25 YEARS of ATM Implementation Reporting in Europe

EUROCONTROL

LSSIP 2018
EURO-MAASTRICHT
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!



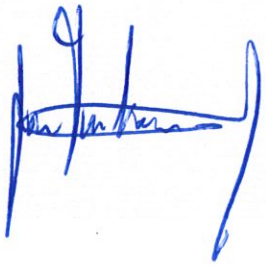
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Reference Documents	
LSSIP Documents	http://www.eurocontrol.int/articles/lssip
LSSIP Guidance Material	http://www.eurocontrol.int/articles/lssip
Master Plan Level 3 – Plan Edition 2018	http://www.eurocontrol.int/articles/european-atm-master-plan-level-3-implementation-plan
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
FAB Performance Plan	https://www.fabec.eu/performance/performance-plan

APPROVAL SHEET

The following authorities have approved all parts of the LSSIP Year 2018 document and their signature confirms the correctness of the reported information and reflects 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
4-States Representative	Mr Paul van Gurp	Head ATM Unit Ministry of Infrastructure and Water Management – Directorate-General for Mobility and Transport	
ATS Provider Maastricht UAC	Mr John Santurbano	Director Maastricht UAC	

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Specialists involved in the ATM implementation reporting for MUAC

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Executive Summary

National ATM Context

The provision of ATS and operation of facilities at Maastricht UAC is based on the "Agreement relating to the Provision and Operation of Air Traffic Services and Facilities by EUROCONTROL at the Maastricht Area Control Centre" (the "Maastricht Agreement"), signed on 25 November 1986 by Belgium, Germany, Luxembourg, the Netherlands and EUROCONTROL. The EUROCONTROL Organisation provides ATS to GAT at Maastricht UAC within the airspace entrusted to it by the four States, subject to the conditions defined in the Agreement.

As of 1 January 2017, MUAC is providing ATS to OAT in the Hannover UIR on behalf of Germany. On 27 April of that same year, the Netherlands have entrusted MUAC with OAT provision in the Amsterdam FIR above FL245.

According to Article 15 of the Amended Convention, service provision is undertaken in accordance with the national regulations in force on the respective territories and airspaces concerned.

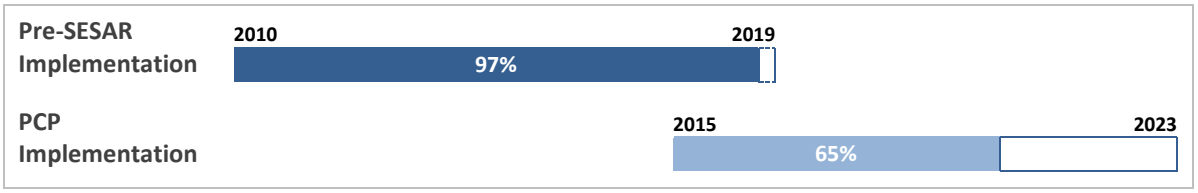
Traffic and Capacity

Traffic in Maastricht UAC increased by 0.3% during Summer 2018 (May to October inclusive), when compared to Summer 2017. However, there are significant differences between the sector groups. For the whole of 2018, traffic growth in the Brussels sector group was 1.9%; for the Hannover sector group this was 0.8% whereas the growth in DECO stood at 5.2%.

Progress per SESAR Phase

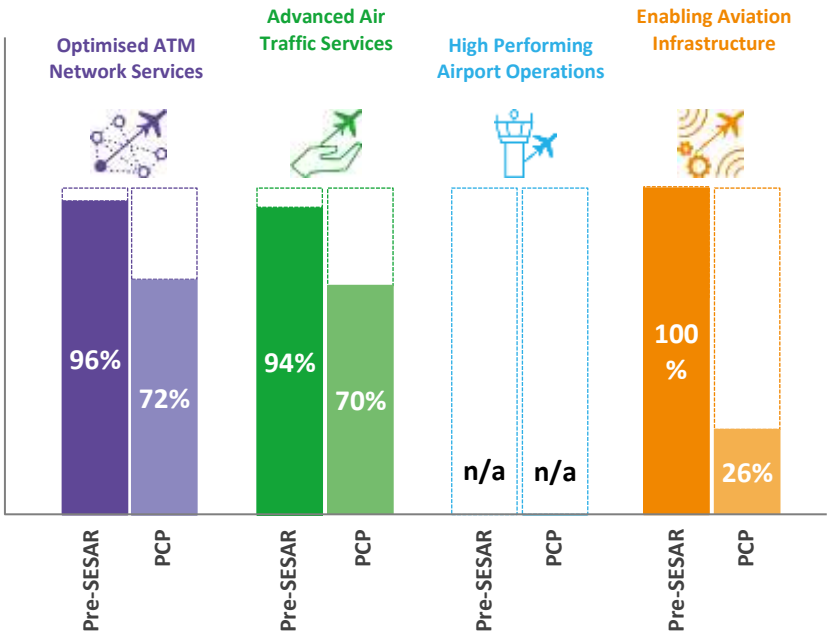
The figure below shows the progress made so far in the implementation of the SESAR baseline and the PCP elements. The percentage is calculated as an average of the relevant objectives as shown in Chapter 6.1 (PCP objectives are marked as such, the rest are considered SESAR baseline); note that two objectives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



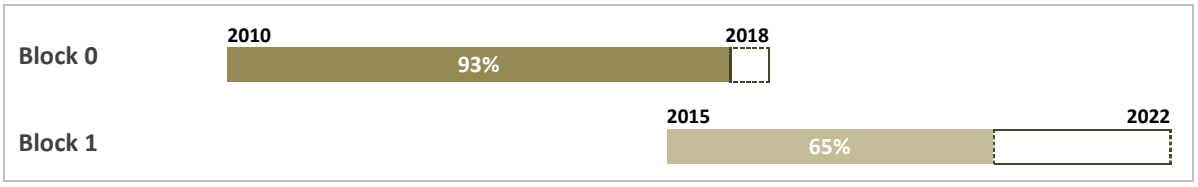
Progress per SESAR Key Feature and Phase

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:**	**- Real-Time Airspace Data** [AOM19.2] 100% progress **- Voice over IP** [COM11] 100% progress **- STAM Phase 2** [FCM04.2] 100% progress

By 12/2019	By 12/2020	By 12/2021	2022+
- Collaborative Flight Planning [FCM03] 82% progress **- NewPENS** [COM12] 20% progress	**- Coordination and transfer** [ATC17] 62% progress **- Free Route Airspace** [AOM21.2] 34% progress **- Pre-defined Airspace Configurations** [AOM19.4] 5% progress		**- AMAN to further en-route** [ATC15.2] 47% 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

This paragraph is not applicable to Maastricht UAC. This information is made available in the respective LSSIP documents of each of the four States.

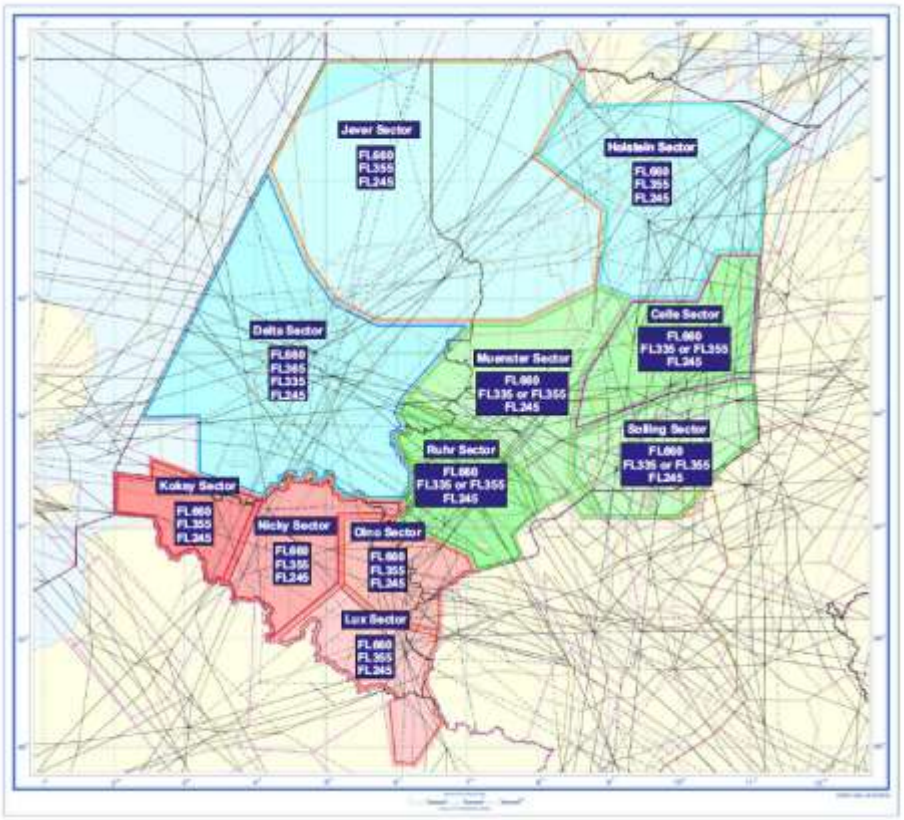
Geographical description of the FIR(s)

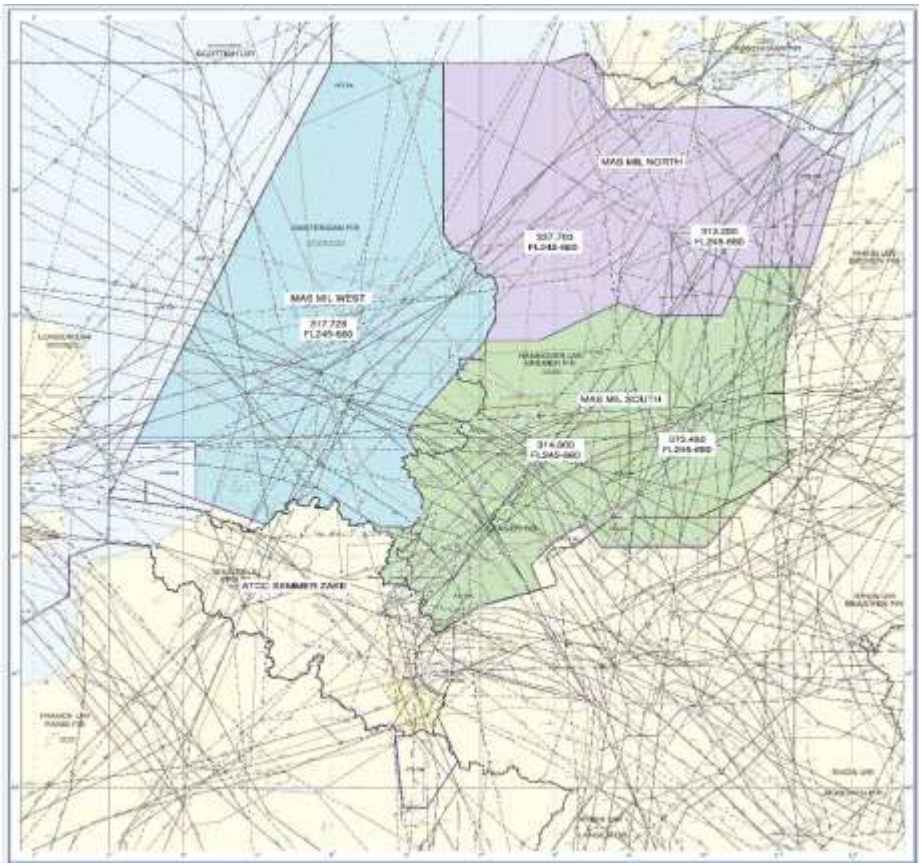
The geographical scope of this document addresses the Maastricht UAC Area of Responsibility comprising the following Control Areas:

Airspace Designation	Vertical Limits	ICAO Airspace Classification	Airspace sector group of Maastricht UAC
Belgium & Luxembourg - Brussels UIR	FL245 to FL660	C	Brussels
The Netherlands - Amsterdam FIR	FL245 to FL660	C	DECO
North West Germany - Hannover UIR	FL245 to FL660	C	Hannover

The Maastricht UAC Area of Responsibility is surrounded by London UIR, Copenhagen FIR, Rhein UIR and France UIR.

The maps below show the situation of Maastricht upper airspace in winter 2018 and its civil and military sectorisation.


Jever Sector
FL660
FL355
FL245
Holstein Sector
FL660
FL355
FL245
Delta Sector
FL660
FL365
FL335
FL245
Munster Sector
FL660
FL335 or FL355
FL245
Celle Sector
FL660
FL335 or FL355
FL245
Ruhr Sector
FL660
FL335 or FL355
FL245
Schiling Sector
FL660
FL335 or FL355
FL245
Kokay Sector
FL660
FL355
FL245
Nicky Sector
FL660
FL355
FL245
Olmo Sector
FL660
FL355
FL245
Lux Sector
FL660
FL365
FL245


MAS MIL NORTH
MAS MIL WEST
MAS MIL SOUTH

Airspace Classification and Organisation

All the airspace serviced by Maastricht UAC is ICAO Class C (above FL 245).

ATC Units

The only ATC unit of concern to this LSSIP is Maastricht UAC, currently configured for operating a maximum of 23 en-route sectors (Brussels: 6, DECO: 6, Hannover: 8, Mil 3). Additionally, three special operations positions are available.

ATC Unit	Number of sectors		Associated FIR(s)	Remarks
	En-route	TMA		
MUAC	23	0	Brussels FIR/UIR Amsterdam FIR Hannover UIR Delegation in: France UIR Rhein UIR	

1.2. National Stakeholders

Civil Regulator(s)

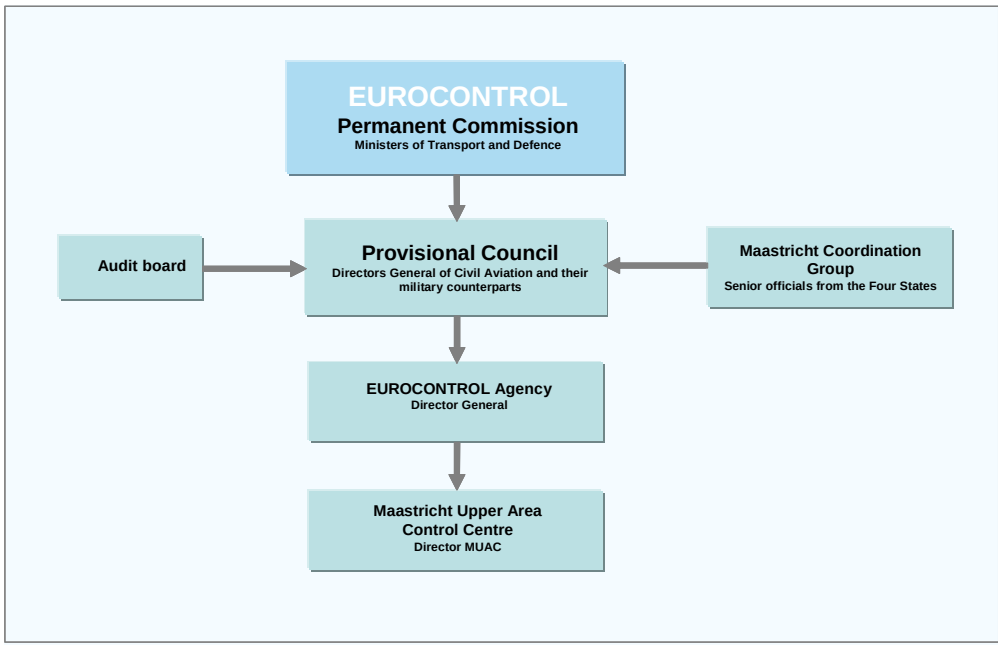
General Information

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As of 1 January 2017, MUAC is providing ATS to OAT in the Hannover UIR on behalf of Germany. On 27 April 2017, the Netherlands have entrusted MUAC with OAT provision in the Amsterdam FIR above FL245.

According to Article 15 of the Amended Convention, service provision is undertaken in accordance with the national regulations in force on the respective territories and airspaces concerned.

The four States regulators in respect of ATS provided at Maastricht UAC are represented by the respective Ministries of Transport or equivalent ministries for GAT and the German and Dutch Ministries of Defence for OAT. The Maastricht Coordination Group (MCG) joins together senior officials of the four States. The high-level relationship between the entities dealing with Maastricht UAC is presented in the diagram below. More information on the relevant national stakeholders in each of the four concerned States is presented in the respective LSSIP Level 1 documents.



Regulatory Activity

ATS provision at Maastricht UAC is subject to four different national regulatory regimes, each specifically defining applicable rules and regulations. Regulation and oversight of service provision performed at Maastricht UAC is exercised in a coordinated manner among the four concerned States. ATS provision at Maastricht UAC is subject to the Single European Sky (SES) legislation; SES certification as an Air Traffic Service Provider was obtained in November 2006.

The four States regulators and their respective NSAs, which are institutionally separated from the EUROCONTROL Organisation of which MUAC is an integral part, have set-up appropriate arrangements to establish common rules for ATS provision at Maastricht UAC and to ensure adequate regulatory oversight. With the incorporation of OAT service provision with the Amsterdam FIR and Hannover UIR, the regulatory and supervisory task related to these activities have been incorporated by enlarging the national input of NL and GE including the military authorities.

Meetings with MoT and MoD representatives take place on an ad-hoc basis.

The table below summarises the main regulatory and supervisory responsibilities/activities in respect of service provision performed at Maastricht UAC.

Activity in ATM:	Organisation responsible	Legal Basis
Rule-making	The 4 States' regulators (Ministries of Transport or equivalent and Ministries of Defence from GE and NL)	The 4 States' national laws, the EUROCONTROL Convention and the Maastricht Agreement
Safety Oversight	ILT (CAA-NL), in coordination with the other 3 States' NSAs (incorporating the MAA of NL) within the 4 States' NSA Committee For OAT, the Military Aviation Authority (MAA)	The NL Aviation Act and other relevant NL national regulations empowering ILT (CAA-NL) as regards safety oversight. See details in LSSIP NL.
Enforcement actions in case of non-compliance with safety regulatory requirements	ILT (CAA-NL), in cooperation with the other 3 States' NSAs, within the 4 States' NSA Committee For OAT, the Military Aviation Authority (MAA)	The NL Aviation Act and other relevant national regulations empowering ILT (CAA-NL) as regards safety oversight of the NL-based ANS/ATM providers. OAT service provision accreditation in the Netherlands is based on the Military Aviation Requirements (MAR).
Airspace	The 4 States' relevant regulatory authorities, each per its own territory and concerned airspace	The 4 States' relevant national laws, the EUROCONTROL Convention and the Maastricht Agreement
Economic	Same as above	Same as above
Environment	Same as above	Same as above
Security	Same as above	Same as above
Accident investigation	Same as above for GAT For OAT, the MAA	Same as above

Annual Report published:	Y	https://www.rijksoverheid.nl/documenten/rapporten/2018/05/16/jaarverslag-2017

National Civil Aviation Master Plan (CAMP):	N	

The website of the Human Environment and Transport Inspectorate is: https://english.ilent.nl.

Supervision of service provision at Maastricht UAC

Subsequent to the enactment of the SES framework regulation (Regulation (EC) No. 549/2004), the four States have each established an NSA:

- for Belgium, the Belgian Supervising Authority for ANS (BSA-ANS);
- for Germany, the Federal Supervisory Authority for Air Navigation Services (Bundesaufsichtsamt für Flugsicherung, BAF);
- for Luxembourg, the Civil Aviation Authority CAA Luxembourg; and
- for the Netherlands, the Human Environment and Transport Inspectorate (Inspectie Leefomgeving en Transport, ILT) of the Ministry of Infrastructure and Water Management.

The SES-certifying National Supervisory Authority, as per the service provision Regulation, is the Human Environment and Transport Inspectorate of the Ministry of Infrastructure and Water Management of the Netherlands. EUROCONTROL for its service provision at Maastricht UAC located on Netherlands territory was certified as an ATS provider by the Netherlands NSA in accordance with (EC) Regulation 550/2004 and in cooperation with the other three States' NSAs. Information on the organisation and relevant activities of ILT (CAA-NL) and of the other three States' NSAs is available in the respective LSSIP documents.

The 4 States NSAs have established two supporting bodies for ongoing oversight of service provision at Maastricht UAC:

- The NSA Committee (NSA-C), representing all four NSAs and having a co-ordination and advisory role for the relevant decision making authorities on oversight issues; and
- The Common Supervisory Team (CST), which is composed of staff of the co-operating NSAs and has an executive role in performing document studies, audits, inspections, etc.

A manual for the oversight activities at Maastricht UAC has been developed and agreed upon, by the four NSAs, last updated (version 9) 10-10-2018.

The Belgian Civil Aviation Authority (Belgian CAA), acting on behalf of the four States NSAs, is responsible for issuing licenses for Air Traffic Controllers (ATCOs) at Maastricht UAC. The following agreement was reached between the 4 States:

- The Belgian CAA acts as the licensing authority for ATCOs and students ATCOs;
- The Belgian CAA is the authority for certification of ATS training organisation at Maastricht UAC;
- The licences are issued in accordance with the Commission Regulation (EU) No 2015/340 laying down technical requirements and administrative procedures relating to air traffic controllers' licences and certificates.

Maastricht UAC was certified 13 December 2016 as an ATCO Training Organisation (ATCO TO) by the Belgian CAA pursuant to Commission Regulation (EU) 2015/340.

Certificates of Competency (en-route and special) were issued to Maastricht UAC ATCOs for handling OAT and MUAC was awarded the necessary accreditation for OAT services.

Designation as an ANSP

Provision and operation of ATS at Maastricht UAC is governed by the Maastricht Agreement.

Subsequent to the SES certification of service provision at Maastricht UAC and in accordance with Article 8 of Regulation (EC) No. 550/2004 (the service provision Regulation), each of the 4 signatory States to the Maastricht Agreement must designate a SES-certified ATS-provider for the airspace block(s) serviced by MUAC.

In the Netherlands, by amendment to the Aviation Act in Oct 2007, EUROCONTROL for its service provision at Maastricht UAC has been designated as an ATS provider in accordance with Article 8 of the service provision Regulation. On 27 April 2017, MUAC was accredited Air Navigation Service Provider for the handling of Operation Air Traffic within the Amsterdam Flight Information Region above flight level 245. The accreditation process was performed within the scope of the Military Aviation Requirements for the provision of Air Navigation Services (MAR ANS). The accreditation process included an audit, by the Dutch Military Aviation Authorities MAA-NLD. The other three States, Belgium, Germany and Luxembourg, consider the Maastricht Agreement as a valid means for their respective designations of EUROCONTROL as an ATS provider at Maastricht UAC.

At its 74th meeting, the Maastricht Coordination Group agreed on the development of an adequate legal basis for the provision of cross-border ATS, on the basis of Article 10 of (EC) Regulation No. 550/2004.

The Agreement between the FABEC ANSPs concerning the provision of ANS within the FABEC airspace, which was signed early 2013, will serve as a legal “umbrella” for the existing operational Letters of Agreement concluded between MUAC and the neighbouring ANSPs.

Services provided

Governance:	Four-States agreement	**Ownership:**	EUROCONTROL Member States
Services provided	**Y/N**	**Comment**	
ATC en-route	Y	4 States (BE, DE, LU, NL) Upper Airspace	
ATC approach	N/A	N/A	
ATC Aerodrome(s)	N/A	N/A	
AIS	N	-	
CNS	Y	-	
MET	N	-	
ATCO training	Y	Since 2015 initial training is provided by ENAC, based in Toulouse. Ab Initio course 69 started in May 2015. All students 8 passed the initial training (basic + rating). 7 passed the Pre-Transition (additional) module in ENAC and started the Unit Training in MUAC in July 2016. All 7 passed the transition and pre-OJT successfully. All 7 have been checked out positively. Ab initio course 70 started in March 2017 at ENAC and 9 out of 10 students are in the OPS room since October 2018. Ab initio course 71 is in the simulator, started at MUAC mid-August 2018, they initially started with 15 students, one failed at ENAC and another two have to undergo remedial training. Currently 12 students of this course doing training in the simulator, since end-November 2018. Beginning of March 2018, ab initio 72 started with 10 students at ENAC, of which 2 have meanwhile failed. Another course of 16 students started with ab initio 73 in October 2018. The recruitment for ab initio 74, a course of 10, was recently finished. The adapted unit training of former DFS ATCOs - LIPPE - conversion course (LC) number one ended positively in January, the ATCOs do their On-the-job-training since February 2018, all of them have had their positive checkout on the Hannover West unit endorsement. Between January and May 2018, the second LC course with two students has undergone adapted unit training in simulator environment. They started their on-the-job training in May 2018 – one has been checked out in December already. LC3 is	

		planned for 30th of September 2019 to end in January 2020 (followed by OJT). All required approvals for the Special GAT unit endorsement training for MAS-MIL have been obtained. Theory classes will be delivered in the first half of 2019. Checkouts in the operations-room can be expected as of the second half of 2019. Because MOAT training has still to be delivered to the BRUS sector group, it was decided to deliver that in Q1 2020, Full-COC training is postponed until quarter four 2020.
Others	-	-
Additional information:		
Provision of services in other State(s):	Y	Refer to section "ATC Units" below
Annual Report published:	Y	https://www.eurocontrol.int/articles/maastricht-upper-area-control-centre-muac-publications

The public website of MUAC is: https://www.eurocontrol.int/muac.

The MUAC organisation chart is available in the Annex.

ATC systems in use

Main ANSP part of any technology alliance[1]	N	N/A

Specify the manufacturer of the ATC system currently in use:	The major suppliers of the ATC systems are: For air traffic flow management: EUROCONTROL/NM For air traffic services: INDRA (FDPS), Thales ATM (HMI) and EUROCONTROL (ARTAS) For communication systems: Frequentis (VCS)
Upgrade[2] of the ATC system is performed or planned?	The new VCS was put in operational use in October 2017
Replacement of the ATC system by the new one is planned?	Not yet planned

Airports

General information

Not applicable, as Maastricht UAC area of responsibility (upper airspace) does not contain any airports.

[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))

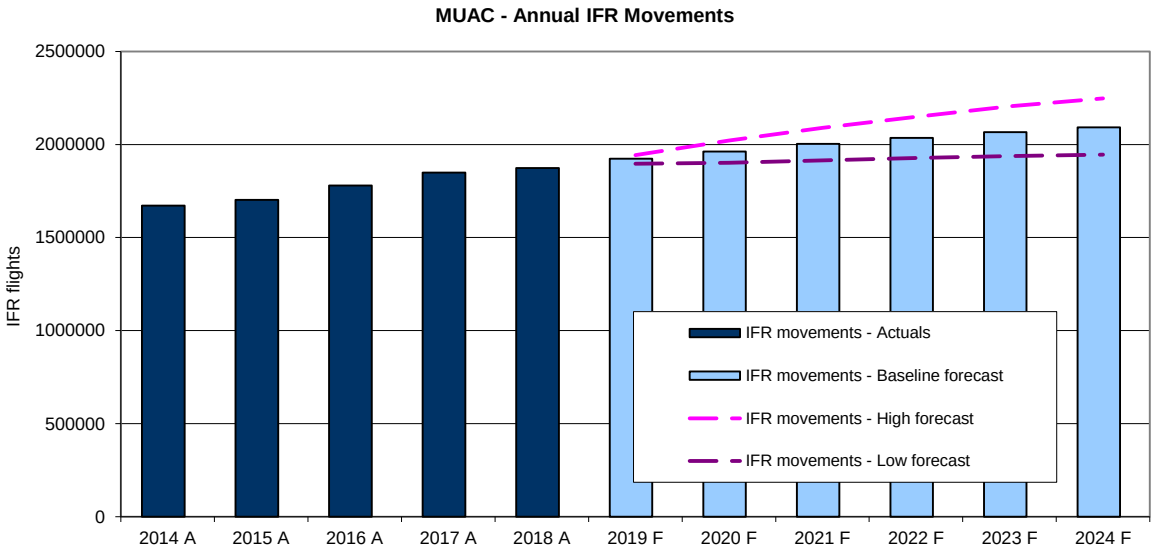
Military Authorities

Maastricht UAC does not include any military authorities in its own management structure. However, details of civil-military coordination, OAT service provision in the AMS FIR above FL245 and FUA application within the airspace of Maastricht UAC are made available in Chapter 1 of the LSSIP for the Netherlands (as NL NSA is the certifying authority for Maastricht UAC, an NL-based ATS provider). More info may also be found in Chapter 1 of the LSSIP documents of the other three States concerned (DE, BE and LU).

In 2018, MUAC was officially certified as a provider of ATS to OAT by the Director of the Dutch Military Aviation Authority (MAA) on behalf of the Minister of Defence.

2. Traffic and Capacity

2.1. Evolution of traffic in Maastricht UAC



EUROCONTROL Seven-Year Forecast (September 2018)											
IFR flights yearly growth		**2015 A**	**2016 A**	**2017 A**	**2018 A**	**2019 F**	**2020 F**	**2021 F**	**2022 F**	**2023 F**	**2024 F**
MUAC	H					3.8%	4.1%	3.3%	2.8%	2.6%	1.9%
	B	1.9%	4.6%	3.9%	1.3%	2.7%	2.0%	2.1%	1.6%	1.5%	1.2%
	L					1.3%	0.3%	0.7%	0.7%	0.5%	0.4%
ECAC	B	1.6%	2.8%	4.0%	3.7%	3.0%	2.6%	2.1%	1.9%	2.0%	2.1%

EUROCONTROL Seven-Year Forecast (September 2018)								
IFR flights yearly growth		**2019 F**	**2020 F**	**2021 F**	**2022 F**	**2023 F**	**2024 F**	**Average 2019-2024**
BRUSSELS Sector Group	H	4.0%	4.5%	3.1%	2.7%	2.4%	1.8%	3.1%
	B	3.0%	1.9%	2.0%	1.7%	1.5%	1.1%	1.9%
	L	1.7%	0.2%	0.7%	0.5%	0.5%	0.4%	0.7%
IFR flights yearly growth		**2019 F**	**2020 F**	**2021 F**	**2022 F**	**2023 F**	**2024 F**	**Average 2019-2024**
DECO Sector Group	H	3.9%	3.8%	4.1%	3.2%	2.9%	2.4%	3.4%
	B	2.9%	1.9%	2.3%	1.9%	1.7%	1.4%	2.0%
	L	1.3%	0.5%	0.8%	0.7%	0.7%	0.6%	0.8%
IFR flights yearly growth		**2019 F**	**2020 F**	**2021 F**	**2022 F**	**2023 F**	**2024 F**	**Average 2019-2024**
HANNOVER Sector Group	H	3.8%	3.5%	3.7%	3.3%	3.0%	2.2%	3.3%
	B	2.6%	2.2%	2.4%	1.4%	1.6%	1.6%	2.0%
	L	1.1%	0.4%	0.8%	0.7%	0.6%	0.6%	0.7%

2018

Traffic in Maastricht UAC **increased by 0.3%** during Summer 2018 (May to October inclusive), when compared to Summer 2017.

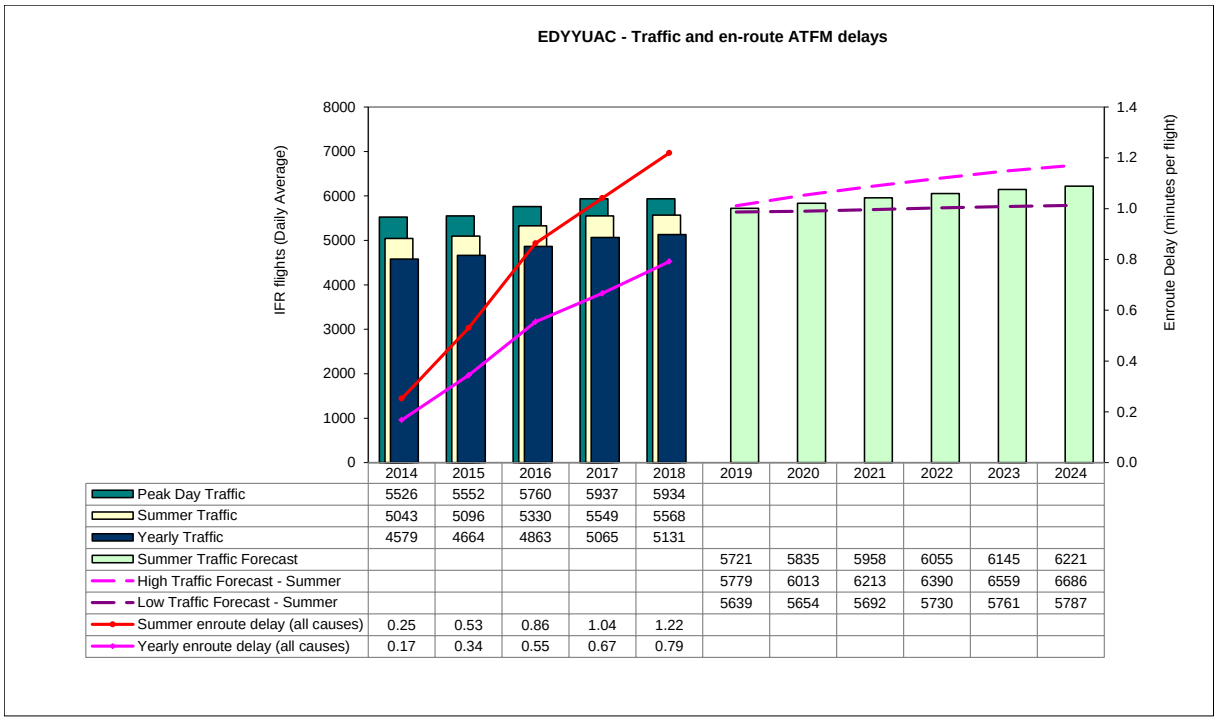
However, there are significant differences between the sector groups. For the whole of 2018, traffic growth in the Brussels sector group was 1.9%; for the Hannover sector group this was 0.8% whereas the growth in DECO stood at 5.2%.

2019-2024

The EUROCONTROL Seven-Year Forecast predicts an average annual traffic growth for MUAC between 0.6% and 3.1% for the planning period, with an average baseline growth of 1.9%.

2.2.ACC Maastricht UAC

Traffic and en-route ATFM delays 2014-2024



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Peak Day Traffic	5526	5552	5760	5937	5934						
Summer Traffic	5043	5096	5330	5549	5568						
Yearly Traffic	4579	4664	4863	5065	5131						
Summer Traffic Forecast						5721	5835	5958	6055	6145	6221
High Traffic Forecast - Summer						5779	6013	6213	6390	6559	6686
Low Traffic Forecast - Summer						5639	5654	5692	5730	5761	5787
Summer enroute delay (all causes)	0.25	0.53	0.86	1.04	1.22						
Yearly enroute delay (all causes)	0.17	0.34	0.55	0.67	0.79						

Performance summer 2018

Traffic Evolution	2018 Capacity Baseline	En-route Delay (min/flight) - Summer		Capacity gap
		Ref value	Actual	
+0.3%	329 (0%)	0.27	1.22	Yes

The average en-route delay per flight increased from 1.04 minutes per flight in Summer 2017 to 1.22 minutes per flight in Summer 2018.
23% of the delays were for the reason ATC Capacity, 33% for ATC Staffing, 39% for Weather, 2% for Airspace Management, 1% for Technical, 1% for Special Events and 1% for Other

Capacity Plan +2%	Achieved	Comments
Improved ATFCM including STAM	Yes	
4 ACCs / NM initiative	Yes	
Resectorisation in the DECO sector group	Yes	
Advanced tactical ATFCM measures	Yes	
Increased usage in operations of CPDLC	Yes	
Stepped implementation of XMAN (possible negative impact on capacity)	No	Postponed by sponsoring airports
Capacity unit Post ops & BI ATM Portal Traffic prediction improvements on iFMP	Ongoing	
Maximum configuration: BRU 5/6, DECO 5/6, HANN 6/7	Yes	BRU: 6 DECO: 6 HANN: 7

Summer 2018 performance assessment

The capacity baseline was measured with ACCESS/Reverse CASA at 329. During the same period, the peak 3 hour demand was 337 and the peak 1 hour was 352.

The implementation of the 3rd layer in the DECO sector group led to a significant capacity increase (around 10%) in the DELTA sectors and allowed MUAC to handle the significant increase in traffic in DECO. However, this is not directly visible in the capacity baseline as this capacity growth is obscured by the delay in the BRUS sector group caused by airspace saturation.

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.

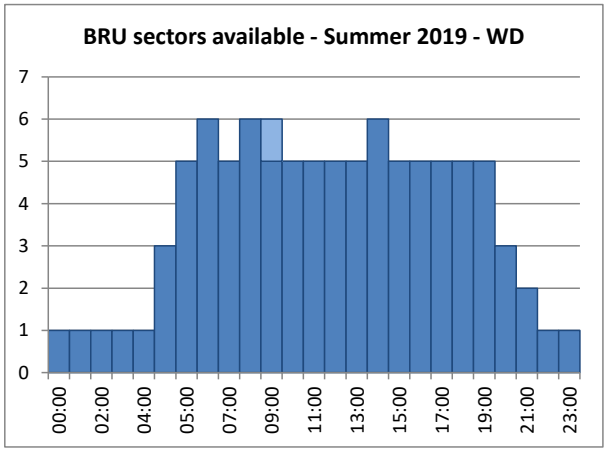
			RP2 Capacity Profiles		RP3 Indicative Capacity Profiles									
ACC	2018 baseline		Profiles (hourly movements and % increase over previous year)											
			2019		2020		2021		2022		2023		2024	
EDYY	329	H	365	11%	373	2%	390	5%	405	4%	416	3%	422	1%
		Ref.	360	9%	365	1%	374	2%	379	1%	385	2%	390	1%
		L	355	8%	355	0%	358	1%	364	2%	365	0%	365	0%
		Open	362	10%	366	1%	376	3%	380	1%	386	2%	392	2%
		C/R	353	7%	358	1%	366	2%	372	2%	377	1%	382	1%

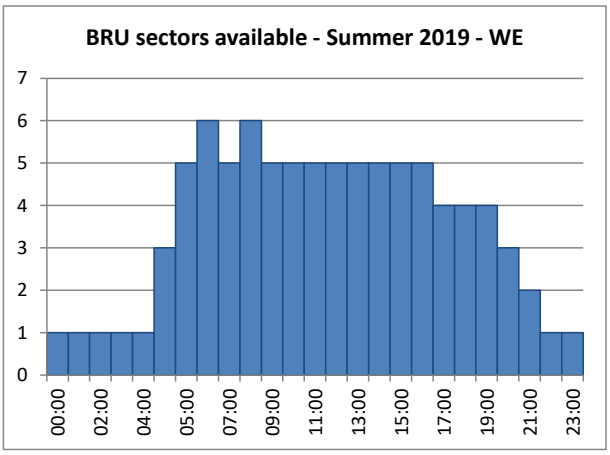
Summer Capacity Plan						
	2019	2020	2021	2022	2023	2024
Free Route Airspace	FRAM2 Phase 2: FRA during night and weekend	FRAM2 Phase 3: FRA H24				
	Cross-border FRA MUAC – Copenhagen ACC					
Airspace Management Advanced FUA	Dynamic FUA Implementation above FL365					
	Trial EDTRA 302/305					
	Change from CDR to Area Restriction in EH airspace					
Airport & TMA Network Integration						
Cooperative Traffic Management	Improved ATFCM including STAM					
	Trial AAPF[1]	AAPF[1]				
	Customer Initiative					
Airspace	UK interface improvements (AD4)	BRU East DFL Change (335->355)				
	NORD[2] Boundary Change					
Procedures						
Staffing	Military to Civil Cross training of ATCOs					
	New ATCOs to compensate departures (At maximum training capacity)					
	MUSE[3] (Optimised training)					
Technical	Increased usage in operations of CPDLC[4]					
Capacity	Stepped implementation of XMAN (possible negative impact on capacity)					
	RDF[5]					
Significant Events		European Football Cup				Olympic games Paris
Max open sectors	BRU 5/6 DECO 4/5 HANN 5/6	BRU 5/6 DECO 5/6 HANN 5/6	BRU 5/6 DECO 5/6 HANN 5/6	BRU 5/6 DECO 5/6 HANN 5/6	BRU 5/6 DECO 5/6 HANN 5/6	BRU 6 DECO 6 HANN 7
Planned Annual Capacity Increase	1%	3%	1%	1%	1%	3%
Reference profile Annual % Increase	9%	1%	2%	1%	2%	1%
Difference Capacity Plan v. Reference Profile	-7.8%	-6.3%	-7.8%	-8.2%	-8.8%	-7.2%
Annual Reference Value (min)	0.17	0.34	0.28	0.21	0.18	0.18
Summer reference value (min)	0.27	0.40	0.32	0.23	0.23	0.23
Additional information	The possibilities of Hannover airspace re-design and required staffing levels are under continuous monitoring. Furthermore a study is undergoing to reduce the number of sectors open during night. A trial is planned for 2019. [1] Advanced ATC Planning Function [2] NICKY OLNO RUHR DELTA [3] Maastricht Upgraded Simulation Environment [4] Depending on aircraft operator equipage upgrading rate [5] Radio Direction Finder					

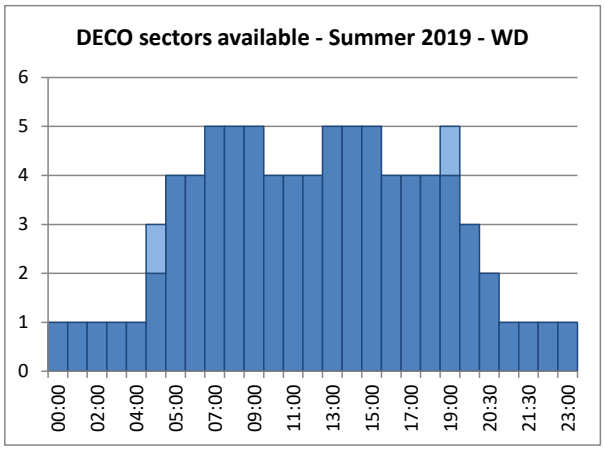
2019 Sector openings

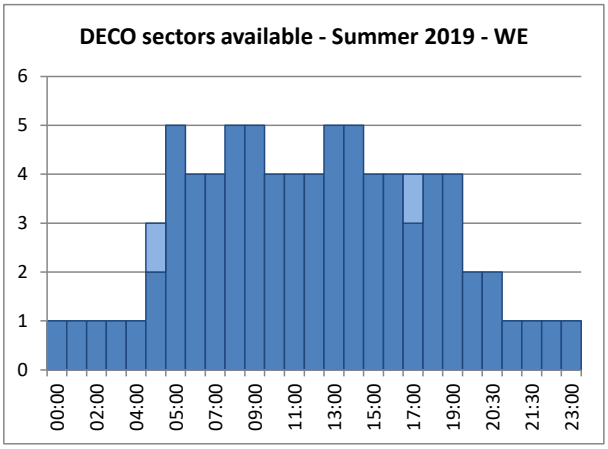
An outline of available sector configuration for typical weekdays and a weekend days for summer 2019.

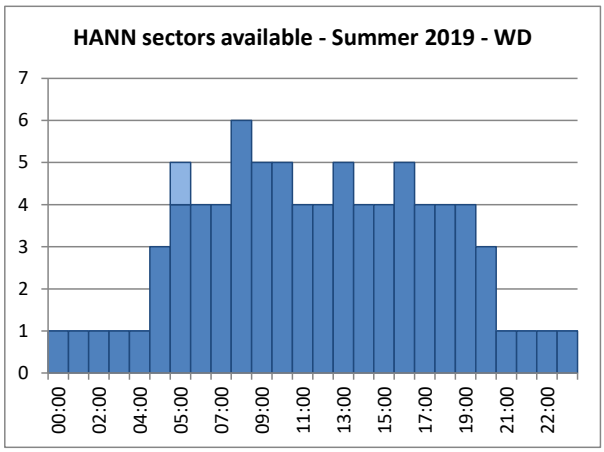
Sector configurations in MUAC are planned completely in function of predicted demand and available staffing. This is done in a pre-tactical planning process that starts one year in advance and is further refined up to D-1 (and then subject to tactical adaptation during the day as the situation warrants). As such, a 'typical weekday' or a 'typical weekend day' in the charts below only represent a rough prediction of the number of sectors that should normally be available, with the shaded (light blue) area indicating typical variation ranges.

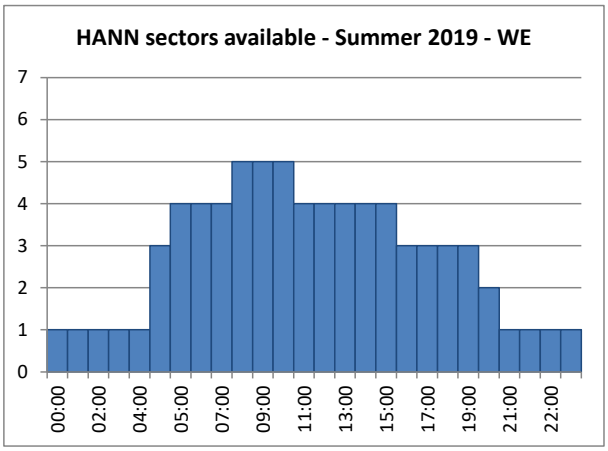


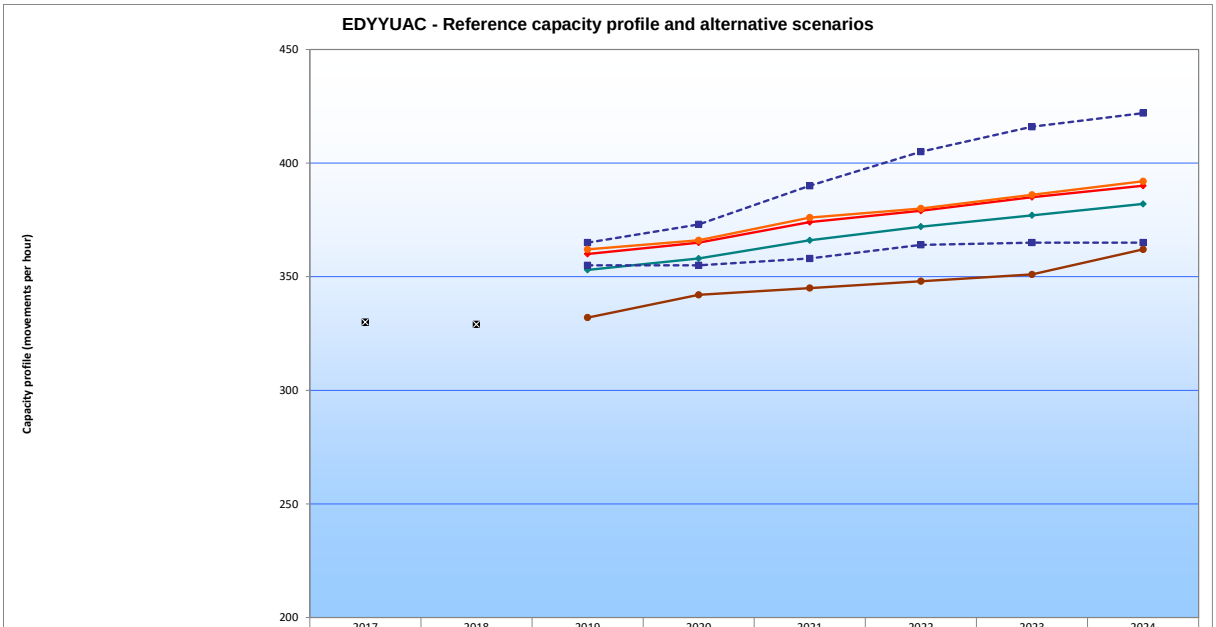












	2017	2018	2019	2020	2021	2022	2023	2024
2019 Reference Capacity Profile 2020-2024 Indicative Reference Capacity Profile			360	365	374	379	385	390
Capacity Profile - Current Routes			353	358	366	372	377	382
Capacity Profile - High			365	373	390	405	416	422
Capacity Profile - Low			355	355	358	364	365	365
Capacity Baseline	330	329						
2019 - 2024 Plan			332	342	345	348	351	362
Capacity Profile - Shortest Routes (Open)			362	366	376	380	386	392

2019-2024 Planning Period Outlook

There will be a capacity gap in Maastricht UAC for the planning period. The main causes are airspace saturation and lack of controllers.

Various measures are aimed at mitigating for the lack of human resources. However, despite maximum training capacity, they will not be sufficient to reach the required staffing levels.

CPDLC is expected to bring additional capacity but it is dependent on aircraft equipage upgrading rate.

Airspace saturation will require structural solutions including a cross-border approach.

3. Master Plan Level 3 Implementation Report conclusions

Conclusions issued from the European ATM Master Plan Level 3 Implementation Report 2018 applicable to MUAC 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
All requirements on FSA and AFP have been clarified during a meeting between NM and MUAC in March 2018. Implementation is planned for early 2019.	

Conclusion	Applicable to
AS THE ASM TOOLS AIMING FOR A FULL ROLLING ASM/ATFCM PROCESS ARE ON THE CRITICAL PATH FOR THE TRANSITION TOWARDS TRAJECTORY-BASED OPERATIONS, ALL CONCERNED STAKEHOLDERS SHOULD ACTIVATE AND/OR INVIGORATE THEIR IMPLEMENTATION PLANS SO AS TO ENSURE THAT THE DEADLINES FOR IMPLEMENTATION WILL BE MET AS APPROPRIATE. (page 14 of the Report)	All States with delays in implementation of AOM19.1, AOM19.2 and AOM19.3
N/A	

Conclusion	Applicable to
IMPLEMENTATION OF FRA IS VERY MUCH ENCOURAGED BELOW FL310 AND IN CROSS-BORDER AIRSPACE. (page 19 of the Report)	ECAC States
Together with the implementation of Phase 2 of MUAC FRA in December 2018, preparations for cross-border FRA with DK-SE FAB were done, in view of its implementation by mid 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
N/A	

4. Implementation Projects

The table below presents the high-level information about the main projects currently ongoing in MUAC. 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
ATC2ATM	MUAC ANSP (MAS)	2015-2025	The programme has been established in 2015 and in its first tranche focused on short-term goals i.e. implementing iFMP as the primary decision making tool, establishment of a new Advanced ATFCM Planning Function in the operations room, revision of the existing flow management processes, improvements to the post-ops analysis processes and tooling. The second tranche focuses on further improvements of traffic predictions using machine learning techniques, building BI capabilities, changes to the concept of operations of supervisory staff and development of multi-sector planning function.	L3: FCM04.2, FCM06
Beek Transmitter Station (BKTX)	MUAC ANSP (MAS)	2014-2019	The new BK-TX towers have been erected and Radios & Antennas installed. First use is by the last resort radio system, as of July 2017; the connection to N-VCS was achieved in October 2017. The Connection to B-VCS is planned for Q2 2019.	
New ATCO Console	MUAC ANSP (MAS)	2018-2023	The objective of this project is to provide the Next Generation Consoles for the ATCOs in the OPS- and TTR (Test & Training) rooms, enabling the deployment of 78 ergonomically designed ATCO workplaces with more "screen space" in a new, flexible room layout. The project definition stage (requirements and design) has been extended to include additional technical studies and the transition planning; it will complete by March 2019 and lead to a management decision on the implementation options. The whole OPS room refurbishment should be finished by 2023.	

4.2.FAB projects

Name of project:	Organisation(s):	Schedule:	Status:	Links:
Extended Arrival Management (XMAN)	DFS (DE), DSNA (FR), LVNL - Luchtverkeersleiding Nederland (NL), MUAC ANSP (MAS), SKEYES (BE), Skyguide (CH)	The XMAN project envisaged three development and implementation steps: Basic – Advanced – Optimised. In December 2018 the project team decided to skip the Optimised Step and to incorporate the envisaged features of the Optimised Step into the Advanced Step. The planning is now as follows: 1. Basic Step - From 2012 to 2024 The Basic Step uses the currently available systems and technologies in order to establish cross-centre arrival management in the airspace controlled by skeyes, DFS, DSNA, LVNL, MUAC and skyguide. 2. Advanced Step - From 2013 to 2024 The Advanced Step takes into account validated SESAR results in order to improve the en-route part of cross-centre arrival management in the overall FABEC airspace. This step requires enhanced data exchange between ACC/UAC in order to support a delay sharing strategy. Additional planning information related to departures and airborne flights will be provided by Airport-CDM and Network Management. This step has an impact on all FABEC ACCs. This Step will also take into account further validated SESAR results and will optimise the cooperation between arrival management and Airport-CDM, Aircraft Operators and Network Management in order to widely share Arrival Management (AM) information between all partners and to process and to apply Arrival Management information where needed.	The FABEC XMAN Basic Step has already been implemented at several ACCs for several airports. The implementation phase of the Basic Step will continue until 2024. The Milestone 4 of the Advanced Step of the XMAN project was planned for June 2018 but was moved to Q2/2019 as the deployment of the XMAN Portal will continue until mid-2019. The project team agreed to skip the Optimised Step and to integrate optimised features into the Advanced Step.	L3: ATC07.1, ATC15.1 Deployment Programme: - AF1: Extended AMAN and PBN in high density TMA - Family 1.1.1: Basic AMAN - Family 1.1.2: AMAN upgrade to include Extended Horizon function

Name of project:	Organisation(s):	Schedule:	Status:	Links:
Free Route Airspace (FRA)	DFS (DE), DSNA (FR), LVNL - Luchtverkeersleiding Nederland (NL), MIL (DE), MUAC ANSP (MAS), Mil. Authority (BE), Mil. Authority (FR), Militaire Luchtvaart Autoriteit (NL), SKEYES (BE), Skyguide (CH), Swiss Air Force (CH)	The FABEC FRA project was launched in 2011 with the objective of setting up a FABEC Free Route Airspace with Advanced Flexible Use of Airspace (A-FUA) at FL 365 (and lower when and where possible) in a stepped approach by the end of RP2. In 2015, the project has been aligned with the requirements of the Pilot Common Project requirements. This induced an implementation of FABEC Free Route Airspace at FL310+ by 2022. In 2016, the project was organised into two work streams 1. National and cross-border Direct Routes (DCT) including Long Range Direct Routings; 2. Free Routing. All Free Route initiatives conducted locally, bilaterally or within a FABEC framework are under the FABEC FRA umbrella. Implementation activities are managed at ACC or national level using local management processes and are monitored at FABEC level. In December 2017 the Project Management Plan version 4.0 has been approved. The project is now further supporting and monitoring the direct routing implementations and full FRA implementations.	The project work on Direct Routings and Free Route is in a rolling MS4 status with a yearly update of the implementation report and implementation plan. DSNA and skyguide have already implemented several direct routes and will continue to implement further direct routes in the coming years in preparation of Full FRA. On the 1st of March 2018, DFS has implemented Full FRA H24 in EDDU North airspace above FL 285 and EDDU East Airspace above FL 315 and Full FRA Night above FL245 in all the DFS airspace. MUAC has successfully extended Full FRA to weekends from the 8th-9th of December 2018 (Full FRA week-end and night).	L3: AOM21.2 L2: AOM-0506

4.3.Regional projects

Maastricht UAC actively participates to the SESAR2020 Programme and makes its Industrial Based Platform (IBP) available to conduct pre-operational validations and demonstrations in areas assessed as important performance enablers for the future.

A non-exhaustive list of validation activities, focusing on the major enablers is presented below.

Interoperability-Air (IOP-A) / i4D / ADS-C / Initial Trajectory Sharing

The main objective is to perform a gradual validation of trajectory exchange with the aircraft (2D/3D moving towards 4D) and to validate the concept of a shared trajectory to ensure consistency of information between ground and airborne systems and enhance ground based tools.

In the period 2011 to 2014 MUAC participated in two live flight trials and real time validations in three steps. The Maastricht IBP evolved and was also used for live testing with Airbus productions flights (known as the PEGASE and SESAR2020 PJ31 Demo1 demonstrations) as well as tests together with Airbus and Inmarsat using satellite communication instead of the VDL2 radio channels. This was the baseline for further evolutions currently being developed under SESAR2020 PJ31 to allow a pre-operational introduction under the mandated PCP ATM Functionality #6 (initial Trajectory Information Sharing). These pre-operational demonstrations are planned to start Q2 2019. This system baseline is also used for the technical testing of the use of satellite communication for data link as from end 2020, together with e.g. Inmarsat and ESA.

Interoperability-Ground (IOP-G)

The objective of this project is to perform operational validation of trajectory exchanges, using the Flight Object. The validations involved MUAC/Reims/Karlsruhe initially was extended with NATS, LVNL, ENAV and the Network Manager (NM) under SESAR1, covering the period of 2013 to 2016.

The MUAC prototype is based on adaptations of the MUAC FDPS to include an IOP application (a.k.a. Flight Object Manager – FOM) and integration with a SWIM Node prototype. The Maastricht IBP evolves for further validations under SESAR2020 PJ18 to get close to what can be a basis for the operational introductions under the mandated PCP ATM Functionality #5 (iSWIM, the Blue Profile). SESAR2020 validations are planned for 2019 and 2020.

In parallel with SESAR validations Maastricht-UAC, together with some adjacent ANSPs, is preparing the development and deployment phase, which is targeting at a first deployment in 2024. Maastricht-UAC is investigating cooperation with the iTEC-consortium because of the common components and supplier of the SWIM-Node and Flight Object Server (FOS), which are the essential new architectural building blocks for the implementation of the IOP-Ground/Ground via the Flight Object.

Flow and Complexity Management

The MUAC iFMP tool is integrated into the MUAC IBP and used for SESAR validations to continuously monitor and evaluate traffic complexity; a method of assessing traffic complexity based on an algorithmic approach using information from the live FDPS is used. This information will be used to assess the impact on upcoming congestions and decide on the optimum airspace configuration scheme (sectorisation) to be applied, including the use of dynamic sector configurations (e.g. vDFL) and military activities from ASM systems like LARA.

The tool will also offer support (through an advanced HMI) for decision making by providing what-if capabilities on flights, traffic flows and airspace configurations at centre level supporting future functions of Multi and Meta Sector Planners, initially implemented in support of the Advanced ATFCM Planning Function within the context of the ATC2ATM programme.

The Maastricht IBP is evolving under SESAR2020 PJ24 Network Collaborative Management towards a maturity which will be the baseline for the operational deployment under the mandated PCP ATM Functionality #3 (Flexible Airspace Management and Free Route), ATM Functionality #4 (Network Collaborative Management) as well as parts of PCP ATM Functionality#5 (iSWIM, the Yellow Profile).

Extended Arrival Management (E-AMAN)

The MUAC involvement in E-AMAN aspects focussed in the past mainly on activities under the FABEC XMAN Project. After some support of E-AMAN activities under SESAR1, MUAC joined the E-AMAN demonstrations under SESAR2020 PJ25 (XSTREAM). XSTREAM activities focus on demonstrations of the E-AMAN concept in cooperation with especially the DFS, London and Paris airports.

The SESAR2020 demonstrations target for a maturity which will be the baseline for the operational deployment of the PCP ATM Functionality #1 (Extended AMAN). Deployment activities itself are coordinated under the FABEC XMAN project and targets for a deployment of SESAR trialled concepts as from 2020 onwards.

5. Cooperation activities

5.1. FAB Co-ordination

FAB Europe Central (FABEC) consists of the following states: Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland.

The FABEC Feasibility Phase (2006-2008) led to the conclusion that FABEC is feasible. The Implementation Phase (2008-2013) demonstrated that the FABEC structure was compliant with SES regulations.

After the ratification of the FABEC Treaty by all FABEC States, FABEC formally entered into force on the 1st of June 2013.

FABEC intends to provide capacity, solve bottlenecks, reduce costs and emissions, make flying more efficient and ensure military mission effectiveness, while maintaining the high safety standards that exist over Europe.

5.2. Regional cooperation

Regional cooperation initiatives

Maastricht UAC area of responsibility is a complex and dense airspace in the close vicinity of major airports such as London, Paris, Frankfurt, Amsterdam, Brussels, Düsseldorf and Copenhagen. Maastricht UAC interfaces with many civil and military ACCs and UACs.

Regular co-ordination meetings are set up with adjacent/subjacent partners, within or outside the FABEC context – in order to improve airspace organisation and procedures such as to optimise the handling of traffic at the common interfaces.

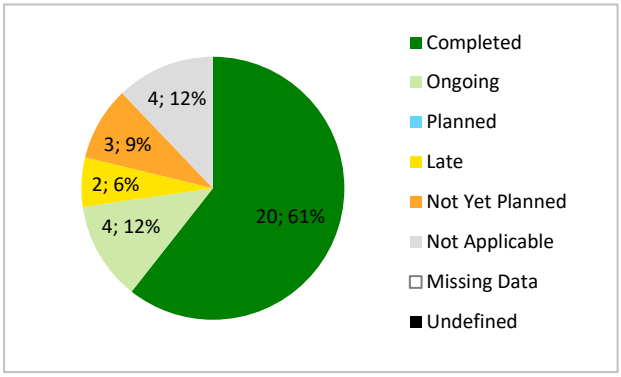
For further information on regional projects, please refer to section 4.3.

6. Implementation Objectives Progress

6.1.State View

Overall Objective Implementation

Progress distribution for applicable Implementation Objectives



AOM19.4 is a new Objective, for which meetings are ongoing related to the set-up of a MUAC FUA cell. The preliminary due date has been set to end 2020. **AOM21.2** progress with the implementation of Phase 2 (weekend and night free route) in December. Phase 3 (full free route H24) is due for implementation by Q1 2020.

ATC17 has been deferred until 2020. **COM12** (NewPENS) is due for implementation before end 2019.

Implementation of **FCM03** shifted from 2018 to 2019, while **FCM04.2** was completed in 2018. For **FCM08**, no plan has been established yet.

Objective Progress per SESAR Key Feature

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

Legend:

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

Optimised ATM Network Services

		<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	100%
AOM19.3 (PCP)	Full rolling ASM/ATFCM Process and ASM Information Sharing	100%
AOM19.4 (PCP)	Management of Pre-defined Airspace Configurations	5%
FCM01	Enhanced Tactical Flow Management Services	100%
FCM03	Collaborative Flight Planning	82%
FCM04.1	STAM Phase 1	100%
FCM04.2 (PCP)	STAM Phase 2	100%
FCM05 (PCP)	Interactive Rolling NOP	n/a
FCM06 (PCP)	Traffic Complexity Assessment	100%

Advanced Air Traffic Services

		<15 15 16 17 18 19 20 21 22 23 24 ≥25
AOM21.1 (PCP)	Direct Routing	100%
AOM21.2 (PCP)	Free Route Airspace	34%
ATC02.2	STCA En-Route	100%
ATC02.8	Ground-Based Safety Nets	100%
ATC02.9	Enhanced STCA for TMAs	n/a
ATC07.1	AMAN Tools and Procedures	
ATC07.1	*	
ATC12.1	Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring	100%
ATC15.1	Information Exchange with En-route in Support of AMAN	100%
ATC15.2 (PCP)	Arrival Management Extended to En-route Airspace	47%
ATC16	ACAS II Compliant with TCAS II Change 7.1	100%
ATC17	Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer	62%
ATC18	Multi Sector Planning En-route - 1P2T	Local objective 0%
ENV01	Continuous Descent Operations	
ENV01	*	
ENV03	Continuous Climb Operations	Local objective
	EDYY - Maastricht Airport	n/a
ITY-COTR	Ground-Ground Automated Co-ordination Processes	100%
NAV03.1	RNAV 1 in TMA Operations	n/a
NAV03.2 (PCP)	RNP 1 in TMA Operations	n/a
NAV10	APV procedures	n/a
NAV12	Optimised Low-Level IFR Routes in TMA for Rotorcraft	Local objective n/a

Enabling Aviation Infrastructure

		<15 15 16 17 18 19 20 21 22 23 24 ≥25
COM10	Migrate from AFTN to AMHS	100% [?]
COM11	Voice over Internet Protocol (VoIP)	100% [?]
COM12 (PCP)	NewPENS	20% [?]
FCM08 (PCP)	Extended Flight Plan	10% [?]
INF07	Electronic Terrain and Obstacle Data (eTOD)	n/a
INF08.1 (PCP)	Information Exchanges using the SWIM Yellow TI Profile	0% [?]
ITY-ACID	Aircraft Identification	100% [?]
ITY-ADQ	Ensure Quality of Aeronautical Data and Aeronautical Information	n/a
ITY-AGDL	Initial ATC Air-Ground Data Link Services	100% [?]
ITY-AGVCS2	8,33 kHz Air-Ground Voice Channel Spacing below FL195	n/a
ITY-FMTP	Common Flight Message Transfer Protocol	100% [?]
ITY-SPI	Surveillance Performance and Interoperability	100% [?]

ICAO ASBU Implementation

The following table shows, for each of the ASBU Block 0 module, 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											
B0-SURF	Safety and Efficiency of Surface Operations (A-SMGCS Level 1-2)											
B0-FICE	Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration					100%						
B0-DATM	Service Improvement through Digital Aeronautical Information Management											
B0-ACAS	ACAS Improvements					100%						
B0-SNET	Increased Effectiveness of Ground-Based Safety Nets					100%						
B0-ACDM	Improved Airport Operations through											
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% 91%						
B0-ASUR	Initial capability for ground surveillance					100%						
B0-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDO)											
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

AOM13.1	**Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**100%**	**Completed**
	-			
As of 1 January 2017, MUAC is providing ATS to OAT in the Hannover UIR on behalf of Germany. On 27 April 2017, the Netherlands have entrusted MUAC with OAT provision in the Amsterdam FIR above FL245.				**27/04/2017**
REG (By:12/2018)				
4 States' NSAs	-	-	%	Not Applicable -
ASP (By:12/2018)				
MUAC ANSP	-	-	100%	Completed 27/04/2017
MIL (By:12/2018)				
MIL	-	-	%	Not Applicable -

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**
	-			
Maastricht UAC was involved in the FABEC ASM/ATFCM field trial (2010) and the live trial (2010). The final goal is to make ASM tools in FABEC interoperable (e.g. connection LARA - STANLY ACOS). In April 2012, LARA was implemented operationally by the Belgian Air Force and in June 2012 in MUAC.				**31/12/2014**
ASP (By:12/2018)				
MUAC ANSP	See main comment.	-	100%	Completed 31/12/2014

AOM19.2	**ASM Management of Real-Time Airspace Data** ***Timescales:*** Initial operational capability: 01/01/2017 Full operational capability: 31/12/2021		**100%**	**Completed**
-				
Implementation in the Netherlands was completed in November 2017 through a connection between LARA and the FDPS. **A future implementation with Belgium is being considered.**				**31/10/2017**
ASP (By:12/2021)				
MUAC ANSP	See main comment.	-	100%	Completed 31/10/2017

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**
-				
LARA covers all system functionality.				**31/12/2015**
ASP (By:12/2021)				
MUAC ANSP	See main comment.	-	100%	Completed 31/12/2015

AOM19.4	**Management of Pre-defined Airspace Configurations** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2021		**5%**	**Ongoing**
-				
The set-up of a MUAC FUA cell is currently under discussion. **Such cell will be supported by a newly to be developed MUAC ASM tool and relevant procedures.** **Such tool will collect data from LARA NL, LARA BE and Stanly DE.** **User requirements for the tool have been defined and meetings are ongoing for the setting up/cost calculation/manning of the MUAC FUA cell, with a preliminary due date of end 2020.**				**30/12/2020**
ASP (By:12/2021)				
MUAC ANSP	See main comment.	-	5%	Ongoing 30/12/2020

AOM21.2	**Free Route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 31/12/2021		**34%**	**Ongoing**
-				
MUAC FRA will be implemented in 3 phases: **Phase 1: between midnight and 06.00 LCL** **Phase 2: weekend and night (preparation for cross-border MUAC DK-SE FAB)** **Phase 3: Full free route H24** **Phase 1 was implemented on 7 December 2017.** **Phase 2 was implemented on 6 December 2018.** **Phase 3 is due for implementation Q1 2020.**				**31/12/2020**
ASP (By:12/2021)				
MUAC ANSP	See main comment.	Free Route Airspace	34%	Ongoing 31/12/2020

ATC02.8	**Ground-Based Safety Nets** ***Timescales:*** Initial operational capability: 01/01/2009 Full operational capability: 31/12/2016		**100%**	**Completed**
	-			
The N-FDPS (put into service in Dec 2008) incorporates conformance monitoring and provides alerts for deviations of track, as well as TSA crossing warnings in case of crossing of an active TSA. Controllers were properly trained prior to operational use. **The N-FDPS provides the APW function to the extend this is needed in an en-route environment through the TSA Crossing Warnings and the forcing on the CWP of (imminently) active TSA Contours in the (Warning) Alert Colour. In the course of 2013, the TSA Crossing Warning function was further enhanced by the implementation of "allowed" crossing tubes through active TSA-s to reflect the concept of available CDRs through TSA-s. In addition, the display of active TSA Contours will be further automated by linking the FDPS to the Airspace Management Tool (LARA).**			**31/12/2015**
ASP (By:12/2016)				
MUAC ANSP	See main comment.	-	100%	Completed 31/12/2015

ATC02.9	**Enhanced Short Term Conflict Alert (STCA) for TMAs** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
	-			
Not applicable to MUAC, as the scope of the objective is limited to TMAs.				**-**
ASP (By:12/2020)				
MUAC ANSP	-	-	%	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		**100%**	**Completed**
	-			
The MTCD function has been linked to the Near Term Conflict functionality which is a tool operating between a classical MTCD look-ahead time and TCT Tools; NCW operates with a 8 minutes look-ahead time. NCW with MTCD is operationally used since early 2015. Implementation of the resolution support function is not yet planned.				**31/12/2015**
ASP (By:12/2021)				
MUAC ANSP	-	-	100%	Completed 31/12/2015

ATC15.1	**Information Exchange with En-route in Support of AMAN** ***Timescales:*** Initial operational capability: 01/01/2012 Full operational capability: 31/12/2019	**100%**	**Completed**
	-		
The interface with Amsterdam ACC was implemented in 2011. Implementation with additional partners (e.g. Frankfurt) is expected to take place depending on their readiness and operational needs. Due to its unique position, MUAC is piloting the integration with multiple AMAN implementations as input into the FABEC XMAN initiative.			**31/12/2011**
ASP (By:12/2019)			
MUAC ANSP	See main comment.	Extended Arrival Management	100%	Completed 31/12/2011

ATC15.2	**Arrival Management Extended to En-route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 31/12/2023	**47%**	**Ongoing**
	-		
The MUAC ATC system to support AMAN was prepared in 2011 for Schiphol and updated with new technology for Heathrow in 2015. **Connectivity with the Frankfurt AMAN is being trialed and due for implementation in 2019.** **The system will be further updated for each additional AMAN. Dusseldorf is tentatively planned for 2019 and Berlin for 2021. Trials for Paris CDG under SESAR2020 are planned for 2019.** **In theory, MUAC shall prepare for up to 13 AMANs. The AMAN owners are leading in terms of implementation schedule. Coordination takes place at FABEC/FAB UK-IRL level.**			**30/12/2023**
ASP (By:12/2023)			
MUAC ANSP	See main comment.	-	47%	Ongoing 30/12/2023

ATC17	**Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2018	**62%**	**Late**
	-		
All messages are implemented in the MUAC system, but only a few are used. In addition, operational benefits are limited for some of the messages. **Prior to operational introduction, an update of the operational concept and technical tuning will be required.**			**31/12/2020**
ASP (By:12/2018)			
MUAC ANSP	-	-	62%	Late 31/12/2020

COM10	**Migrate from AFTN to AMHS** ***Timescales:*** Initial operational capability: 01/12/2011 Full operational capability: 31/12/2018		**100%**	**Completed**
		-		
Maastricht UAC has replaced the DCFEP with a new ECG-based switch, which was a prerequisite for the introduction of AMHS. Implementation with LVNL was successfully concluded in March 2014, with DFS in May and with Belgocontrol in July 2014.				**31/12/2014**
ASP (By:12/2018)				
MUAC ANSP	-	-	100%	Completed 31/12/2014

COM11	**Voice over Internet Protocol (VoIP)** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2020		**100%**	**Completed**
		-		
The new Voice Communication System (N-VCS) was put into operations in October 2017. This change was notified to the 4-States NSA Committee in 2012 and subject to formal acceptance prior to implementation.				**30/10/2017**
ASP (By:12/2020)				
MUAC ANSP	See main comment.	-	100%	Completed 30/10/2017

COM12	**New Pan-European Network Service (NewPENS)** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability (33 ANSPs): 31/12/2020		**20%**	**Ongoing**
		-		
The contract for the NewPENS network was signed in April 2018. MUAC started the transition in Q3 2018, which is planned to be completed by end 2019.				**31/12/2019**
ASP (By:12/2024)				
MUAC ANSP	See main comment.	-	20%	Ongoing 31/12/2019

FCM03	**Collaborative Flight Planning** ***Timescales:*** Initial operational capability: 01/01/2000 Full operational capability: 31/12/2017		**82%**	**Late**
		-		
Since the introduction of the N-FDPS in December 2008, APL and ACH messages are treated automatically. Automatic AFP has been tentatively implemented early 2011, but was not yet used in the NM operational system due to some misalignment in the interpretation of the requirements. During a meeting between NM and MUAC in March 2018, all requirements on FSA and AFP have been clarified. Implementation is planned for early 2019.				**30/03/2019**
ASP (By:12/2017)				
MUAC ANSP	-	-	82%	Late 30/03/2019

FCM04.1	**Short Term ATFCM Measures (STAM) - Phase 1** ***Timescales:*** Initial operational capability: 01/09/2013 Full operational capability: 31/10/2017		**100%**	**Completed**
-				
MUAC uses CHMI for hot spot detection through TMV monitoring by TCM and provides the sectorisation plans and associated TMVs/OTMVs daily to NM through CHMI.				**30/09/2013**
ASP (By:10/2017)				
MUAC ANSP	See main comment.	-	100%	Completed 30/09/2013

FCM04.2	**Short Term ATFCM Measures (STAM) - Phase 2** ***Timescales:*** Initial operational capability: 01/11/2017 Full operational capability: 31/12/2021		**100%**	**Completed**
-				
In 2017, MUAC successfully validated the Targeted-CASA and the Regulation Proposal service via B2B with the Network Manager. MUAC also validated the publishing via B2B of the sector configurations and the capacity values. The Regulation Proposal service and the publishing of sector configurations and capacity values were successfully implemented in 2018. **For 2019, validation and implementation of further B2B functionalities (Regulation Exclusion and Force CTOT) with NM is planned.**				**31/12/2018**
ASP (By:12/2021)				
MUAC ANSP	See main comment.	ATC2ATM	100%	Completed 31/12/2018

FCM05	**Interactive Rolling NOP** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
-				
The responsibility for the Dutch ASM support system lies with the RNLAF, for the German system (based on STANLY) with the DFS. **The Belgian LARA cluster is hosted and maintained by Maastricht UAC, but the responsibility lies with the Belgian Airspace Management Cell (AMC).** **Therefore, this requirement is Not Applicable to Maastricht UAC.**				**-**
ASP (By:12/2021)				
MUAC ANSP	See main comment.	-	%	Not Applicable -

FCM06	**Traffic Complexity Assessment** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 31/12/2021		**100%**	**Completed**
-				
Complexity indications on the iFMP were validated in 2016 and are now in operational use.				**31/12/2016**
ASP (By:12/2021)				
MUAC ANSP	-	ATC2ATM	100%	Completed 31/12/2016

FCM08	**Extended Flight Plan** ***Timescales:*** Initial operational capability: 01/01/2016 Full operational capability: 31/12/2021		**10%**	**Not yet planned**
-				
The use of the EFPL data by ATC is planned to be developed and validated within the SESAR 2020 context. **MUAC is involved in this PJ18, which started in November 2016, but no firm implementation plans have been established yet.**				**-**
ASP (By:12/2021)				
MUAC ANSP	See main comment.	-	10%	Not yet planned -

INF07	**Electronic Terrain and Obstacle Data (eTOD)** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
-				
This objective is not applicable, as MUAC provides ATC only above FL245.				**-**
REG (By:05/2018)				
ASP (By:05/2018)				
MUAC ANSP	-	-	%	Not Applicable -

INF08.1	**Information Exchanges using the SWIM Yellow TI Profile** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2024		**0%**	**Not yet planned**
-				
Preparatory steps are being taken in some areas, but there is no confirmed plan for implementation yet.				**-**
ASP (By:12/2024)				
MUAC ANSP	-	-	0%	Not yet planned -

ITY-ACID	**Aircraft Identification** ***Timescales:*** Entry into force of the Regulation: 13/12/2011 System capability: 02/01/2020		**100%**	**Completed**
-				
MUAC is compliant with the ACID regulation since 2010.				**31/12/2014**
ASP (By:01/2020)				
MUAC ANSP	-	-	100%	Completed 31/12/2014

ITY-ADQ	**Ensure Quality of Aeronautical Data and Aeronautical Information** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
	-			
Maastricht UAC is only a user and not a publisher/originator of aeronautical data and aeronautical information, subject of this regulation. As such, this objective is not applicable to Maastricht UAC. **In particular cases when MUAC provides information to be published in the 4 States national AIPs (e.g. in the context of the Free Routes project) the provision of this type of information will be covered by SLAs currently being drafted with the corresponding Data Providers (DFS, Belgocontrol, LVNL already drafted, ANA).**				-
REG (By:06/2017)				
4 States' NSAs	See main comment.	-	%	Not Applicable -
ASP (By:06/2017)				
MUAC ANSP	Maastricht UAC is only a user and not a publisher/originator of aeronautical data and aeronautical information, subject of this regulation. As such, this objective is not applicable to Maastricht UAC.	FABEC AIM Task Force	%	Not Applicable -

ITY-AGDL	**Initial ATC Air-Ground Data Link Services** ***Timescales:*** Entry into force: 06/02/2009 ATS unit operational capability: 05/02/2018 Aircraft capability: 05/02/2020		**100%**	**Completed**
	-			
Maastricht UAC implemented air-ground datalink communications in 12/2002, supporting CM, CPDLC, DLIC ACM, ACL and AMC services in the complete area of responsibility. Service level agreements have been established with the communication providers and monitoring of the service (external and internal segments) is in place. LOF and NAN have been available with the introduction of N-FDPS in 12/2008 and has been implemented operationally with DFS Karlsruhe in September 2012. Both ATN/VDL-2 and FANS communications are supported.				**06/02/2013**
REG (By:02/2018)				
4 States' NSAs	Safety significant changes to the ATM system are subject to safety oversight by ILT (CAA-NL) and the other 3 NSAs, in accordance with Regulation (EU) No 1034/2011. Changes will be implemented only provided that the safety review by the NSA accepts the safety arguments provided by the ANSP.	-	100%	Completed 06/02/2013
ASP (By:02/2018)				
MUAC ANSP	-	-	100%	Completed 31/03/2012
MIL (By:01/2019)				
MIL	Maastricht UAC does not have a military authority of its own. Progress of this objective by the military authorities of each of the 4 States is presented in their respective LSSIP documents.	-	%	Not Applicable -

ITY-AGVCS2	**8,33 kHz Air-Ground Voice Channel Spacing below FL195** **(Outside Applicability Area)** ***Timescales:*** - not applicable -	**%**	**Not Applicable**
-			
-			**-**

ITY-FMTP	**Common Flight Message Transfer Protocol (FMTP)** ***Timescales:*** Entry into force of regulation: 28/06/2007 All EATMN systems put into service after 01/01/09: 01/01/2009 All EATMN systems in operation by 20/04/11: 20/04/2011 Transitional arrangements: 31/12/2012 Transitional arrangements when bilaterally agreed between ANSPs: 31/12/2014	**100%**	**Completed**
-			
Maastricht UAC has migrated the majority of connections to FMTP in close co-ordination with its adjacent partners. Details of the various implementation plans are provided below. From a regulatory perspective, the relevant (EC) SES regulations apply directly and mandatory in each of the 4 States. Details of progress and of the actions undertaken by each of the 4 States regulators to ensure that FMTP is used between the ATS units and controlling military units and also to supervise compliance with the respective regulations are in each of the respective LSSIP documents. The 4 States NSA Committee will further consider establishing supervisory action in this respect. The transition to IPv6 is gradually progressing.			**30/04/2011**
ASP (By:12/2014)			
MUAC ANSP	-	-	100%	Completed 30/04/2011
MIL (By:12/2014)			
MIL	Maastricht UAC does not have a military authority of its own. Progress of this objective by the military authorities of each of the 4 States is presented in their respective LSSIP documents.	-	%	Not Applicable -

ITY-SPI	**Surveillance Performance and Interoperability** ***Timescales:*** Entry into force of regulation: 13/12/2011 ATS unit operational capability: 12/12/2013 EHS and ADS-B Out in transport-type State aircraft : 07/06/2020 ELS in transport-type State aircraft : 07/06/2020 Ensure training of MIL personnel: 07/06/2020 Retrofit aircraft capability: 07/06/2020		**100%**	**Completed**
-				
The changes to the local MUAC systems are conducted in accordance with agreed MUAC safety processes. In addition, the performance verification requirements of the surveillance data processing systems has been fulfilled in accordance with EC Regulation 1207/2011 and the ESASSP.				**31/12/2013**
REG (By:02/2015)				
4 States' NSAs	For this implementation, procedures according the 4-States Manual have been followed. In line with these procedures, there was no need for a formal acceptance.	-	100%	Completed 31/12/2013
ASP (By:02/2015)				
MUAC ANSP	-	-	100%	Completed 31/12/2013
MIL (By:06/2020)				
MIL	Maastricht UAC does not have a military authority of its own. Progress of this objective by the military authorities of each of the 4 States is presented in their respective LSSIP documents.	-	%	Not Applicable -

NAV03.1	**RNAV 1 in TMA Operations** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
-				
This objective is not applicable to MUAC, as the scope is TMA operations.				**-**
ASP (By:12/2023)				
MUAC ANSP	-	-	%	Not Applicable -

NAV03.2	**RNP 1 in TMA Operations** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
-				
This objective is not applicable to MUAC, as the scope is TMA operations.				**-**
ASP (By:12/2023)				
MUAC ANSP	-	-	%	Not Applicable -

NAV10	**RNP Approach Procedures with Vertical Guidance** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
-				
There are no airports within the area of responsibility of Maastricht UAC.				**-**
REG (By:12/2023)				
ASP (By:12/2023)				
MUAC ANSP	-	-	%	Not Applicable
				-

SAF11	**Improve Runway Safety by Preventing Runway Excursions** **(Outside Applicability Area)** ***Timescales:*** - not applicable -		**%**	**Not Applicable**
-				
There are no airports within the area of responsibility of Maastricht UAC				**-**

Additional Objectives for ICAO ASBU Monitoring

AOM21.1	**Direct Routing** ***Timescales:*** Initial Operational Capability: 01/01/2015 Full Operational Capability: 31/12/2017	**100%**	**Completed**
	-		
All system changes have been implemented; the MUAC system is fully capable of supporting direct routing.			**31/12/2015**
ASP (By:12/2017)			
MUAC ANSP	-	-	100%	Completed 31/12/2015

ATC02.2	**Implement ground based safety nets - Short Term Conflict Alert (STCA) - level 2 for en-route operations** ***Timescales:*** Initial operational capability: 01/01/2008 Full operational capability: 31/01/2013	**100%**	**Completed**
	-		
A new STCA was introduced in the fallback ATC system in June 2006 and in the primary ATC system in January 2007. The implementation of this objective as an operational improvement is now completed. Following experience gained in operational usage and the associated safety monitoring processes, the STCA logic and controller input of the cleared flight level were modified in order to capture potential conflicts at an earlier stage. The STCA system has been verified against and found to be in compliance with the respective EUROCONTROL Specification. ATCOs have been trained on the new STCA. Consequently, integration of the EUROCONTROL Specification for STCA in the 4 States' national regulations and taking more appropriate regulatory actions to ensure the timely compliance with the EUROCONTROL Specification for STCA by Maastricht UAC is considered by MUAC as no longer necessary.			**31/12/2008**
ASP (By:01/2013)			
MUAC ANSP	-	-	100%	Completed 31/12/2008

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**
	-		
ATCOs are aware of the TCAS version upgrade and of the effect that the new "Level off, level off" RA will have on ATC operations through the Electronic Briefing. The awareness is further raised during the yearly Refresher Training Program.			**30/06/2012**
REG (By:12/2015)			
REG NL	The CAAs of the 4 States have evidence on the status of compliance with regulatory provisions for ACAS II (TCAS 7.1) for aircraft and aircraft operators in the State of Registry under the ILT (CAA-NL) oversight. Airworthiness certification can be provided upon application.	-	100%	Completed 30/06/2012
ASP (By:03/2012)			
MUAC ANSP	-	-	100%	Completed 31/03/2012

FCM01	**Implement enhanced tactical flow management services** ***Timescales:*** Initial operational capability: 01/08/2001 Full operational capability: 31/12/2006		**100%**	**Completed**
	-			
1) ASTERIX Cat 62&65 support is available for external partners with the operational deployment of the ART-DACO radar gateway as from Q2/2006. Supply of Cat 062/065 to ETFMS was implemented in September 2009. **2) EFD data is available to the local Traffic Management System (TMS-ASP) as from 2010.** **3) FSA was operationally implemented in 2010.**				**31/12/2014**
ASP (By:07/2014)				
MUAC ANSP	-	-	100%	Completed 31/12/2014

ITY-COTR	**Implementation of ground-ground automated co-ordination processes** ***Timescales:*** Entry into force of Regulation: 27/07/2006 For putting into service of EATMN systems in respect of notification and initial coordination processes: 27/07/2006 For putting into service of EATMN systems in respect of Revision of Coordination, Abrogation of Coordination, Basic Flight Data and Change to Basic Flight Data: 01/01/2009 To all EATMN systems in operation by 12/2012: 31/12/2012		**100%**	**Completed**
	-			
The requirements of this objective are fulfilled by Maastricht UAC since the introduction into service of N-FDPS. MADAP, and in particular the N-FDPS, ensure the following functions: **- display, processing and compilation** **- receive, store, process, extract, and deliver** **- issue a warning when failures are detected** **- provide warnings related to the working positions** **- modify flight information** **- status of relevant system information exchanges** **Implementation of ground-ground automated co-ordination processes is technically completed since the operational introduction of the MUAC N-FDPS system in December 2008. ABI and ACT messages are exchanged with all partners and REV messages with Paris, Reims and Karlsruhe. LOF/NAN messages are already exchanged with DFS Karlsruhe. MAC messages are exchanged with Paris and Reims.**				**30/04/2013**
ASP (By:12/2012)				
MUAC ANSP	-	-	100%	Completed 30/04/2013
MIL (By:12/2012)				
MIL	Maastricht UAC does not have a military authority of its own. Progress of this objective by the military authorities of each of the 4 States is presented in their respective LSSIP documents.	-	%	Not Applicable -

Local Objectives

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

AOP14	Remote Tower Services *Applicability and timescale: Local*	%	Not Applicable
EDYY - Maastricht Airport			
There are no airports within the area of responsibility of Maastricht UAC.			-

ATC18	Multi-Sector Planning En-route - 1P2T *Applicability and timescale: Local*	%	Not yet planned
-			
A project to study the MSP options has been launched and a first set of simulations has been conducted. The feasibility study phase will continue throughout 2019.			-

ENV02	Airport Collaborative Environmental Management *Applicability and timescale: Local*	%	Not Applicable
EDYY - Maastricht Airport			
There are no airports within the area of responsibility of Maastricht UAC.			-

ENV03	Continuous Climb Operations (CCO) *Applicability and timescale: Local*	%	Not Applicable
EDYY - Maastricht Airport			
There are no airports within the area of responsibility of Maastricht UAC.			-

NAV12	Optimised Low-Level IFR Routes in TMA for Rotorcraft *Applicability and timescale: Local*	%	Not Applicable
-			
N/A for MUAC.			-

ANNEXES

Specialists involved in the ATM implementation reporting for MUAC

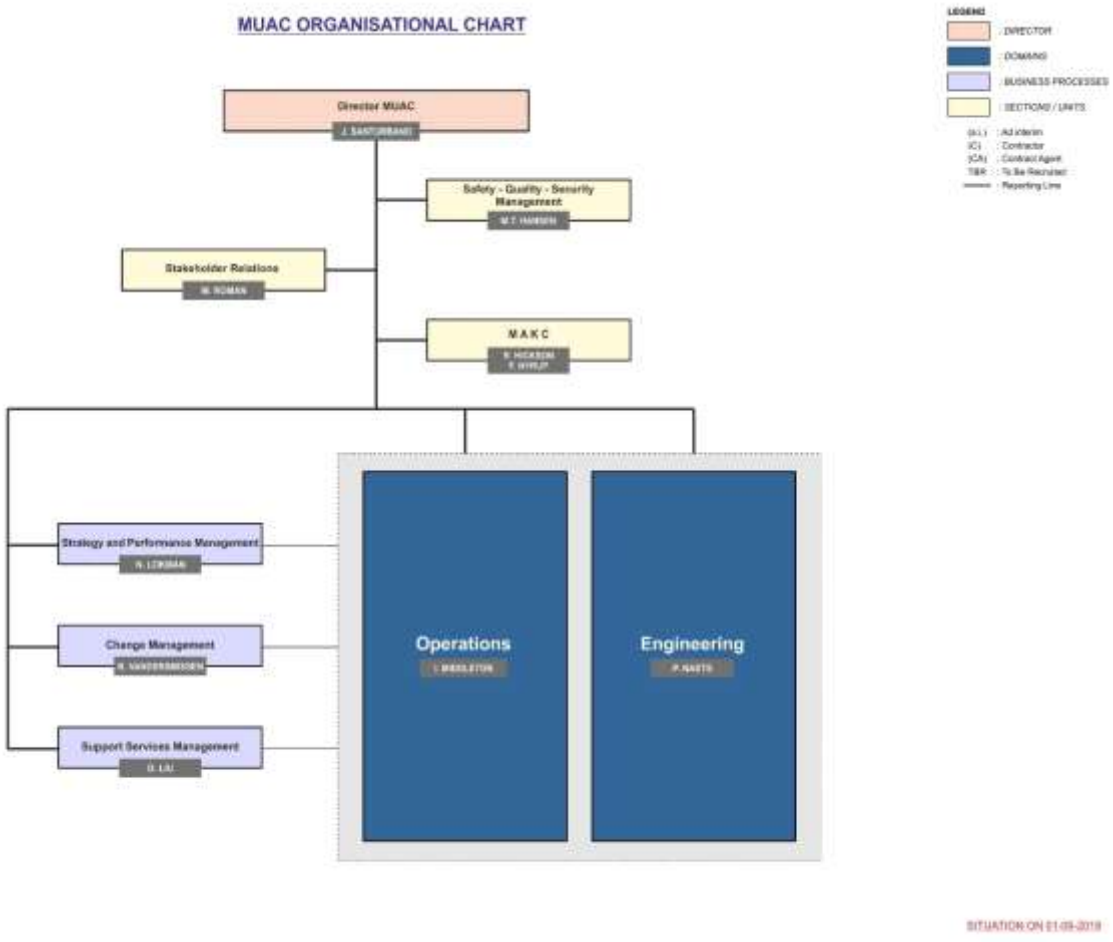
LSSIP Co-ordination

LSSIP Focal Points	Organisation	Name
LSSIP Focal Point for Maastricht UAC	Strategy and Performance Management (MUAC)	Frank GREVEN
LSSIP Focal Point for ILT (CAA-NL), the SES-certifying authority	ILT (CAA-NL)	Marcel HARTMAN
LSSIP Focal Point for the 4 States' NSA Committee	ILT (CAA-NL)	Ronald WOUDSTRA

EUROCONTROL LSSIP Support

Function	Directorate	Name
LSSIP Contact Person	DECMA/ACS/PRM	Jorge PINTO

National stakeholders organisation chart



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 MUAC LSSIP.

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
ACE	ATM Cost Effectiveness
AF	ATM Functionality
AOR	Area of Responsibility
BE	Belgium
CBA	Cost Benefit Analysis
DE	Germany
FABEC	FAB Europe Central
FDPS	Flight Data Processing System
FHA	Functional Hazard Analysis
FMP	Flow Management Position
GAF	German Air Force
ILT	Inspectie Leefomgeving en Transport (Human Environment and Transport Inspectorate, Civil Aviation Authority of The Netherlands)
LU	Grand Duché Luxembourg
LVNL	ATC the Netherlands ("*Luchtverkeersleiding Nederland*")
MCG	Maastricht Co-ordination Group
MUAC	Maastricht UAC
NMC	Network Management Cell
N-FDPS	New FDPS
NL	The Netherlands
ODS	Operator input and Display System
PCP	Pilot Common Project
DP	Deployment Programme
S-AF	Sub ATM Functionality
TLS	Target Level of Safety