipped with Mode S Elementary Surveillance. Further developments are under review based on the capability set out in Part B and Part C of Annex II.	-	50%	Ongoing 31/01/2019

NAV03.1	**RNAV 1 in TMA Operations** ***Timescales:*** Initial operational capability: 01/01/2001 Full operational capability: 31/12/2023		**70%**	**Completed**
-				
The existing DME infrastructure is sufficient to support RNAV operations in Budapest TMA. Aircraft RNAV 1 equipage information is integrated into the latest upgrade of ATS automated systems. The design of RNAV 1 arrival procedures is completed, the implementation and publication is also completed in 2016. Redesign of all SIDs were completed in 2017 and published at 16/08/2018. HungaroControl has implemented Free Route Airspace in February 2015 in Budapest FIR. Therefore there are no available ATS routes for RNAV applicability. The relevant SLoAs are under review by the military side. Redesign of existing RNAV1 procedures is under consideration due to the capability of new aircraft and upgraded helicopters. This can be done when the MTMAs restructuring is completed. MIL air traffic controllers are trained to use RNAV1 procedures. The MIL is considered 'low key stakeholder' for the completion of this objective, therefore the status at ASP and objective level is 'Completed' despite of MIL 'Not yet planned' status.				**16/08/2018**
ASP (By:12/2023)				
Mil. Authority	The relevant SLoAs are under review by the military side. Redesign of existing RNAV1 procedures is under consideration due to the capability of new aircraft and upgraded helicopters. This can be done when the MTMAs restructuring is completed. MIL air traffic controllers are trained to use RNAV1 procedures. The MIL is considered 'low key stakeholder' for the completion of this objective, therefore the status at ASP and objective level is 'Completed' despite of MIL 'Not yet planned' status.	-	25%	Not yet planned -
HungaroControl	The existing DME infrastructure is sufficient to support RNAV operations in Budapest TMA. Aircraft RNAV 1 equipage information is integrated into the latest upgrade of ATS automated systems. The design of RNAV 1 arrival procedures is completed, the implementation and publication is also completed in 2016. Redesign of all SIDs were completed in 2017 and published at 16/08/2018. HungaroControl has implemented Free Route Airspace in February 2015 in Budapest FIR. Therefore there are no available ATS routes for RNAV applicability.	-	100%	Completed 16/08/2018

NAV03.2	**RNP 1 in TMA Operations** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2023		**0%**	**Not yet planned**
-				
Budapest airport is outside of the applicability area (as listed in section 1.2.1 to the Annex of the Commission Implementing Regulation (EU) No 716/2014 on the establishment of the Pilot Common Project (PCP IR)). Therefore presently there is no intention to implement RNP 1 based operation in Budapest TMA.				**-**
ASP (By:12/2023)				
HungaroControl	Budapest airport is outside of the applicability area (as listed in section 1.2.1 to the Annex of the Commission Implementing Regulation (EU) No 716/2014 on the establishment of the Pilot Common Project (PCP IR)). Therefore presently there is no intention to implement RNP 1 based operation in Budapest TMA.	-	0%	Not yet planned -

NAV10	**RNP Approach Procedures with Vertical Guidance** ***Timescales:*** Initial operational capability: 01/06/2011 Full operational capability: 31/12/2023		100%	Completed
-				
The revision of the transformation of the EASA material to local national regulatory activities has been done. It is not necessary to publish a regulation based on the EASA material. The Ministry of Innovation and Technology / ANS and Aerodrome Supervisory Department built the EASA material in their own compliance procedures, therefore the EASA material is applicable through the compliance procedures. APV/Baro/LPV SBAS procedures have been implemented at Budapest Liszt Ferenc Int. aerodrome for all RWYs in the frame of SESAR LSD project (Budapest 2.0) on 15th September 2016. Coordinates data are published in WGS-84 in accordance with ICAO Annex 15 requirements and Article 14 of Regulation (EU) No 73/2010. APV/Baro procedures developed by and published in cooperation with HungaroControl have been implemented at aerodrome Győr/Pér in the first half of 2013. For other aerodromes presently no concrete plans and information are available. HungaroControl is ready for cooperation in development, implementation and publication of APV procedures at other concerned aerodromes if requested by the concerned airport operators. HungaroControl has developed own local safety case according to Eurocontrol standards. It was applied for implemented instrument approach procedures at LHBP and LHPR aerodromes. The whole procedure design, implementation and safety process was covered by NSA oversight. Since LHBP and LHPR have already implemented APV, there is no need for a larger national safety case, it is enough to develop a local one for other aerodromes implementing the required operations in the future.				**15/09/2016**
REG (By:12/2023)				
Ministry for Innovation and Technology/Department for Civil Aviation and Inland Navigation	The revision of the transformation of the EASA material to local national regulatory activities has been done. It is not necessary to publish a regulation based on the EASA material. The Ministry of Innovation and Technology / ANS and Aerodrome Supervisory Department built the EASA material in their own compliance procedures, therefore the EASA material is applicable through the compliance procedures and it is not necessary to implement them into national laws.	-	%	Not Applicable -
ASP (By:12/2023)				
HungaroControl	APV/Baro/LPV SBAS procedures have been implemented at Budapest Liszt Ferenc Int. aerodrome for all RWYs in the frame of SESAR LSD project (Budapest 2.0) on 15th September 2016. Coordinates data are published in WGS-84 in accordance with ICAO Annex 15 requirements and Article 14 of Regulation (EU) No 73/2010. APV/Baro procedures developed by and published in cooperation with HungaroControl have been implemented at aerodrome Győr/Pér in the first half of 2013. For other aerodromes presently no concrete plans and information are available. HungaroControl is ready for cooperation in development, implementation and publication of APV procedures at other concerned aerodromes if requested by the concerned airport operators.	-	100%	Completed 15/09/2016

SAF11	**Improve Runway Safety by Preventing Runway Excursions** ***Timescales:*** Initial operational capability: 01/09/2013 Full operational capability: 31/01/2018		**75%**	**Late**
-				
Documentation for the European Action Plan for the Prevention of Runway Excursions has been disseminated. The state safety oversight activities based on the regulation 139/2014/EU include runway excursion measures to be checked on the certified aerodromes. The enforcement throughout the entire ADR regulation on the basis of the infrastructure (DSN) and operational (OPS) certificate is ensured. **The ASP has completed the actions related to its activities defined in the EAPPRE.** **On the MIL side designated Flight Safety officers are at the MIL airfields. They are aware of the prevention of RWY Excursions (under supervision of the Flight Safety Division of HUN Defence Forces Joint Forces Command). Further infrastructural developments are planned. MIL should be considered a "low key stakeholder" since currently there are no Joint Civilian/Military (Joint-Use) Airports in Hungary.** **At Budapest Airport the LRST is established. Parts 3.1 and 3.2 of the Action Plan are implemented. The aviation English of vehicle drivers is not applicable yet. It is dependent on local safety case to be accomplished.**				**31/12/2020**
REG (By:01/2018)				
Ministry for Innovation and Technology/ANS and Aerodrome Supervisory Department	Documentation for the European Action Plan for the Prevention of Runway Excursions has been disseminated. The state safety oversight activities based on the regulation 139/2014/EU include runway excursion measures to be checked on the certified aerodromes. The enforcement throughout the entire ADR regulation on the basis of the infrastructure (DSN) and operational (OPS) certificate is ensured.	-	100%	Completed 31/12/2018
ASP (By:12/2014)				
HungaroControl	The ASP has completed the actions related to its activities defined in the EAPPRE part 3.1, 3.2, 3.3. The implementation of the actions is reported through the agreed notification process between the NSA and HungaroControl from 2012.	-	100%	Completed 31/12/2013
Mil. Authority	Designated Flight Safety officers are at the MIL airfields. They are aware of the prevention of RWY Excursions (under supervision of the Flight Safety Division of HUN Defence Forces Joint Forces Command). Further infrastructural developments are planned.	-	10%	Late 31/12/2020
APO (By:12/2014)				
Mil. Authority	Designated Flight Safety officers are at the MIL airfields. They are aware of the prevention of RWY Excursions (under supervision of the Flight Safety Division of HUN Defence Forces Joint Forces Command). Further infrastructural developments are planned.	-	0%	Late 31/12/2020
Budapest Airport Pte. Ltd.	The LRST is established. Parts 3.1 and 3.2 of the Action Plan are implemented. The aviation English of vehicle drivers is not applicable yet. It is dependent on local safety case to be accomplished. Designated Flight Safety officers are at the MIL airfields. They are aware of the prevention of RWY Excursions (under supervision of the Flight Safety Division of HUN Defence Forces Joint Forces Command). Further infrastructural developments are planned.	-	40%	Late 31/12/2019

Additional Objectives for ICAO ASBU Monitoring

AOM21.1	**Direct Routing** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
-				
HungaroControl has implemented full free route (without any limitation) in February 2015.				**-**
ASP (By:12/2017)				
HungaroControl	HungaroControl has implemented full free route (without any limitation) in February 2015.	-	%	Not Applicable -

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**
-				
Hungary has implemented and approved STCA functionality in accordance with EUROCONTROL Specification.				**31/12/2005**
ASP (By:01/2013)				
HungaroControl	STCA implemented in MATIAS ATC system is fully in line with the EUROCONTROL Specification.	-	100%	Completed 31/12/2005

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**
-				
NTA AA supervises, certifies and delivers operational approval for ACAS II (TCAS 7.1) equipped aircraft. The performance of ACAS in the ATC environment is monitored by HungaroControl as described in provisions of PANS-ATM - ICAO Doc 4444 Fifteenth Edition 2007-ATM/501. HungaroControl uses the ASMT (Automated Safety Monitoring Tool) RA module and regularly sends data to ASMT User Group and EVAIR. The training plan has been developed and the concerned personnel was trained by 03/2012. All transport type state aircraft equipped with ACAS II (TCAS II) compliant equipment.				**01/12/2015**
REG (By:12/2015)				
Ministry for Innovation and Technology/ ANS and Aerodrome Supervisory Department	NTA AA supervises and delivers operational approval for ACAS II (TCAS 7.1) equipped aircraft. In accordance with CAT. IDE. A. 155. Commission Regulation 965/2012 and EU 1332/2011 IR the first individual certificate of airworthiness was requested in 2012.	-	100%	Completed 01/12/2015
ASP (By:03/2012)				
HungaroControl	The performance of ACAS in the ATC environment is monitored as described in provisions of PANS-ATM - ICAO Doc 4444 Fifteenth Edition 2007-ATM/501. HungaroControl uses the ASMT (Automated Safety Monitoring Tool) RA module and regularly sends data to ASMT User Group and EVAIR. The training plan has been developed and the concerned personnel was trained by 03/2012.	-	100%	Completed 31/03/2012
MIL (By:12/2015)				
Mil. Authority	All transport type state aircraft equipped with ACAS II (TCAS II) compliant equipment.	-	100%	Completed -

FCM01	**Implement enhanced tactical flow management services** ***Timescales:*** Initial operational capability: 01/08/2001 Full operational capability: 31/12/2006		**100%**	**Completed**
-				
Hungary is participating in the ETFMS program. The MATIAS ATC system software was adapted to provide the required data to ETFMS and all the messages are operational except the Departure Planning Information (DPI) message which is to be provided by Budapest Airport (APO).				**31/12/2013**
ASP (By:07/2014)				
HungaroControl	The MATIAS ATC system software has been upgraded and the whole functionality is operational. The CDM implementation and within the CDM the implementation of the DPI message sending capability is the responsibility of Budapest Airport (APO).	-	100%	Completed 31/12/2013

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**
-			
The implementation of ground-ground automated coordination processes is completed and in operational use already. The safety oversight of changes has been accomplished by the NSA after notification from ANSP. On the military side the Basic Flight Data Process is implemented and in operational use.			**24/11/2015**

ASP (By:12/2012)				
HungaroControl	The full implementation of some ground-ground automated co-ordination processes has been completed and they are in operational use by HungaroControl.	-	100%	Completed 24/11/2015
MIL (By:12/2012)				
Mil. Authority	The Basic Flight Data Process is implemented and in operational use.	-	100%	Completed -

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*	70%	Ongoing
LHBP - Budapest Liszt Ferenc International Airport			
The Remote Tower service for Budapest Liszt Ferenc International Airport will be implemented in several phases and provided from Budapest ACC Centre of HungaroControl. Presently this location provides services only for Budapest Airport. The first main phase, namely the Remote Contingency Tower was completed and acquired NSA approval to be operational in July 2017. Safety assessment, including hazard identification, risk assessment has been completed and delivered to the NSA. This safety assessment has been developed according to local methodology recognized by the NSA based on Eurocontrol SAM. The Remote Tower system has been implemented according to relevant specifications and supporting materials for the remote tower concept. For the Remote Contingency Tower the following features has been implemented: - Basic features: * Visual (panorama) presentation (OTW); and * Binocular functionality camera(s). - Advanced features: * Air situation display / ATC surveillance (radar, ADS-B, Multilateration); - Advanced visual features (AVF) that enhance vision and operator situational awareness, including during low visibility conditions: * Automatic visual tracking of moving objects; * ATC surveillance tracking; * Overlay information including labels; * Infra-red (IR) camera(s). The ATC procedures have been updated according to the remote tower requirements. All operational and technical personnel concerned are adequately trained and the ATCOs licences contain appropriate remote tower unit endorsement. The local airport procedures have been updated according to the remote tower requirements. All relevant personnel are informed in relation to the implementation of remote tower. Further developments are under way to transition to a full time remote tower operation.			31/03/2020

ATC18	Multi-Sector Planning En-route - 1P2T *Applicability and timescale: Local*	%	Not yet planned
-			
Presently no plan to implement operationally multi-sector planning at ACC sectors of Budapest ACC. However the function is technically fully implemented in the MATIAS ATC system but there is no plan for the operational introduction.			-

ENV02	Airport Collaborative Environmental Management *Applicability and timescale: Local*	%	Completed
LHBP - Budapest Liszt Ferenc International Airport			
HungaroControl is actively participating in the Noise Committee established by Budapest Airport. Budapest Airport and HungaroControl have signed a partnership agreement with the local communities around the airport. At Budapest Airport local rules for active noise abatement are in force. The Noise Monitoring and Flight Track System is already in place and capable of monitoring performance. The local community is informed yearly by Budapest Airport.			31/12/2014

ENV03	Continuous Climb Operations (CCO) *Applicability and timescale: Local*	50%	Ongoing
LHBP - Budapest Liszt Ferenc International Airport			
In January 2017 HungaroControl as an ANSP made a decision to redesign Budapest CTR and TMA airspaces including all relevant instrument procedures (SIDs, STARs and IAPs). The main objective during this review to take into account the CCO and CDO concept in the updated procedures. Within this review process the following stakeholders are going to be involved: National CAA (as an observer), Budapest Airport and main operators from Budapest Liszt Ferenc International Airport. At HungaroControl an own designed monitoring and measuring system is already operating. We are planning to expand the capability of this tool regarding the CCO and provide more precise database for the CAA and operators. In the last couple of years HungaroControl is determined on providing the relevant information in the direction of the local community. This is accomplished through a common information sharing with Budapest Airport in the following manners: BUD Airport website, local forums and HungaroControl publications and leaflets. HungaroControl organizes pilot-controller workshops annually and makes extra effort to implement the feedbacks from these events to the latest procedures. HungaroControl is in close cooperation with the operators and informs and supports them with the latest changes regarding the procedures, futures plans and concepts of the ANSP. The operators include the CCO techniques in their aircrew training manual on their own responsibility. Air traffic controllers are trained for CCO operation through compulsory annual simulator sessions. The new TMA structure and new procedures are expected to be published by Q1 2020, the controllers are going to be trained by Q4/2019.			30/01/2020

NAV12	Optimised Low-Level IFR Routes in TMA for Rotorcraft *Applicability and timescale: Local*	%	Not yet planned
-			
Hungary presently does not have intention to implement optimised Low-Level IFR Routes in TMA for Rotorcraft.			-

ANNEXES

Specialists involved in the ATM implementation reporting for Hungary

LSSIP Co-ordination

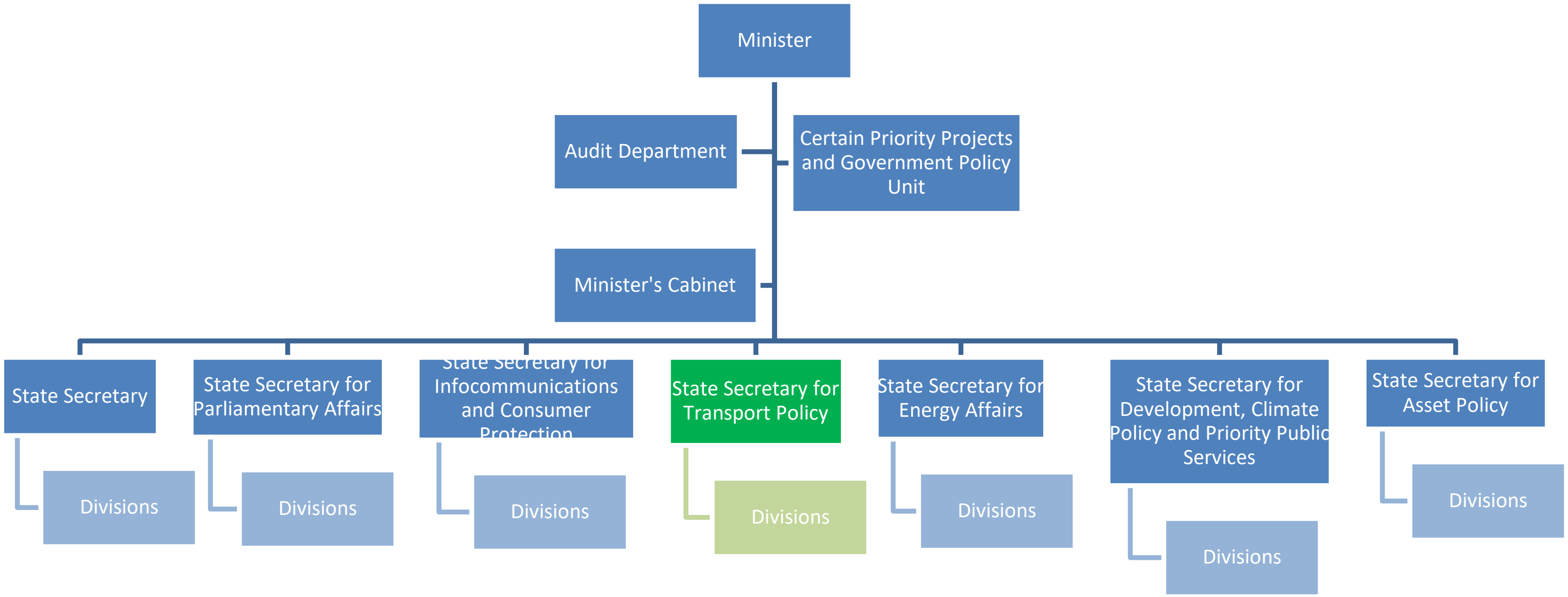
LSSIP Focal Points	Organisation	Name
LSSIP Focal Point for Hungary	HungaroControl	Barnabás KIS
LSSIP Focal Point for ASP	HungaroControl	Károly BRUNECKER
LSSIP Deputy Focal Point for ASP	HungaroControl	Gábor HETEI
LSSIP Point of Contact for REG/MIT/Department for Civil Aviation and Inland Navigation	MIT/Department for Civil Aviation and Inland Navigation	Erika DÉR
LSSIP Focal Point for REG/MIT/Department for Civil Aviation and Inland Navigation	MIT/Department for Civil Aviation and Inland Navigation	József Zoltán FARKAS
LSSIP Point of Contact for REG/MIT/ ANS and Aerodrome Supervisory Department	MIT/ ANS and Aerodrome Supervisory Department	István Temesi
LSSIP Focal Point for REG/MIT/Transportation Safety Bureau	MIT/Transportation Safety Bureau	István BELSŐ
LSSIP Focal Point for APO	Budapest Airport	Zoltán ORMÁNDI
LSSIP Focal Point for MIL	MoD	Lt. Gábor HORVÁTH

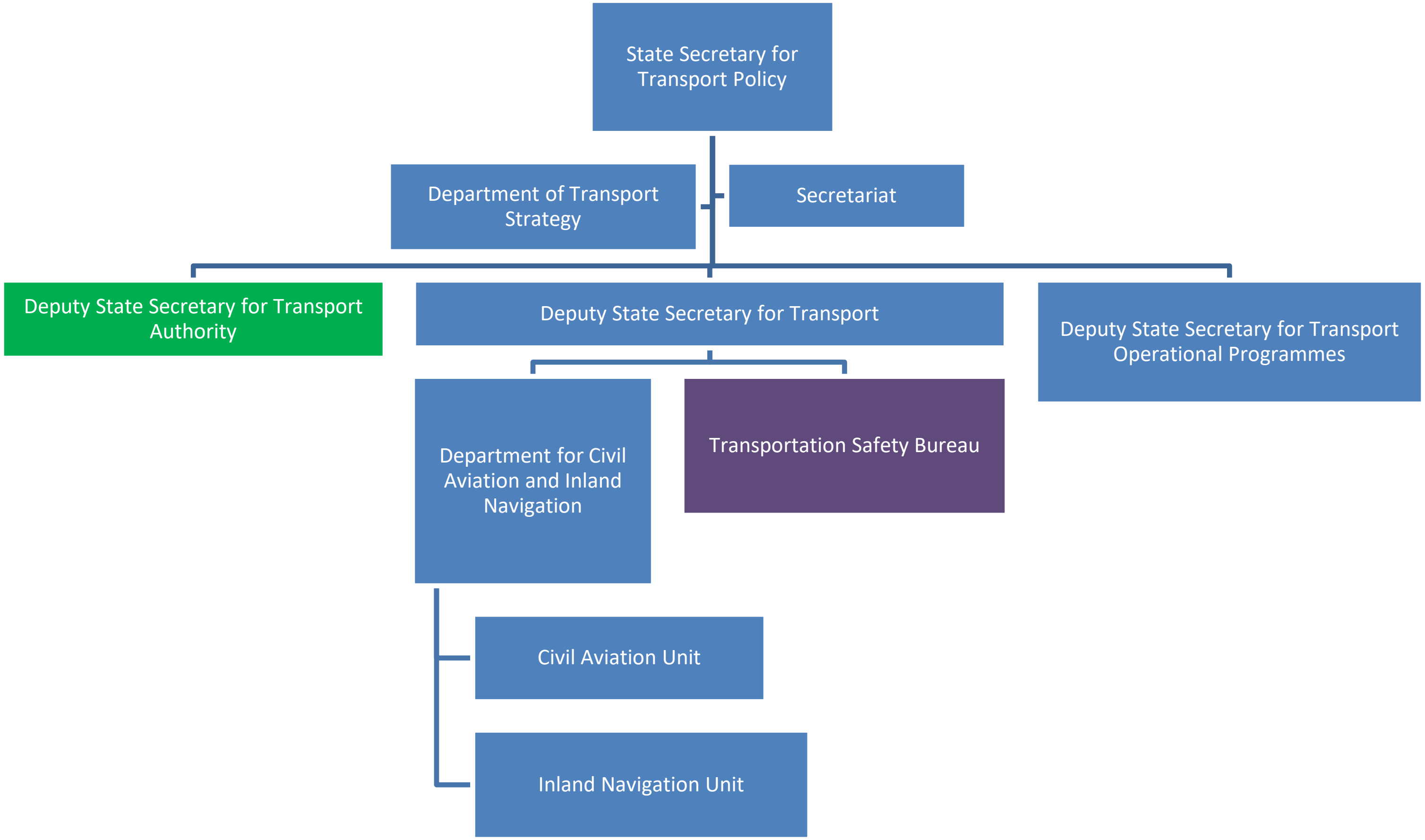
EUROCONTROL LSSIP Support

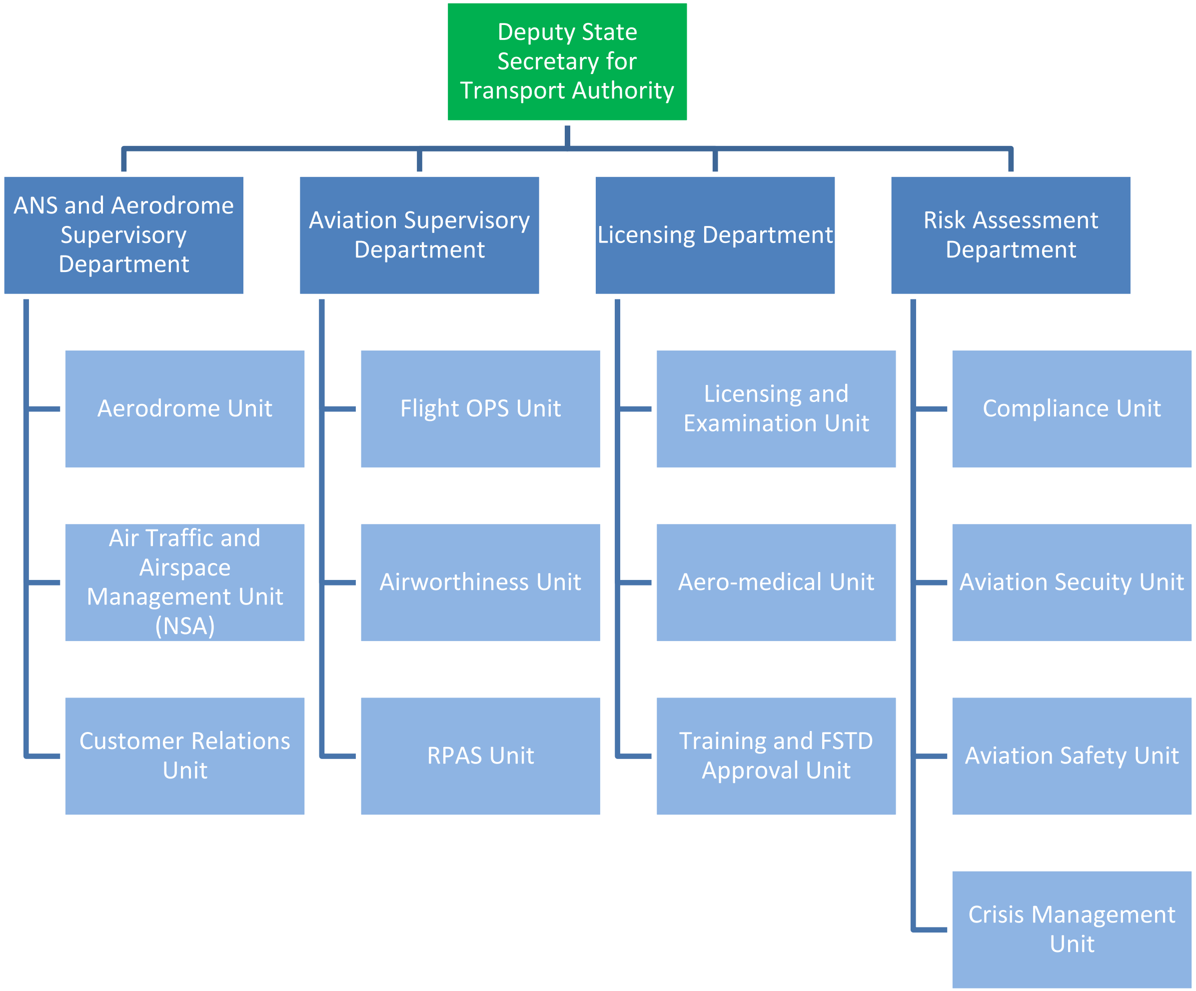
Function	Directorate	Name
LSSIP Contact Person	DECMA/ACS/PRM	Agnieszka DYBOWSKA

National stakeholders’ organisation charts

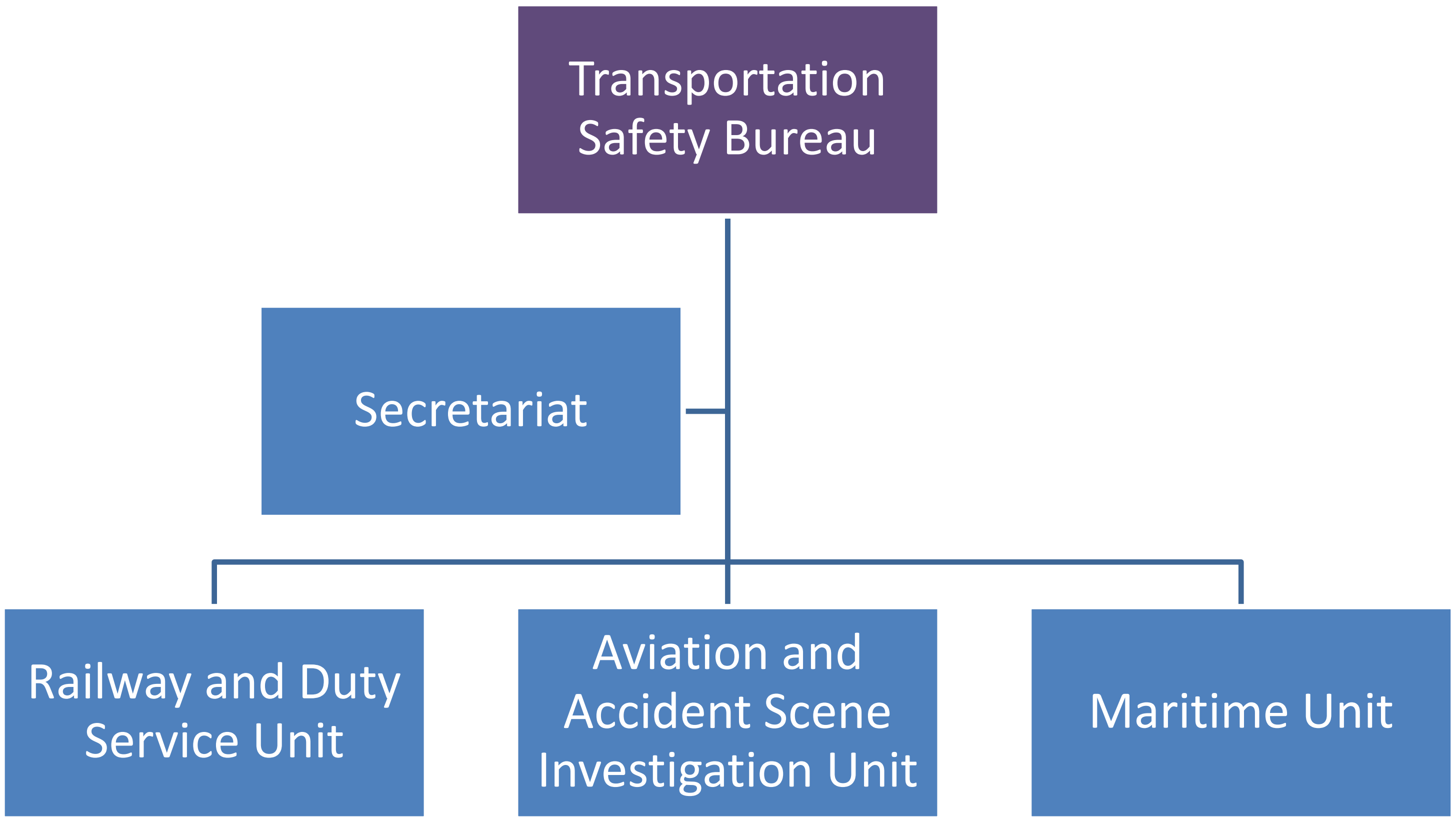
Ministry for Innovation and Technology



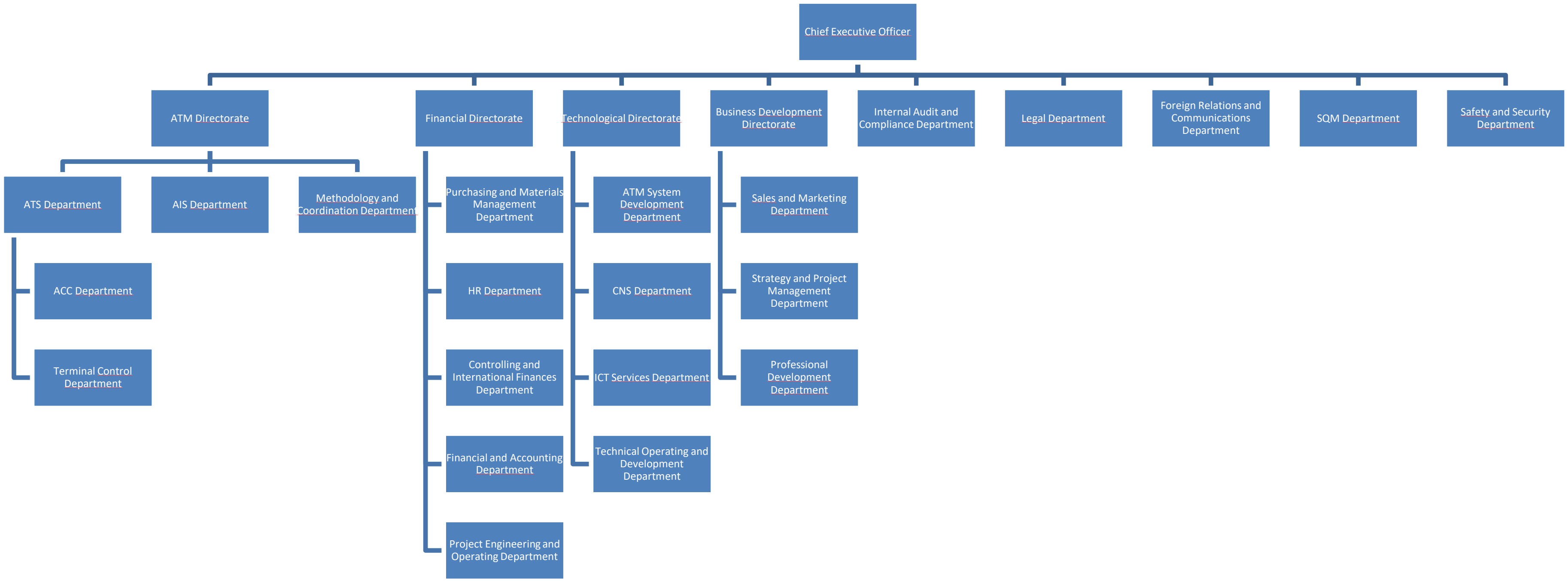

State Secretary for Transport Policy
Department of Transport Strategy
Secretariat
Deputy State Secretary for Transport Authority
Deputy State Secretary for Transport
Deputy State Secretary for Transport Operational Programmes
Department for Civil Aviation and Inland Navigation
Transportation Safety Bureau
Civil Aviation Unit
Inland Navigation Unit


Deputy State Secretary for Transport Authority
ANS and Aerodrome Supervisory Department
Aviation Supervisory Department
Licensing Department
Risk Assessment Department
Aerodrome Unit
Air Traffic and Airspace Management Unit (NSA)
Customer Relations Unit
Flight OPS Unit
Airworthiness Unit
RPAS Unit
Licensing and Examination Unit
Aero-medical Unit
Training and FSTD Approval Unit
Compliance Unit
Aviation Secuity Unit
Aviation Safety Unit
Crisis Management Unit

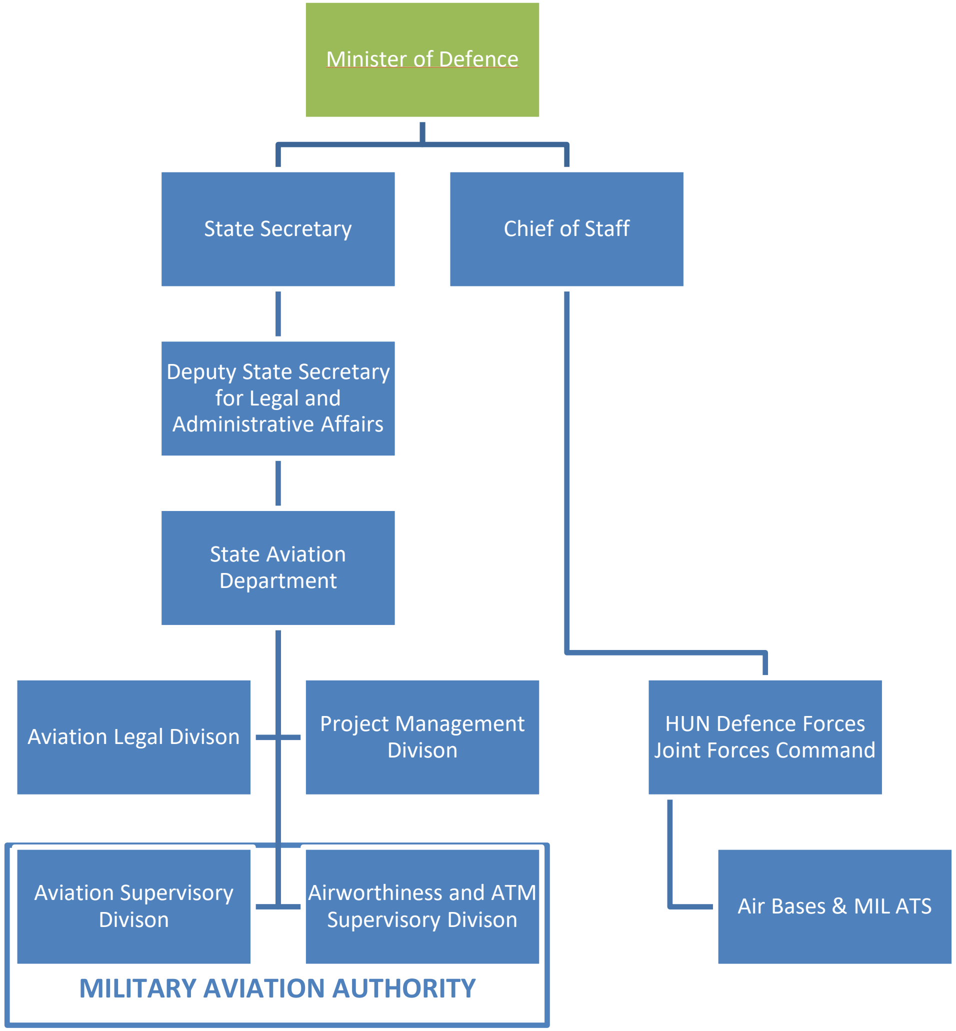
Transportation Safety Bureau (TSB)



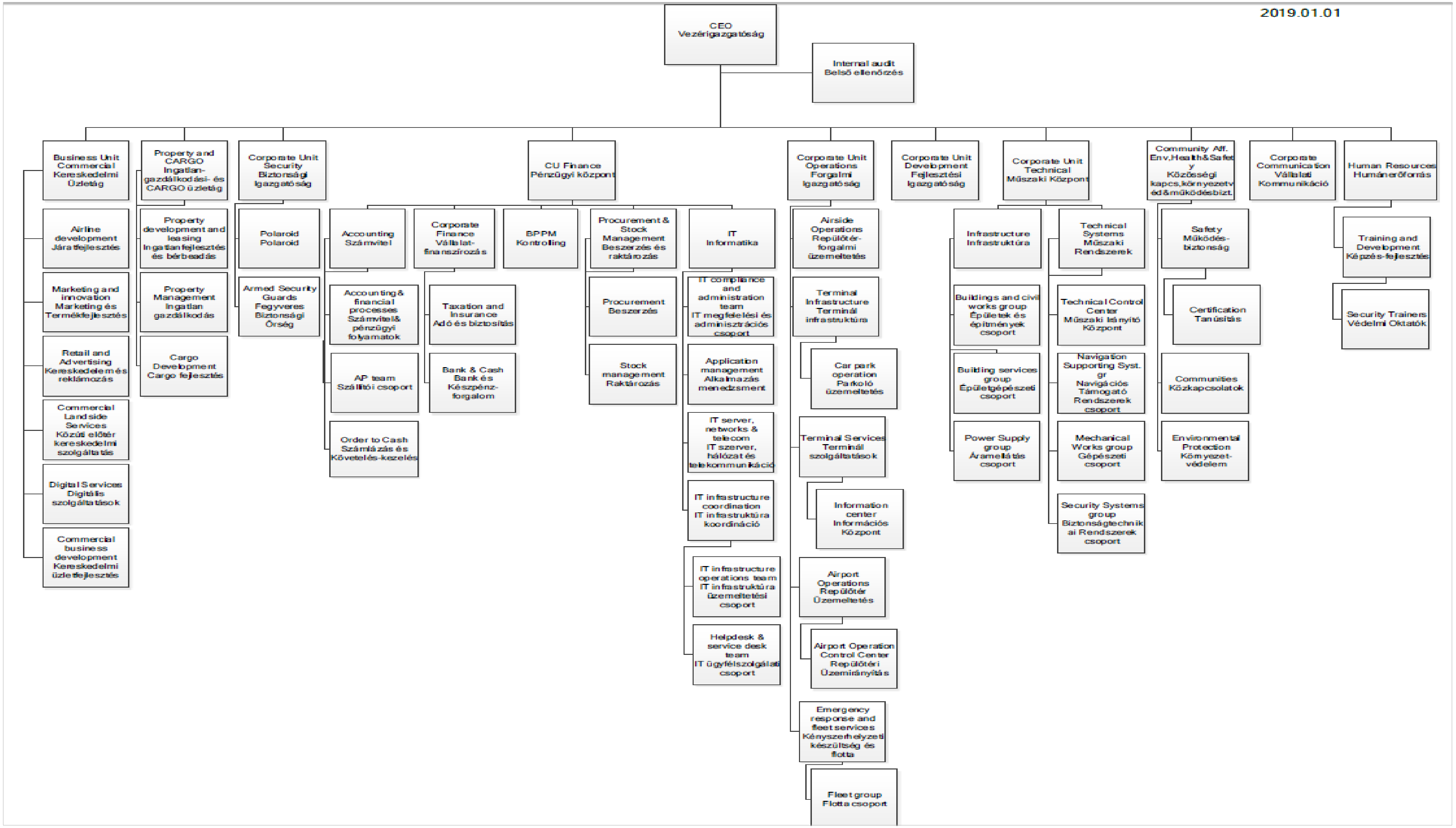
HungaroControl – Hungarian Air Navigation Services



The Hungarian Military Aviation Organisation



Budapest Liszt Ferenc International Airport



Implementation Objectives' links with SESAR, ICAO and DP

Objective	SESAR Key Feature	ICAO ASBU B0 and B1	DP Family
AOM13.1		-	-
AOM19.1		B1-FRTO B1-NOPS	3.1.1 ASM Tool to support AFUA
AOM19.2		B1-FRTO B1-NOPS	3.1.2 ASM management of real time airspace data
AOM19.3		B1-FRTO B1-NOPS	3.1.3 Full rolling ASM/ATFCM process and ASM information sharing
AOM19.4		B1-FRTO B1-NOPS	3.1.4 Management of dynamic airspace configurations
AOM21.1		B0-FRTO	-
AOM21.2		B1-FRTO	3.2.1 Upgrade of ATM systems to support Direct Routing and Free Routing 3.2.4 Implement Free Route Airspace
AOP04.1		B0-SURF	2.2.1 A-SMGCS level 1 and 2
AOP04.2		B0-SURF	2.2.1 A-SMGCS level 1 and 2
AOP05		B0-ACDM B0-RSEQ	2.1.1 Initial DMAN 2.1.3 Basic A-CDM
AOP10		B1-RSEQ	2.3.1 Time Based Separation (TBS)
AOP11		B1-ACDM	2.1.4 Initial Airport Operations Plan (AOP)
AOP12		-	2.1.2 Electronic Flight Strips (EFS) 2.5.1 Airport Safety Nets associated with A-SMGCS level 2 2.5.2
AOP13		B1-ACDM B1-RSEQ	2.4.1 A-SMGCS Routing and Planning Functions
AOP14		B1-RATS	-
ATC02.2		B0-SNET	-
ATC02.8		B0-SNET B1-SNET	3.2.1 Upgrade of ATM systems to support Direct Routing and Free Routing
ATC02.9		B0-SNET B1-SNET	-
ATC07.1		B0-RSEQ	1.1.1 Basic AMAN
ATC12.1		B1-FRTO	3.2.1 Upgrade of ATM systems to support Direct Routing and Free Routing
ATC15.1		B1-RSEQ	1.1.2 AMAN upgrade to include Extended Horizon function
ATC15.2		B1-RSEQ	1.1.2 AMAN upgrade to include Extended Horizon function
ATC16		B0-ACAS	-

ATC17		-	3.2.1 Upgrade of ATM systems to support Direct Routing and Free Routing
ATC18		-	No direct link, although implementation is recommended in Family 3.2.1
COM10		-	-
COM11		-	3.1.4 Management of Dynamic Airspace Configurations 3.2.1 Upgrade of systems (NM, ANSPs, AUs) to support Direct Routings (DCTs) and Free Routing Airspace (FRA)
COM12		B1-SWIM	5.1.2 NewPENS: New Pan-European Network Service 5.2.1 Stakeholders Internet Protocol Compliance
ENV01		B0-CDO B1-CDO	-
ENV02		-	-
ENV03		B0-CCO	-
FCM01		B0-NOPS	-
FCM03		B0-NOPS	4.2.3 Interface ATM systems to NM systems
FCM04.1		-	4.1.1 STAM phase 1
FCM04.2		B0-NOPS	4.1.2 STAM phase 2
FCM05		B1-ACDM B1-NOPS	4.2.2 Interactive Rolling NOP 4.2.4 AOP/NOP Information Sharing
FCM06		B1-NOPS	4.4.2 Traffic Complexity tools
FCM07		B1-NOPS	4.3.1 - Target Time for ATFCM purposes 4.3.2 - Reconciled target times for ATFCM and arrival sequencing
FCM08		B1-FICE	4.2.3 Interface ATM systems to NM systems
FCM09		B1-NOPS	-
INF04		B0-DATM	-
INF07		-	1.2.2 Geographical database for procedure design
INF08.1		B1-DATM B1-SWIM	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
INF08.2		B1-DATM B1-SWIM	5.1.3, 5.1.4, 5.2.1, 5.2.2, 5.2.3, 5.6.2
ITY-ACID		-	-
ITY-ADQ		B0-DATM	1.2.2 Geographical database for procedure design
ITY-AGDL		B0-TBO	6.1.1 ATN B1 based services in ATSP domain 6.1.3 A/G and G/G Multi Frequency DL Network in defined European Service Areas 6.1.4 ATN B1 capability in Multi Frequency environment in Aircraft Domain
ITY-AGVCS2		-	-
ITY-COTR		B0-FICE	-
ITY-FMTP		B0-FICE B1-FICE	-

ITY-SPI		B0-ASUR	-
NAV03.1		B0-CDO B0-CCO B1-RSEQ	-
NAV03.2		B1-RSEQ	1.2.3 RNP 1 Operations in high density TMAs (ground capabilities) 1.2.4 RNP 1 Operations (aircraft capabilities)
NAV10		B0-APTA	1.2.1 RNP APCH with vertical guidance 1.2.2 Geographic Database for procedure design
NAV12		B1-APTA	-
SAF11		-	-

Legend:

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

Glossary of abbreviations

This Annex mostly shows only the Abbreviations that are specific to the LSSIP Hungary.

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

https://www.eurocontrol.int/sites/default/files/content/documents/official-documents/guidance/Glossaries.pdf

Term	Description
AA	Aviation Authority
ACID	Aircraft Identification
AGVCS	Air Ground Voice Communication System
APV Baro	Approach Procedures with Vertical Barometric guidance
CAMP	Civil Aviation Master Plan
DAM	Dynamic Airspace Management
DCAIN	Department for Civil Aviation and Inland Navigation
DoV	Declaration of Verification
DP	Deployment Plan
EPC	Entry Point Central
A-WAM	Advanced Wide Area Multilateration
FRQ	Frequency
HDF JFC	Hungarian Defence Forces Joint Forces Command
HungaroControl	Hungarian ANSP
INF	Information Management
LSD	Large Scale Demonstration
MAA	Military Aviation Authority
MIT	Ministry for Innovation and Technology
MILAIS	Military Aeronautical Information Service
MIT	**Ministry for Innovation and Technology**
MO	Ministerial Order
MoND	Ministry of National Development
MP	Master Plan
MTMA	Military Terminal Manoeuvring Area
Multi-N	Multinational
NACB	National Airspace Co-ordination Board
NATO/PfP	NATO Partnership for Peace Programme
NTA AA	National Transport Authority Aviation Authority
PP	Performance Plan
REG	National Regulatory Authorities/NSAs
REV	Revision of Coordination

RMCA	Runway Monitoring and Conflict Alerting
SAF	Safety Management
SPI	Surveillance Performance and Interoperability
SQM	Safety and Quality Management
STAR	Standard Terminal Arrival Route
TF	Technical File
TSB	Transportation Safety Bureau

Mature SESAR Solutions not associated to an Implementation Objective

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where implementation is planned - If "N/A" please provide justification
		High Performing Airport Operations		
#01	Runway status lights	RWSL (RunWay Status Lights), a fully automatic system based on A-SMGCS surveillance that can be used on airports to increase safety by preventing runway incursions and associated operational procedures. The system directly provides the information on runway usage to the vehicle drivers and flight crews through new airfield lights.	N	N HungaroControl Hungarian Air Navigation Services has no plan to implement this SESAR Solution, neither Budapest Airport at least within the next 3 years.
#04	Enhanced traffic situational awareness and airport safety nets for vehicle drivers	Operational requirements and technical specifications to detect a risk of collision between a vehicle with aircraft and the infringement of restricted or closed areas. The Vehicle Driver is provided with the appropriate alert, either generated by the on-board system or uplinked from the controller airport safety net.	N	N HungaroControl Hungarian Air Navigation Services has no plan to implement this SESAR Solution, neither Budapest Airport in present traffic environment at least within the next 5-6 years.
#23	D-TAXI service for controller-pilot datalink communications (CPDLC) application	Use of data link communications between the Tower Controllers and the flight crew during surface movement. It is based on the D-TAXI service from the CPDLC application, as standardized by RTCA SC214/EUROCAE WG78 (DO-350 & DO-351). It also includes the access to this service for end users, through the Tower CWP for the ATCO and through the aircraft DCDU for the flight crew.	N	N HungaroControl Hungarian Air Navigation Services has no plan to implement this SESAR Solution before the implementation of D-Clearance

#47	Guidance assistance through airfield ground lighting	Enhanced Guidance Assistance to mobiles based on the automated switching of Taxiway lights and Stop bars according to the Airfield Ground Lighting (AGL) operational service Provision of flight crew and vehicle drivers with supplementary means of guidance based on coupling the taxi route management with the airfield ground lighting. Taxiway centerline lights are automatically and progressively switched on in segments as the mobile progresses along its assigned route. Stop bars are automatically activated to mark clearance limit. The ATCO can issue simpler and shorter taxi clearances through a "FOLLOW THE GREENS"-type instruction	N	N Only a "FOLLOW THE GREENS" demonstration is planned at the venue of HungaroControl Hungarian Air Navigation Services but no plan to implement this SESAR Solution. Budapest Airport has no plan to implement this SESAR Solution either since it would require installation of centerline lights at the Aprons and at some taxiways which is not planned within the next 3 years.
#48	Virtual block control in low visibility procedures (LVPs)	In low visibility conditions, the tower controller working positions are provided with Virtual Stop Bars (VSB) to improve low visibility operations and enhance controllers¿ situational awareness. Virtual Stop Bars can be used by the controller to reduce block-sizes once procedural control applies. Additional controller safety nets will be available to indicate violations of Stop Bars (including Virtual Stop Bars) and to monitor aircraft for any kind of unauthorized movement (Watch Dog).	N	N The Virtual Stop Bar feasibility and the related alarm function is included in the A-SMGCS system of HungaroControl Hungarian Air Navigation Services, but presently not used. The application of this SESAR Solution might be reconsidered In low visibility conditions when procedural control applies.
#54	Flow based integration of arrival and departure management	Integrated Arrival and Departure management aims at increasing throughput and predictability at an airport by improved co-ordination between En-route/Approach and Tower controllers. Arrival and Departure flows to the same runway (or for dependent runways) are integrated by setting up fixed arrival departure pattern for defined periods. The successive pattern might be chosen by the operators or provided by an optimization algorithm considering arrival and departure demand. Departure flow to the runway is managed by pre-departure sequencing (integrating route planning) while arrival flow to the runway is managed by arrival metering	N	N/A The traffic level in the foreseeable future does not justify the implementation of this SESAR solution, therefore HungaroControl Hungarian Air Navigation Services has no plan to implement it.

#55	[Precision approaches using GBAS Category II/III]	This SESAR Solution aims at improving Low Visibility Operation using GBAS Cat II/III based on GPS L1 The main benefit is the increased runway capacity in poor weather conditions as the glide path and azimuth signals will face hardly any interference from previous landing aircraft or other obstacles. More sustained accuracy in aircraft guidance on final approach. The GBAS is a precision approach system relying on GNSS signals and composed of ground and airborne segments. GBAS supports enhanced level of service for all phases of approach, landing and departure. GBAS CATII/III GPS L1 is the outcome of the extensive work in SESAR WP9 and 15 in addition to project 6.8.5 involving main European ground systems manufacturers and airborne industry. The solution is based on the existing single frequency GPS L1 signals and is considered as an initial GBAS CAT II/III solution as the final solution should make use of multi-constellation multi-frequency signals. The GBAS CATII/III L1 system should enable - Automatic Approach and Landing down to Cat III b minima for Mainline Aircraft - Automatic roll-out, DH < 50 ft down to no DH & RVR between 50m and 200m - Automatic Approach and Landing down to Cat II or Cat III a minima for Business and Regional Aircraft - 50 ft < DH < 200 ft & 200 m < RVR < 550m - CAT III b considerations for Business Aircraft for possible future use - Guided take-off is integrated in the reflexion	N	N HungaroControl Hungarian Air Navigation Services has no plan to implement this SESAR Solution, neither Budapest Airport within the next 5 years, because presently the approaches are based on ILS, VOR and RNAV and this will not be changed for medium and long term.
#61	[A low-cost and simple departure data entry panel for the airport controller working position]	The use of a simple Airport Departure Data Entry Panel (ADDEP) improves the integration of small regional airports by providing a low-cost solution to compute and share aircraft electronic pre-departure data to the ATM network, between the tower and approach controllers, as well as the tower and the Network Manager.	N	N/A Presently Budapest APP and TWR use the same FDP system.

#70	[Enhanced ground controller situational awareness in all weather conditions]	Enhanced Ground Controller Situation Awareness in all Weather Conditions further develops ADS-B applications in order to improve ground surveillance systems. The solution provides the controller with the position and automatic identity of all relevant aircraft and all relevant vehicles in the movement area (i.e. manoeuvring area plus apron).	Y This SESAR Solution is implemented at LHBP. The ADS-B based identification of aircraft is not used due to the inaccuracy, only vehicles are identified based on ADS-B.	N
#116	[De-icing management tool]	The solution increases the accuracy of information related to when the procedure is going to take place, how long it will take and when the aircraft will be ready to taxi for departure, which is currently calculated by predetermined estimates. The solution means that air traffic controllers no longer need to work without situational awareness of de-icing activities and needing to make their own estimates of when aircraft are ready for departure. The solution envisages that de-icing operations are no longer characterized by the A-CDM concept as 'adverse conditions', i.e. a state that is in need of collaborative recovery procedures, but rather a part of normal operations in the winter period. The DIMT allows for the scheduling and monitoring of de-icing operations. It is an internet browser-based tool that addresses three distinct procedures for de-icing: - Remote de-icing, which occurs at a specific location on the airport away from the parking stand; - On-stand de-icing, which occurs just before the aircraft leaves its stand; and - After-push de-icing, which occurs after the aircraft has pushed back from the stand and is positioned to start taxiing after de-icing.	N	Y Budapest Airport plans to implement the monitoring function of de-icing operations as part of A-CDM within 3 years.

Advanced Air Traffic Services

#06	Controlled time of arrival (CTA) in medium-density/medium-complexity environments	The CTA (Controlled Time of Arrival) is an ATM imposed time constraint on a defined point associated with an arrival runway, using airborne capabilities to improve arrival management. When a time constraint is needed for a flight, the ground system may calculate a CTA as part of the arrival management process, and then it may be proposed to the flight for achievement by avionics within required accuracy. Airborne information may be used by the ground system in determining the CTA (e.g. ETA min/max) and in monitoring the implementation of the CTA.	N	N
#08	Arrival management into multiple airports	The system provides support to coordination of traffic flows into multiple airports to enable a smooth delivery to the runways. The 'Centre Manager' (CMAN) which accompanies the AMANs of the airports generates a combined planning for several arrival streams into different airports by calculating the sequence of aircraft flying towards an area where their routes intersect. By imposing an adequate spacing of the aircraft in that area, a Time To Lose (TTL) for the appropriate upstream E-TMA sector is calculated to meet this constraint. Both AMAN-TTL for the runway and TTL for the E-TMA sector are superimposed and presented to the upstream en-route sector controllers.	N	N/A There is no multiple airports operation in Hungary.
#10	Optimised route network using advanced RNP	Based on Advanced-RNP navigation specification, design of optimized routes e.g spaced parallel routes, Fixed Radius Transition (FRT) and Tactical Parallel Offset (TPO) further enhanced by onboard performance monitoring and alerting and the execution of more predictable aircraft behaviour	N	N/A Free route operation has been introduced in Budapest FIR since 2015, and all ATS routes have been eliminated.
#11	Continuous descent operations (CDO) using point merge	Progressive implementation of procedures for Continuous Descent Operations (CDO) and Continuous Climb Operations (CCO) in higher density traffic or to higher levels, optimized for each airport arrival/departure procedure	Y CDO and CCO are implemented at LHBP	

#69	Enhanced STCA with down-linked parameters	STCA (Short Term Conflict Alert) is a ground-based system designed and deployed to act as a safety net against collisions. The system, which can be used in both en-route and TMAs, generates an alert to warn air traffic controllers for when separation minima between aircraft have been infringed upon. The system makes use of down-linked aircraft parameters (DAP) available through Mode S EnHanced Surveillance (EHS) (i.e. Selected Flight Level, Roll angle/Track angle rate) are to increase the reliability and accuracy of the alerts.	N STCA is used in LHCC ACC and in LHBP TMA, but DAPs are not used by the STCA algorithms, only CFLs.	N HungaroControl Hungarian Air Navigation Services presently has no plan to implement this SESAR Solution.
#105	Enhanced airborne collision avoidance system (ACAS) operations using the autoflight system	New altitude capture laws aim to reduce unnecessary ACAS alarms and reduce the risk of mid-air or near mid-air collisions between aircraft as a last-resort safety net, by automatically reducing the vertical rate at the approach of the selected flight level (only when a Traffic Advisories-TA occurs), leading to less traffic perturbation, while not increasing flight crew workload.	N	N/A This is not a ground based tool.
#107	Point merge in complex terminal airspace	This new procedure design builds upon precision navigation technology (P-RNAV concept) for merging traffic into a single entry point, which allows efficient integration and sequencing of inbound traffic together with Continuous Descent Approaches (CDA).	Y Implemented at LHBP	
#108	Arrival Management (AMAN) and Point Merge	Point Merge in high density environment and complex Extended TMA (E-TMA) sectors replaces radar vectoring with a more efficient and simplified traffic synchronization mechanism that reduces communication workload and increases collective traffic predictability.	N	N/A AMAN is not mandatory at LHBP by the PCP Regulation, and the level of traffic does not require its implementation.

		Optimised ATM Network Services		
#57	User-driven prioritisation process (UDPP) departure	Airspace Users are allowed to change among themselves (via the pre-departure management process in CDM airports) the priority order of flights in the pre-departure sequence. The departure time will be automatically communicated/coordinated with the Network Management Function (NMF) via the DPI message as described in the A-CDM concept.	N	N
		Enabling Aviation Infrastructure		
#34	Digital Integrated Briefing	The current pre-flight briefing for the pilot includes pages of information, called notice to airmen (NOTAM), recent weather reports and forecasts (MET), which have to be integrated into a consolidated operational picture. The documents can be difficult for pilots to use, and no longer satisfy today's air traffic needs for timely and accurate aeronautical and meteorological information updates. By introducing digital NOTAM and MET data, the briefing could be radically improved.	Y NetBriefing has been implemented by 09/01/2018 at least for LHCC airspace users. The service available on the www.netbriefing.hu URL	Y The NetBriefing is planned to be further developed parallel with SWIM implementation and services. Presently the AIXM and B2B LARA are compatible with the SWIM services
#67	AOC data increasing trajectory prediction accuracy	Europe's vision to achieve high-performing aviation by 2035 builds on the idea of trajectory-based operations – meaning that aircraft can fly their preferred trajectory while minimizing constraints due to airspace and service configurations. SESAR has introduced an early version which makes use of flight planning data sourced from airline operational control (AOC) to help controllers optimize aircraft flight paths. This solution represents an initial step towards the extended flight plan solution and flight and flow information for a collaborative environment (FF-ICE).	N	N
#100	ACAS Ground Monitoring and Presentation System	The ACAS provides resolution advisories (RAs) to pilots in order to avoid collisions. Controllers rely on pilots to report RAs by radio as they occur in accordance with ICAO regulations. However these reports can come late, incomplete or are absent in some instances. This solution consists of a set of	Y ACAS RAs as part of DAP available through Mode S EnHanced Surveillance (EHS) displayed at all LHCC ACC, LHBP	

		monitoring stations and a server system, which enable the continuous monitoring and analysis of ACAS RAs and coordination messages between airborne units from the ground.	TMA sectors for controllers.	
#101	Extended hybrid surveillance	This solution consists of an enhanced TCAS capability, adding passive surveillance methods and reducing the need for active Mode-S interrogations. By making fewer active interrogations, this solution allows the aircraft to significantly reduce the usage of the 1090 MHz frequency.	N	N/A It is an airborne capability.
#102	Aeronautical mobile airport communication system (AeroMACS)	The aeronautical mobile airport communication system (AeroMACS) offers a solution to offload the saturated VHF datalink communications in the airport environment and support new services. The technical solution AeroMACS is based on commercial 4G technology and uses the IEEE 802.16 (WiMAX) standard. Designed to operate in reserved (aeronautical) frequency bands, AeroMACS can be used for ANSPs, airspace users and airport authority communications, in compliance with SESAR's future communication infrastructure (FCI) concept. AeroMACS is an international standard and supports globally harmonized and available capabilities according to ICAO Global Air Navigation Plan (GANP).	N	N HungaroControl Hungarian Air Navigation Services has no plan to implement this SESAR Solution.
#109	Air traffic services (ATS) datalink using Iris Precursor	The Iris Precursor offers a viable option for ATS datalink using existing satellite technology systems to support initial four-dimensional (i4D) datalink capability. The technology can be used to provide end-to-end air–ground communications for i4D operations, connecting aircraft and air traffic management ground systems.	N	N HungaroControl Hungarian Air Navigation Services has no plan to implement this SESAR Solution.
#110	ADS-B surveillance of aircraft in flight and on the surface	The SESAR solution consists of the ADS-B ground station and the surveillance data processing and distribution (SDPD) functionality. The solution also offers mitigation techniques against deliberate spoofing of the ground system by outside agents. These techniques can also be used to cope with malfunctioning of avionics equipment. SESAR has contributed to the relevant standards, such as EUROCAE	Yes. ADS-B test station installed, ADS-B data present in off-line test ATM system. ATM system capable of ADS-B processing and display. MLAT (part of A-SMGCS at LHBP) is ADS-B capable.	

		technical specifications, incorporating new functionalities developed for the ADS-B ground station, ASTERIX interface specifications as well as to the SDPD specifications.	ADS-B info used for vehicles only.	
#114	Composite Surveillance ADS-B / WAM	By allowing the use of ADS-B data that has been validated against data derived in parallel by a WAM system, the system can help to reduce the number of interrogations and number of replies and therefore reduce the 1030/1090 MHz RF load and improve spectrum efficiency. It achieves this through the integration of validated data items into the WAM channel, thereby preventing a need to re-interrogate the data item. Since the two surveillance layers share hardware components, the system offers improved cost efficiency. Furthermore, the use of the system contributes to an improved security by successfully mitigating associated ADS-B threats. SESAR has contributed to the relevant standards, such as EUROCAE technical specifications for WAM and ADS-B that are implementing this “composite” concept.	N	N