EUROCONTROL

LSSIP 2021 - IRELAND
LOCAL SINGLE SKY IMPLEMENTATION

Implementation Overview

FOREWORD

The exceptional situation we are living in and its effects on aviation, shows the importance of a robust planning and monitoring process for the European ATM implementation in our evolving environment.

EUROCONTROL works with all operational stakeholders to manage a seamless European airspace, linking together the elements of the European ATM system into a single value chain. Focusing on performance of the European network, we partner with the operational stakeholders to enable flights to reach their destination safely, on time, with the least possible impact on environment and in a cost-efficient way.

This year, the EUROCONTROL Network Manager and the SESAR Deployment Manager (SDM) teams joined forces to achieve a unified planning and monitoring, critical to move towards our common goal of implementing a single value chain in aviation.

The famous quote: "What we cannot measure, cannot be improved", shows the importance of ATM implementation reporting. The EUROCONTROL Local Single Sky ImPlementation (LSSIP) process, methodology, tools and documents annually express the commitment of civil and military national organisations (Regulators and National Supervisory Authorities, Air Navigation Service Providers and Airport Operators), and their cooperation towards the implementation of the European ATM Master Plan Level 3, including the EC implementing regulation 2021/116 (Common Project 1).

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

In addition, EUROCONTROL is promoting practices to avoid unnecessary duplication of reporting from the stakeholders. Our continuous cooperation with the SDM and the SESAR Joint Undertaking (SJU) ensures the optimisation of the reporting mechanisms bringing all the processes into a single value chain, without diverging monitoring results.

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

I would like to thank, once again, all our stakeholders for their engagement and substantial effort spent in contributing to the information shared in the LSSIP+ Tool and to the production of this LSSIP document. This is a proof of commitment to the principles of transparency and partnership, for the benefit of the entire Aviation community!

Enjoy the reading!

Iacopo Prissinotti
Director NM - Network Manager
EUROCONTROL

SESAR DEPLOYMENT MANAGER WORDS

The need for operational stakeholders to participate to multiple reporting cycles has been a long-standing issue for several years. Finally, there is a paradigm shift in this monitoring cycle thanks to the intense cooperation between EUROCONTROL and the SESAR Deployment Manager (SDM), as we become more efficient, consistent and save precious time and resources.

I thank all stakeholders for their participation and crucial contribution to the SESAR Deployment Programme (SDP) Monitoring View through the LSSIP+ Tool. This edition is particularly important, as it will show for the very first time the status of implementation of the Common Project 1 Regulation, at a time where stakeholders are still suffering from the difficult economic situation posed by the consecutive waves of Covid-19 pandemic. The results within the SDP Monitoring View will give SDM the opportunity to identify the risks, support stakeholders and accelerate deployment.

Mariagrazia La Piscopia
Chief Strategy and Programme
SESAR Deployment Manager

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Reference Documents	
LSSIP Documents	https://www.eurocontrol.int/service/local-single-sky-implementation-monitoring
Master Plan Level 3 – Plan Edition 2021	https://www.eurocontrol.int/publication/european-atm-master-plan-implementation-plan-level-3
Master Plan Level 3 – Report Year 2021	https://www.eurocontrol.int/publication/european-atm-master-plan-implementation-report-level-3
European ATM Portal	https://www.atmmasterplan.eu/
STATFOR Forecasts	https://www.eurocontrol.int/statfor
National AIP	http://iaip.iaa.ie/iaip/IAIP_Frame_CD.htm

APPROVAL SHEET

The following authorities have approved all parts of the LSSIP Year 2021 document and the signatures confirm the correctness of the reported information and reflect the commitment to implement the actions laid down in the European ATM Master Plan Level 3 (Implementation View) – Edition 2021.

Stakeholder / Organisation	Name	Position	Signature and date
Irish Aviation Authority-ANSP	Peter Kearney	Chief Executive	 ***10th April 2022***
Irish Aviation Authority-Safety Regulatory Division (NSA)	Diarmuid Ó Conghaile	Chief Regulator and CX Designate Civil Aviation Regulation	 ***10th April 2022***
Irish Aviation Authority-ANSP	Billy Hann	Director ATM Operations and Strategy	 ***10th April 2022***
MET Eireann (MET Service)	Tony Tighe	Head Aviation Services (MET Eireann)	 ***10th April 2022***

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Executive Summary

National ATM Context

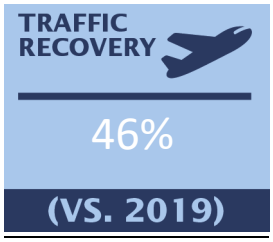
Member State of:

Main national stakeholders:

- The Department of Transport (DoT),
- The Department of Finance,
- The Irish Aviation Authority (IAA), which was appointed in July 2004 as the National Supervisory Authority for Ireland. It is also entrusted with both the regulatory and service provision,
- The Air Accident Investigation Unit (AAIU),
- The Irish Aviation Authority Operations Directorate entrusted for provision of air navigation services,
- The Dublin Airport Authority (daa), for Dublin and Cork Airports (EIDW and EICK),
- The Shannon Airport Authority (SAA),
- The Department of Defence,
- Irish Air Corps,
- Regional Non-State Airports
- MET Eireann (MET Service Ireland)

Main airport covered by LSSIP: Dublin Airport (EIDW).

Traffic and Capacity



For Dublin and Shannon ACCs

Ireland is part of:

The UK-Ireland FAB

Number of national projects: 05
Number of FAB projects: 01
Number of multinational projects: 05

Summary of National, FAB and Multi-national Projects (Chapter 3 of this report)

National Projects:

Communications - Migration to VOIP and System Wide Information Management (SWIM) capabilities: This project continues to be rolled out and is already in place and operational in the Contingency En-Route Operations Centre (CEROC). The New Control Tower in Dublin is VOIP capable and will become operational during 2022 in line with the Dublin ACC. Shannon ACC is expected to have VOIP operationally implemented in late 2023 or early 2024.

Contingency: The above referenced CEROC facility is now fully operational and was approved by the NSA for use, during 2022

FDP – COOPANS: Ongoing ATM System Builds are being implemented with Builds 3.5, 3.6, 3.7 and 3.8 expected to be implemented during 2022 and 2023

Surveillance & Navigation - ILS programme: The ILS replacement programmes (for 7 existing IAA ANSP supported ILS systems) remains on track. Two new ILS systems were installed in 2021 for operational implementation of the New Dublin runway 28R/10L

Surveillance & Navigation - Radar replacement: As a consequence of the 2006-2012 national Radar Replacement program, a layer of Mode-S coverage of all IAA airspace has been delivered. One older combined Primary and Secondary Radar in Dublin was replaced with two Mode-S capable Radars in 2019. ADS-B is in the process of being brought to operational availability during 2022-2023.

FAB Projects:

Introduction of NATS Prestwick and Swanwick FRA: The only project recorded as part of FAB activity. Delivery for Prestwick (Scottish FIR) was completed December 2021. Swanwick deliverables ongoing with West Airspace FRA planned March 2023.

Multinational Projects:

Borealis ASM: Airspace Management Project is Ongoing for the 2021 LSSIP Cycle

Borealis Cross Border Dynamic Sectorisation CBDS: Remains still at planning stage for the 2021 Report

Borealis FRA - Introduction of FRA across 9 ANSPs: Ongoing with most recently introduced FRA in Prestwick ACC (NATS). Further deployment of FRA airspace planned for 2023.

Borealis U-Space/UTM Co-ordination Group: Ongoing interaction to assess operational requirements for ANSPs in managing U-Space and UAV activity.

Harmonisation of Technical ATM Platform in 5 ANSP including support of free Route Airspace and preparation of PCP program (COOPANS B3.3, B3.4 and B4.1) (2015_207_AF3_A; 2015_207_AF3_B): reflects the ongoing ATM system builds applied national by the IAA ANSP and in harmonisation with the COOPANS partner ANSPs

Summary of 2021 developments:

Overall Progress on completion of Implementation Objectives for Ireland is positive when reflecting on the number of CP1 and SES objectives either Completed or Ongoing.

The Ireland 2021 Report records three Implementation Objectives as “Ongoing” for this cycle, having previously recorded these as “Late” for the 2020 cycle:

AOP05 (EIDW) (Airport Collaborative Decision Making (A-CDM): for final completion in April 2022

AOP11 (EIDW) (Initial Airport Operations Plan): Delivery by end of 2023 now reported

ITY-ACID (Aircraft Identification): Completion targeted for end of 2023

The increased number of **REGULATION (EU) 2021/116 of 1 February 2021:** Common Project One (CP1) objectives introduced during this cycle have been addressed with all LSSIP Ireland stakeholders and are informing project planning over the coming years.

In reflecting the PBN Implementation Plan for Ireland approved in 2020 at NETOPS 28, local Airspace projects are ongoing to re-organise airspace to support PBN and deliver environmental as well as operational benefits. Dublin CTA airspace will also be reviewed in late 2022. These projects, although ongoing are not recorded as National projects for the 2021 cycle as a target completion date has yet to be confirmed. The 2022 LSSIP report will include an update on progress and inclusion as National Projects at that point.

As reported in 2020, the functionally separate provision of Air Traffic Services (ATS) and Safety Regulation within the IAA, were planned to have full Organisational separation in 2021, creating two distinct entities with separate Chief Executives for both “new” organisations.

Due to legislative delays, the organisational separation of the two entities is now likely to occur in June 2022.

The ANSP will have a new name, AirNav Ireland, once this activity has been completed.

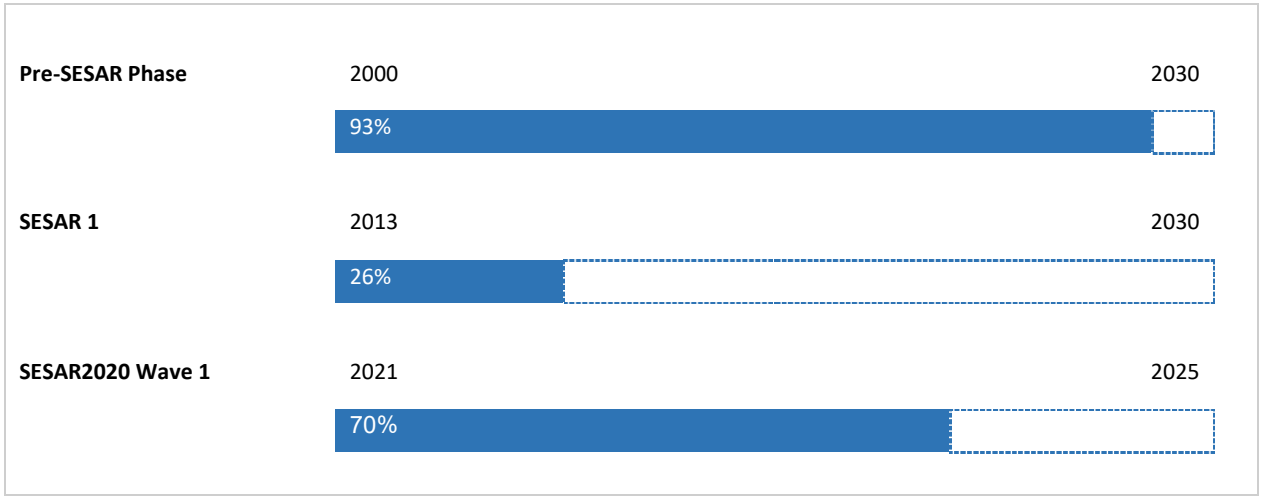
A new Chief Regulator and CX Designate of Aviation Regulation commenced this role at the beginning of 2021.

Progress per SESAR Phase

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

It shows the average implementation progress for all objectives grouped by SESAR Phase, excluding those for which the State is outside the applicability area as defined on a yearly basis in the European ATM Master Plan (Level 3) 2021, i.e. disregarding the declared "NOT APPLICABLE" LSSIP progress status.

The graph below while accurate does not fully reflect the rate of completion of SESAR/SES related objectives by the IAA ANSP and daa, with many objectives already completed and more objectives recorded as "Ongoing," at a high percentage of completion. It does however reflect the re-organisation of objectives in 2021 and will be updated with progress for the 2022 LSSIP Report.



Source: LSSIP DB

Progress per SESAR Essential Operational Changes and Phase

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

All projects related to items detailed in the table below are under active progress.
CNS Infrastructure and Services and Fully Dynamic and Optimised Airspace EOC items are progressing as outlined below.

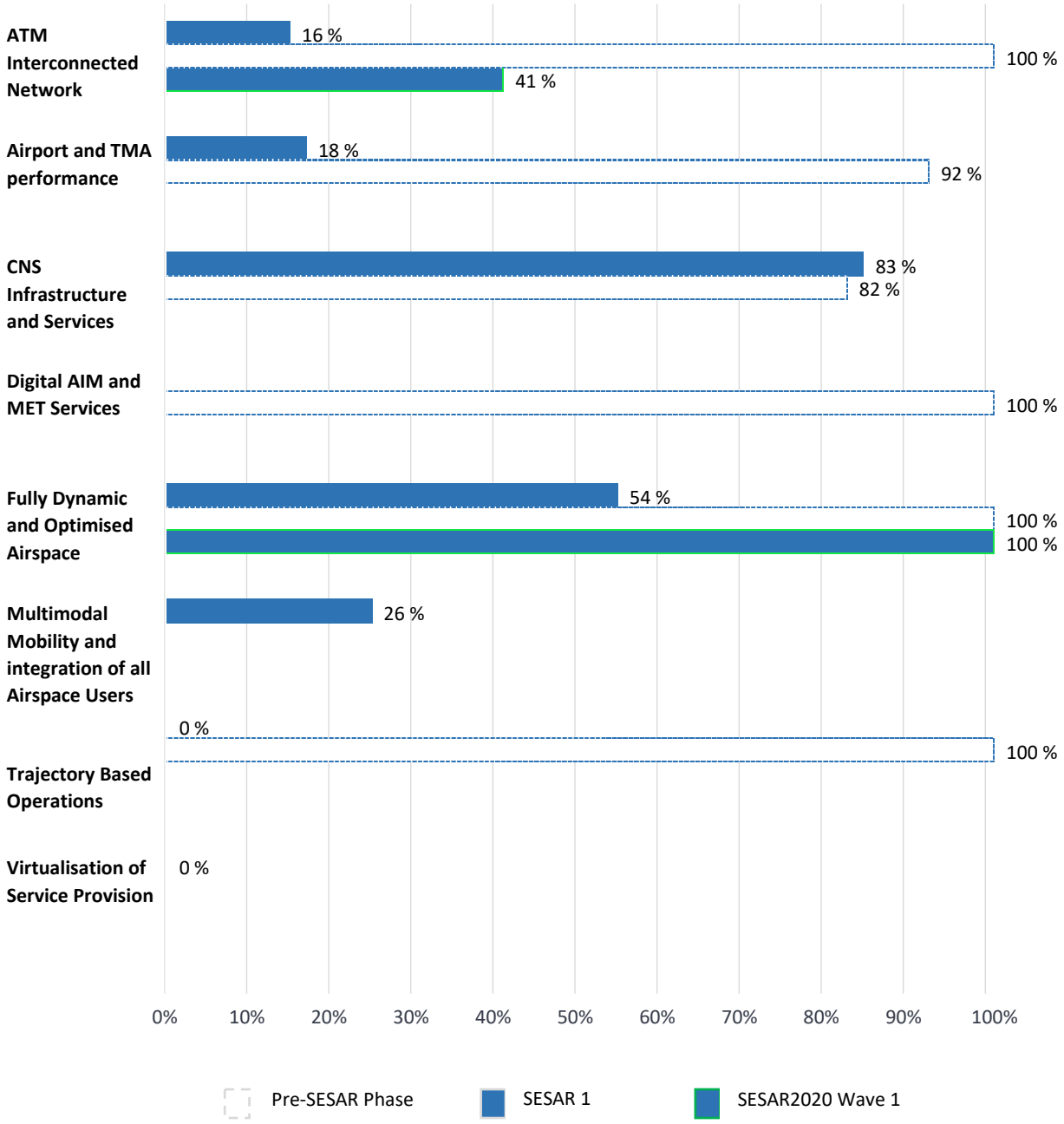
AIM and MET Digital Services Objectives are being addressed with a more positive update expected for the 2022 LSSIP Report

Airport and TMA Performance objectives are progressing expected to show a more positive outcome in 2022.

Reference airspace projects to not only address the PBN Transition Plane for Ireland but also to better support trajectory-based operations will be included in the 2022 LSSIP Report.

Integration of all airspace users is being actively supported by the Irish State and the IAA ANSP and its partner stakeholders but is challenging as there is currently no revenue model to cover associated costs resulting from EU regulations as updated during 2020-2021, e.g. U-Space.

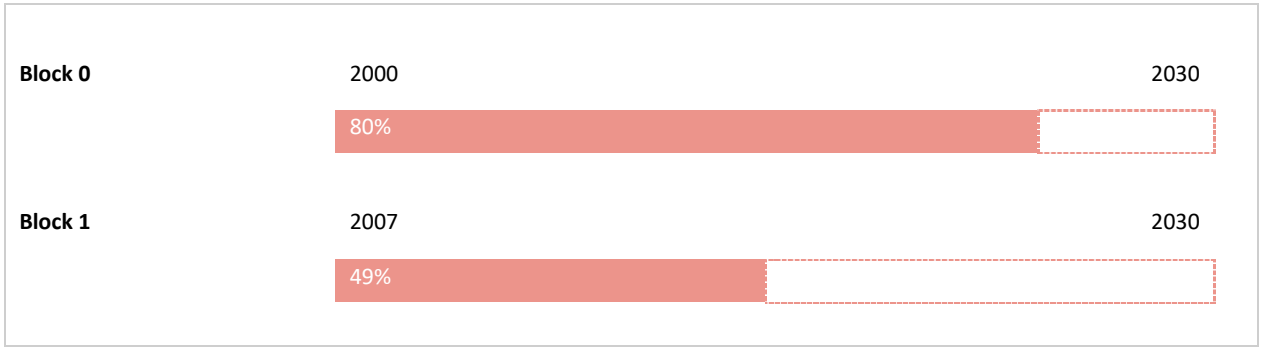
Progress per SESAR Essential Operational Changes and Phase



Source: LSSIP DB

ICAO ASBU Implementation Progress – Blocks 0 and 1

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



ATM Deployment Outlook

State Objectives

✓ **Deployed in 2020 - 2021**

- Enhanced Free Route Airspace Operations
AOM21.3 - 100 % progress

By 2022	By 2023	By 2024	By 2025+
- Enhanced Short Term ATFCM Measures FCM04.2 - 35 % progress **- Automated Support for Traffic Complexity Assessment and Flight Planning interfaces** FCM06.1 - 41 % progress **- Voice over Internet Protocol (VoIP) in Airport/Terminal** COM11.2 - 83 % progress **- Voice over Internet Protocol (VoIP) in En-Route** COM11.1 - 83 % progress **- Multi-Sector Planning En-route - 1P2T** ATC18 - 50 % progress **- Management of Predefined Airspace Configurations** AOM19.4 - 31 % progress **- ASM and A-FUA** AOM19.5 - 38 % progress	**- RNP Approach Procedures to instrument RWY** NAV10 - 97 % progress **- ATS IFR Routes for Rotorcraft Operations** NAV12 - 26 % progress **- Aircraft Identification** ITY-ACID - 97 % progress **- Interactive Rolling NOP** FCM10 - 35 % progress	**- Flight Information Exchange (Yellow Profile)** **- Data Publication Service** INF10.21 - 00 % progress **- Meteorological Information Exchange - Volcanic Ash Mass Concentration information service** INF10.9 - 00 % progress **- Aeronautical Information Exchange Digital NOTAM service** INF10.6 - 08 % progress **- Extended AMHS** COM10.2 - 00 % progress **- Arrival Management Extended to En-route Airspace (non CP1)** ATC15.2bis - 00 % progress	**- Cooperative Network Information Exchange Flight Management Service (Slots and NOP/AOP integration)** INF10.14 - 25 % progress **- Meteorological Information Exchange - Network Meteorological Information** INF10.12 - 10 % progress **- Meteorological Information Exchange - En-Route and Approach Meteorological information service** INF10.11 - 09 % progress **- Meteorological Information Exchange - Aerodrome Meteorological information Service** INF10.10 - 09 % progress **- Aeronautical Information Exchange - Aeronautical Information Features service** INF10.8 - 10 % progress **- Aeronautical Information Exchange - Aerodrome mapping service** INF10.7 - 10 % progress **- Flight Information Exchange (Yellow Profile)** **- Flight Data Request Service** INF10.19 - 00 % progress **- Aeronautical**

			Information Exchange - Airspace Reservation (ARES) INF10.5 - 10 % progress **- Aeronautical Information Exchange - Airspace Availability Service** INF10.4 - 40 % progress **- Aeronautical Information Exchange - Airspace structure service** INF10.3 - 25 % progress **- Stakeholders? SWIM PKI and cyber security** INF10.2 - 08 % progress

Airport Objectives - SHANNON

✓	**Deployed in 2020 - 2021**	None

By 2022	By 2023	By 2024	By 2025+
- Continuous Climb Operations (CCO) ENV03 - 75 % progress	**- Remote Tower Services** AOP14 - 00 % progress		

Airport Objectives - CORK

✓	**Deployed in 2020 - 2021**	None

By 2022	By 2023	By 2024	By 2025+
- Continuous Climb Operations (CCO) ENV03 - 75 % progress	**- Remote Tower Services** AOP14 - 00 % progress		

Airport Objectives - Dublin Airport

✓	**Deployed in 2020 - 2021**	None

By 2022	By 2023	By 2024	By 2025+
- Airport Collaborative Decision Making (A-CDM) AOP05 - 93 % progress **- Departure Management Synchronised with Pre-departure sequencing** AOP19 - 22 % progress **- Continuous Descent Operations (CDO)** ENV01 - 70 % progress	**- Time-Based Separation** AOP10 - 14 % progress **- Initial Airport Operations Plan** AOP11.1 - 21 % progress **- Initial AOP/NOP Information Sharing** FCM11.1 - 09 % progress	**- Arrival Management Extended to En-route Airspace** ATC15.2 - 13 % progress	**- Airport Safety Nets** AOP12.1 - 31 % progress **- Automated Assistance to Controller for Surface Movement Planning and Routing** AOP13 - 00 % progress

Overall situation of Implementation Objectives

Main Objectives	Topic	Progress at the end of 2021	Status	2021	2022	2023	2024	2025	2026	>2026
AOM13.1	Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling	100%	Completed							
AOM19.4	Management of Predefined Airspace Configurations	31%	Ongoing		*					
AOM19.5	ASM and A-FUA	38%	Ongoing		*					
AOM21.2	Initial Free Route Airspace	100%	Completed		*					
AOM21.3	Enhanced Free Route Airspace Operations	100%	Completed					*		
AOP04.1(EIDW)	Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)	100%	Completed							
AOP04.2(EIDW)	Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)	100%	Completed					*		
AOP05(EIDW)	Airport Collaborative Decision Making (A-CDM)	93%	Ongoing							
AOP10(EIDW)	Time-Based Separation	14%	Ongoing				*			
AOP11.1(EIDW)	Initial Airport Operations Plan	21%	Ongoing			*				
AOP11.2(EIDW)	Extended Airport Operations Plan	0%	Not yet planned							2027
AOP12.1(EIDW)	Airport Safety Nets	31%	Ongoing					*		
AOP13(EIDW)	Automated Assistance to Controller for Surface Movement Planning and Routing	0%	Planned					*		
AOP14(EICK)	Remote Tower Services	0%	Ongoing							2030
AOP14(EINN)	Remote Tower Services	0%	Ongoing							2030
AOP15(EIDW)	Enhanced traffic situational awareness and airport safety nets for the vehicle drivers	0%	Not yet planned							2030
AOP16(EIDW)	Guidance assistance through airfield ground lighting	0%	Not yet planned							2030
AOP17(EICK)	Provision/integration of departure planning information to NMOC	0%	Not yet planned							2030
AOP18(EIDW)	Runway Status Lights (RWSL)	0%	Not yet planned							2030

Main Objectives	Topic	Progress at the end of 2021	Status	2021		2022		2023		2024		2025		2026		>2026
AOP19(EIDW)	Departure Management Synchronised with Pre-departure sequencing	22%	Ongoing				*									
ATC02.8	Ground-Based Safety Nets	100%	Completed		*											
ATC07.1(EIDW)	AMAN Tools and Procedures	100%	Completed													
ATC12.1	Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring	100%	Completed		*											
ATC15.1	Information Exchange with En-route in Support of AMAN	100%	Completed													
ATC15.2(EIDW)	Arrival Management Extended to En-route Airspace	13%	Ongoing								*					
ATC15.2bis	Arrival Management Extended to En-route Airspace (non CP1)	0%	Planned								*					
ATC18	Multi-Sector Planning En-route - 1P2T	50%	Ongoing													2030
ATC19(EIDW)	AMAN/DMAN Integration	0%	Not yet planned													2027
ATC20	Enhanced STCA with down-linked parameters via Mode S EHS	0%	Not yet planned													2030
COM10.1	Migrate from AFTN to AMHS (Basic service)	100%	Completed													
COM10.2	Extended AMHS	0%	Planned								*					
COM11.1	Voice over Internet Protocol (VoIP) in En-Route	83%	Ongoing		*											
COM11.2	Voice over Internet Protocol (VoIP) in Airport/Terminal	83%	Ongoing						*							
COM12	New Pan-European Network Service (NewPENS)	100%	Completed								*					
ENV01(EIDW)	Continuous Descent Operations (CDO)	70%	Ongoing						*							
ENV02(EIDW)	Airport Collaborative Environmental Management	100%	Completed													2030
ENV03(EICK)	Continuous Climb Operations (CCO)	75%	Ongoing													2030
ENV03(EIDW)	Continuous Climb Operations (CCO)	100%	Completed													2030
ENV03(EINN)	Continuous Climb Operations (CCO)	75%	Ongoing													2030
FCM03	Collaborative Flight Planning	100%	Completed				*									
FCM04.2	Enhanced Short Term ATFCM Measures	35%	Ongoing				*									
FCM06.1	Automated Support for Traffic Complexity Assessment and Flight Planning interfaces	41%	Ongoing				*									

Main Objectives	Topic	Progress at the end of 2021	Status	2021		2022		2023		2024		2025		2026		>2026
FCM10	Interactive Rolling NOP	35%	Ongoing						*							
FCM11.1(EIDW)	Initial AOP/NOP Information Sharing	9%	Ongoing						*							
FCM11.2(EIDW)	AOP/NOP integration	0%	Not yet planned													2027
INF07	Electronic Terrain and Obstacle Data (eTOD)	100%	Completed													
INF10.10	Meteorological Information Exchange - Aerodrome Meteorological information Service	9%	Ongoing										*			
INF10.11	Meteorological Information Exchange - En-Route and Approach Meteorological information service	9%	Ongoing										*			
INF10.12	Meteorological Information Exchange - Network Meteorological Information	10%	Ongoing										*			
INF10.13	Cooperative Network Information Exchange - ATFCM Tactical Updates Service (Airport Capacity and Enroute)	0%	Not Applicable										*			
INF10.14	Cooperative Network Information Exchange – Flight Management Service (Slots and NOP/AOP integration)	25%	Ongoing										*			
INF10.15	Cooperative Network Information Exchange – Measures Service (Traffic Regulation)	0%	Not Applicable										*			
INF10.16	Cooperative Network Information Exchange - Short Term ATFCM Measures services (MCDM, eHelpdesk, STAM measures)	0%	Not Applicable										*			
INF10.17	Cooperative Network Information Exchange – Counts service (ATFCM Congestion Points)	0%	Not Applicable										*			
INF10.19	Flight Information Exchange (Yellow Profile) - Flight Data Request Service	0%	Planned										*			
INF10.2	Stakeholders' SWIM PKI and cyber security	8%	Ongoing										*			
INF10.20	Flight Information Exchange (Yellow Profile) - Notification Service	0%	Not yet planned										*			
INF10.21	Flight Information Exchange (Yellow Profile) - Data Publication Service	0%	Planned										*			
INF10.23	Flight Information Exchange (Yellow Profile) -	0%	Not yet										*			

Main Objectives	Topic	Progress at the end of 2021	Status	2021		2022		2023		2024		2025		2026		>2026
	Extended AMAN SWIM Service		planned													
INF10.3	Aeronautical Information Exchange - Airspace structure service	25%	Ongoing										*			
INF10.4	Aeronautical Information Exchange - Airspace Availability Service	40%	Ongoing										*			
INF10.5	Aeronautical Information Exchange - Airspace Reservation (ARES)	10%	Ongoing										*			
INF10.6	Aeronautical Information Exchange – Digital NOTAM service	8%	Ongoing										*			
INF10.7	Aeronautical Information Exchange - Aerodrome mapping service	10%	Ongoing										*			
INF10.8	Aeronautical Information Exchange - Aeronautical Information Features service	10%	Ongoing										*			
INF10.9	Meteorological Information Exchange - Volcanic Ash Mass Concentration information service	0%	Planned										*			
ITY-ACID	Aircraft Identification	97%	Ongoing													
ITY-AGDL	Initial ATC Air-Ground Data Link Services	100%	Completed													
ITY-AGVCS2	8,33 kHz Air-Ground Voice Channel Spacing below FL195	100%	Completed													
ITY-FMTP	Common Flight Message Transfer Protocol (FMTP)	100%	Completed													
NAV03.1	RNAV 1 in TMA Operations	100%	Completed													2030
NAV03.2	RNP 1 in TMA Operations	100%	Completed													2030
NAV10	RNP Approach Procedures to instrument RWY	97%	Ongoing							*						
NAV12	ATS IFR Routes for Rotorcraft Operations	26%	Ongoing													2030
SAF11	Improve Runway Safety by Preventing Runway Excursions	100%	Completed													

LEGEND:

*	Full Operational Capability (FOC) date
	The Planned Implementation Date as reported in the LSSIP DB for each objective

Introduction

The Local Single Sky ImPlementation (LSSIP) documents, as an integral part of the Master Plan (MP) Level 3 (L3)/LSSIP mechanism, constitute a short/medium term implementation plan containing ECAC States' actions to achieve the Implementation Objectives as set out by the MP Level 3 and to improve the performance of their national ATM System. This LSSIP document describes the situation in the State at the end of December 2021, together with plans for the next years.

Chapter 1 provides an overview of the ATM institutional arrangements within the State, the membership of the State in various international organisations, the organisational structure of the main ATM players -civil and military- and their responsibilities under the national legislation. In addition, it gives an overview of the Airspace Organisation and Classification, the ATC Units and the ATM systems operated by the main ANSP;

Chapter 2 provides a comprehensive picture of the situation of Air Traffic, Capacity and ATFM Delay per each ACC in the State. It shows the evolution of Air Traffic and Delay in the last five years and the forecast for the next five years. It also presents the achieved performance in terms of delay during the summer season period and the planned projects assumed to offer the required capacity which will match the foreseen traffic increase and keep the delay at the agreed performance level, taking into account the current aviation situation caused by the COVID19 crisis;

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

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

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

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

1. National ATM Environment

1.1. Geographical Scope

International Membership

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

Organisation		Since
ECAC	✓	1955
EUROCONTROL	✓	1st January 1965
European Union	✓	1973
EASA	✓	2005
ICAO	✓	31 October 1946
NATO	N	-
ITU	✓	1923

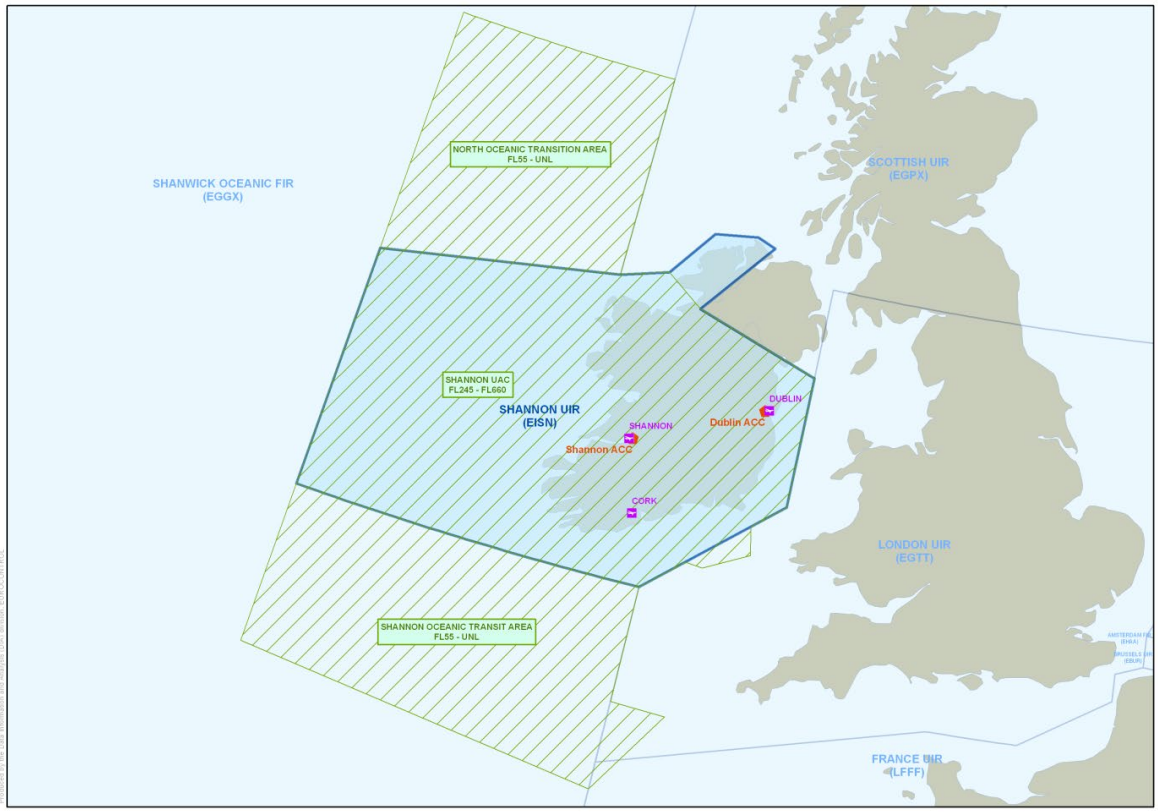
Geographical description of the FIR(s)

The geographical scope of this document addresses the Irish FIR(s): Shannon FIR including Shannon Oceanic Transition Area (SOTA) and Northern Oceanic Transition Area (NOTA).

Within the Shannon FIR/UIR are contained:

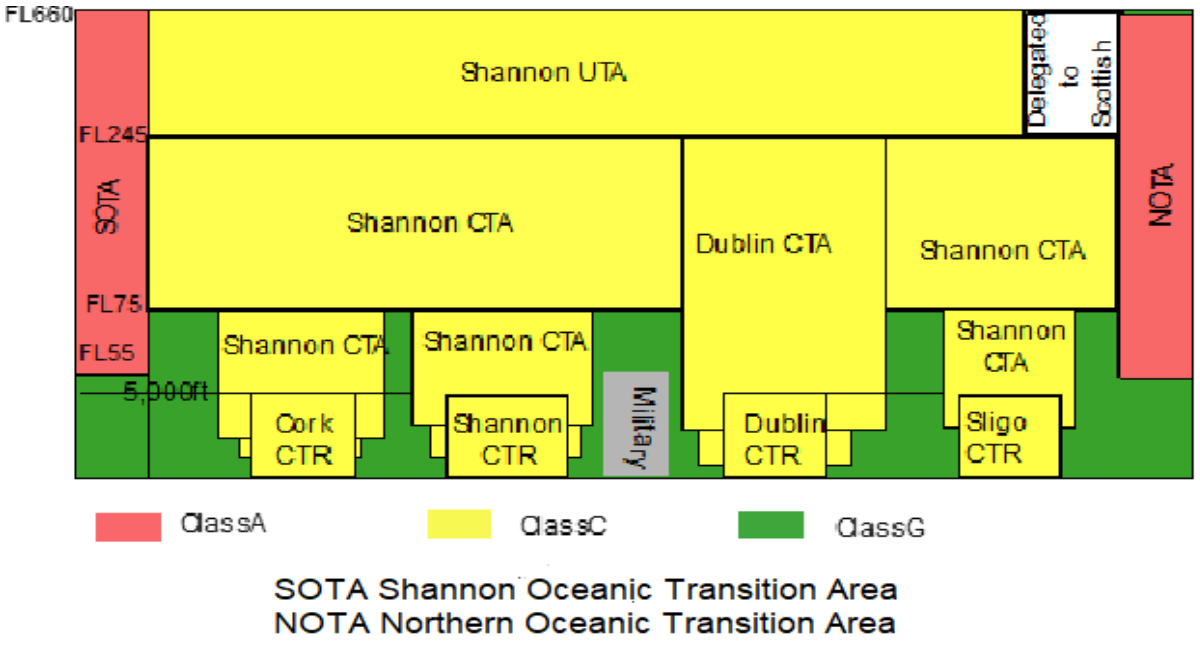
- Shannon CTA (upper limit FL 245);
- Dublin CTA/TMA (upper limit FL 245);
- Shannon UIR/UTA (FL 245 to FL 660).

Shannon FIR is surrounded by FIRs of 2 States, namely United Kingdom (Scottish FIR/UIR & London FIR/UIR) and France (Brest FIR/UIR) and the NAT region (Shanwick Oceanic Control Area).



Airspace Classification and Organisation

The figure below shows the current airspace classification within the Irish airspace. As it can be seen, all **airspace above FL75 is Class C with NOTA and SOTA Class A above FL55.**



Sligo is used to represent the regional airports – 5 in total.

Military airspace is active to various levels. The IAA ANSP and the Irish Air Corps (IAC) Military interact on a quarterly basis through the Standing Civil/Military Air Navigation (StaCMAN Committee)

ATC Units

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

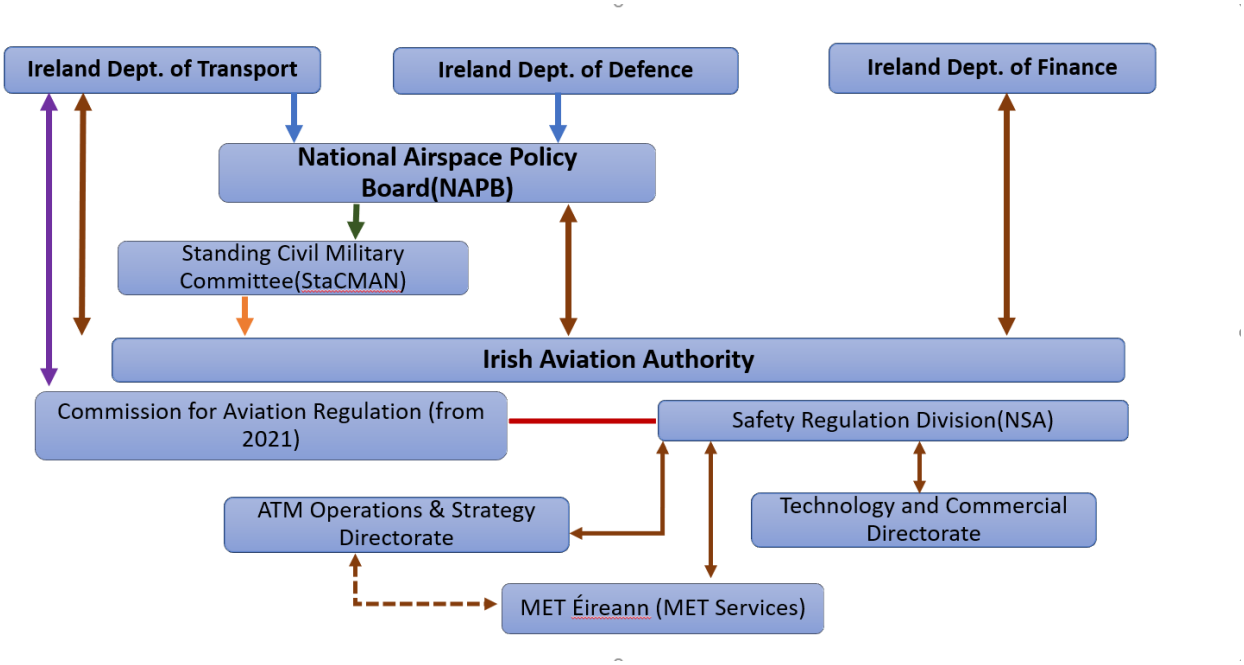
ATC Unit	Number of sectors		Associated FIR(s)	Remarks
	En-route	TMA		
Shannon	12	2	London FIR, Scottish FIR, Brest FIR and Shanwick FIR	TWR and Approach service co-located at Shannon Airport as part of IAA Terminal Services Business Unit
CEROC (Shannon Enroute Contingency Centre	8	0	London FIR, Scottish FIR, Brest FIR and Shanwick FIR	Fully Operational Contingency Centre located near the Shannon ACC.
Dublin	4	2	London Scottish and Shannon	TWR for Dublin Airport
Cork	0	2	Shannon	TWR and Approach service co-located at Cork Airport as part of IAA Terminal Services Business Unit
Baldonnel Military Air Base	0	2	Shannon	TWR for Baldonnel Air Base

1.2. National Stakeholders

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

- The Department of Transport (DoT),
- The Department of Finance,
- The Irish Aviation Authority (IAA), which was appointed in July 2004 as the National Supervisory Authority for Ireland. It is also entrusted with both the regulatory and service provision,
- The Air Accident Investigation Unit (AAIU),
- The Irish Aviation Authority Operations Division entrusted for provision of air navigation services,
- The Dublin Airport Authority, for Dublin and Cork Airports (EIDW and EICK),
- The Shannon Airport Authority, for Shannon Airport (EINN),
- The Department of Defence,
- Irish Air Corps,
- Regional Non-State Airports.
- MET Eireann: MET Service for Ireland
- AIS/AIM/ARO: Domain of the IAA ANSP

The activities of these national Stakeholders are detailed in the following subchapters. Their relationships are shown in the chart.



Institutional Arrangements and Links:

Civil Regulator(s)

General Information

In Ireland, civil aviation is the responsibility of The Department of Transport (DoT). The Department assigned its powers and authority to manage Irish airspace and aviation safety standards and practices to the Irish Aviation Authority - IAA. The IAA is therefore entrusted with both the regulatory and service provision functions, which are **functionally separated** within the organisation. The Department of Transport has nominated the **Safety Regulatory Division** of the IAA as the **National Supervisory Authority** in accordance with EU regulatory requirements.

The Department of Transport initiated an **organisational separation** of service provision and regulation during 2019. Work on setting up the required organisational departments for both entities continues while a legislative delay to the vesting of both standalone companies is addressed. It is expected that the formal separation and vesting of both organisations will take effect from the end of June 2022.

The Department of the Environment, Community and Local Government and the Department of Transport perform the regulatory function for environmental matters in Ireland.

The Irish Government, after consultation with all major stakeholders, published a new Aviation Policy document for Ireland in July 2019 (LINK).

The IAA is a commercial State body with a Board appointed by the Minister. En-route Route Charges are determined through the performance scheme. The terminal charges at Cork, Dublin, and Shannon where the IAA provide terminal services are subject to economic regulation by the Commission for Aviation Regulation (CAR). In 2021, as part of the application of RP3 requirements, CAR also became responsible for economic regulation of the ANSP.

The Board and staff of the Irish Aviation Authority are committed to providing safe, efficient and cost-effective air navigation and regulatory services, which meet the needs of its customers on a sound commercial basis.

The Safety Regulation Division (SRD/NSA), (soon to be vested as the IAA (Aviation Regulator) of the IAA regulates safety standards in five key areas: Flight Operation Standards, Licensing Standards, Airworthiness Standards, Aviation Security and Air Navigation Standards.

The different national entities having regulatory responsibilities in ATM are summarised in the table below. The IAA is further detailed in the following sections.

Activity in ATM:	Organisation responsible	Legal Basis
Rule-making	Department of Transport (DoT)/Irish Aviation Authority (IAA)	The Irish civil aviation regulatory framework emanates from the Irish Constitution and is composed of EC Regulations and Statutory Instruments (Acts, Orders, Regulations and Directives). The Single European Sky (SES) legislation applies in Ireland and hence the State has two rulemaking systems – a common mechanism at EU level for the development of EC laws and managed by the European Commission and a process at national level for those subjects whose regulation remains a national matter. The DoT is signatory to international Conventions and is responsible for drafting legislation for the aviation sector, plus high-level policy making. The Authority was assigned powers under the Irish Aviation Authority Act, 1993 to make Orders and Regulations for the purpose of giving effect to the Annexes to the Chicago Convention. The DoT is the Government Department with responsibility for the transport industry in Ireland including aviation. The IAA is the civil aviation regulatory authority created by legislation to carry out certain State functions.
Safety Oversight	IAA/SRD/NSA	The DoT assigned its powers and authority to manage Irish airspace and aviation safety standards and practices to the IAA by the enactment of the Irish Aviation Authority Act, 1993.
Enforcement actions in case of non-compliance with safety regulatory requirements	IAA/SRD/NSA	In compliance with Article 4 of Commission Regulation (EC) No. 549/2004, the SRD/NSA of the IAA was established in July 2004, as the National Supervisory Authority (NSA) of Ireland. This issue is within the remit of its competences.
Airspace	IAA/SRD/NSA	Irish Aviation Authority Act 1993
Economic	Department of Transport/Commission for Aviation Regulation	Aviation Regulation Act, 2001
Environment	Department of Environment, Community and Local Government / Department of Transport	Air Navigation and Transport Act, 1988 Various Acts from Department of Transport including European Communities (Greenhouse Gas Emissions Trading) (Aviation) Regulations 2010

Security	Department of Transport/Commission for Aviation Regulation	With effect from 1st January 2013, the Minister for Transport, Tourism and Sport assigned responsibility for the monitoring of compliance with national and EU rules on aviation security to the Irish Aviation Authority (a role previously carried out by the DoT until the end of 2012). The IAA security oversight involves inspections and audits of airports, air carriers, cargo companies, airport suppliers and suppliers of in-flight services. The DoT retains overall responsibility for aviation security policy in Ireland and its existing aviation security obligations under all national and international legislation including the • Air Navigation and Transport Acts • ICAO Annex 17 • The Member State functions outlined in all relevant EU Regulations, and • ECAC Doc 30 Full list of the relevant legislation is available at https://www.iaa.ie/aviation-security/legislation-1
Accident investigation	Air Accident Investigation Unit (AAIU)	The AAIU of the Department of Transport (DoT) is the statutory body responsible for the investigation of accidents and serious incidents. The **AAIU** conducts its investigations of aviation occurrences in accordance with Annex 13 (10th Edition) to the ICAO Convention, Regulation (EU) No 996/2010 and Statutory Instrument No. 460 of 2009. The fundamental purpose of such investigations is to determine the circumstances and causes of these events, with a view to the preservation of life and the avoidance of similar occurrences in the future. It is not the purpose of such investigations to apportion blame or liability. The SRD/NSA of the IAA is also responsible, in addition to the investigation of serious incidents, for the investigation of non-serious incidents and ATM specific occurrences (i.e. ESARR2). Close cooperation exists between the AAIU and SRD/ NSA in respect of safety occurrences.

Irish Aviation Authority (Regulator)

The Irish Aviation Authority (SRD, soon to be vested as the IAA (Aviation Regulator) is responsible for ATM safety regulation for Ireland, which is applied to civil ATM only and not extended to military operations.

For the 2021 LSSIP Ireland Report, the current arrangement within the Authority, is that provision of Air Traffic Services (ATS) and Safety Regulation are functionally separate. The referenced separation of Regulator (IAA) and ANSP (to be vested as AirNav Ireland) is expected to be completed by the end of June 2022, creating two distinct entities, with separate Chief Executives for both ”new” organisations.

A chart depicting the structure of the SRD/NSA and its organisational dependence for the 2021 LSSIP Ireland Report, reflecting the current arrangements within the IAA is shown in Annexes of this document.

The safety regulatory function falls under the remit of the Safety Regulation Division and is responsible for a number of tasks including:

- Rule making
- Safety oversight
- Safety performance monitoring and
- ATM safety occurrence analysis.

Annual Report published:	2020	IAA 2020 Annual Report

IAA Web site: www.iaa.ie

IAA Operations Division (ANSP)

Service provided

Air Traffic Services in Irish airspace (En-route Business Unit), in the Shannon Oceanic Transition Area, in the Northern Oceanic Transition Area and Communication services in the Shanwick Area are provided by the Operations Division of the IAA. Air Traffic Services at Dublin, Shannon and Cork Airports are also performed by the Operations Division of the IAA (all part of the Terminal Services Business Unit), however, in the rest of Irish airports; these services are performed by the respective Airport Authorities.

Further detailed information can be found in Section 6 of this report, Annexes.

The following Table lists information about the Irish Provider of Civil Air Navigation Services:

Name of the ANSP:	**IAA Operations Division**		
Governance:	Semi-State Company since 1.1.1994	**Ownership:**	100% state-owned
Services provided	**Y/N**	**Comment**	
ATC en-route	Y		
ATC approach	Y		
ATC Aerodrome(s)	Y		
AIS/AIM/ARO	Y		
CNS	Y		
MET	Y	MET Eireann: Provided service to the ANSP as a Reg (EU) 2017-373 Certified Entity	
ATCO training	Y	IAA partner in Entry Point North Ireland (EPNI) for training delivery	
Others	Y	Communication Services in the Shanwick Area	
Additional information:	Functional separation from Regulatory Authority		
Provision of services in other State(s):	Y		
Annual Report published:	Y	Report published internally and submitted to NSA and key statistics published on IAA Website.	

ANSP Web site: www.iaa.ie

ATC systems in use

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

FDPS

Specify the manufacturer of the ATC system currently in use:	Thales ATM (COOPANS)
Upgrade[2] of the ATC system is performed or planned?	Multiple ATM system updates on a rolling basis as required.
Replacement of the ATC system by the new one is planned?	System will be continually updated – Next Major upgrades/ Build planned 2022-2023
ATC Unit	Shannon , Dublin, Cork and Baldonnel

SDPS

Specify the manufacturer of the ATC system currently in use:	Thales ATM (COOPANS)
Upgrade of the ATC system is performed or planned?	Multiple ATM system updates on a rolling basis as required.
Replacement of the ATC system by the new one is planned?	System will be continually updated: New/Planned Upgrades that align the ATM System build with the COOPANS partners are scheduled during 2022-2023 (Builds 3.5-3.8)
ATC Unit	Shannon , Dublin, Cork and Baldonnel

Airports

General information

Dublin Airport Authority (daa) - a commercial semi-state company operates two main airports (Dublin and Cork) in Ireland. Shannon Airport Authority (SAA) was established on January 1st 2013and has total responsibility for the running and development of Shannon airport.

Airport(s) covered by the LSSIP

Referring to the List of Airports in the European ATM Master Plan Level 3 Implementation Plan Edition 2021 – Annex 2, it is up to the individual State to decide which additional airports will be reported through LSSIP for those Objectives.

Dublin Airport (DUB) is the only CP1 Airport covered in this LSSIP.

Information provided by the EUROCONTROL Public Airport Corner:
https://ext.eurocontrol.int/airport_corner_public/EIDW

Cork Airport (CRK) and Shannon Airport (SNN), the other State Airports are also referenced in the LSSIP report.

[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))

Information provided by the EUROCONTROL Public Airport Corner:
https://ext.eurocontrol.int/airport_corner_public/EICK

Note: *Ireland Regional airports are referenced under some LSSIP Implementation Objectives.*

Military Authorities

The military authorities and their interests are represented in the National Airspace Policy Body and the Standing Civil/Military Air Navigation (StaCMAN) Committee. The civil military coordination procedures and practices are contained in a Letter of Agreement (LoA) between the Department of Defence and the IAA.

Irish Military Authorities have neither regulatory nor service provision responsibilities as far as civil aviation is concerned. Military ATC units share the same facilities and systems as the civil units but they only manage the traffic within the military areas. Any military airplane transiting civil airspace will be controlled by a civil ATC unit.

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

Regulatory role

Regulatory framework and rule-making

OAT		GAT	
OAT and provision of service for OAT governed by national legal provisions?	Y	Provision of service for GAT by the Military governed by national legal provisions?	Y
Level of such legal provision: Air Corps Regulation		Level of such legal provision: N/A	
Authority signing such legal provision: General Officer Commanding Air Corps		Authority signing such legal provision: N/A	
These provisions cover:		These provisions cover:	
Rules of the Air for OAT	Y		
Organisation of military ATS for OAT	Y	Organisation of military ATS for GAT	N
OAT/GAT Co-ordination	Y	OAT/GAT Co-ordination	N/A
ATCO Training	Y	ATCO Training	N/A
ATCO Licensing	Y	ATCO Licensing	N/A
ANSP Certification	Y	ANSP Certification	N/A
ANSP Supervision	Y	ANSP Supervision	N/A
Aircrew Training	Y	ESARR applicability	N/A
Aircrew Licensing	Y		
Additional Information: -		Additional Information: -	
Means used to inform airspace users (other than military) about these provisions:		Means used to inform airspace users (other than military) about these provisions:	
National AIP	N/A	National AIP	N/A
National Military AIP	N/A	National Military AIP	N/A
EUROCONTROL eAIP	N/A	EUROCONTROL eAIP	N/A
Other:		Other:	

Oversight

OAT	GAT
National oversight body for OAT: Air Corps Baldonnel	NSA (as per SES reg. 550/2004) for GAT services provided by the military: N/A
Additional information: -	Additional information: -

Service Provision role

OAT			GAT	
Services Provided:			Services Provided:	
En-Route	Y	MIL	En-Route	N/A
Approach/TMA	Y	MIL	Approach/TMA	N/A
Airfield/TWR/GND	Y	MIL	Airfield/TWR/GND	N/A
AIS	Y	MIL	AIS	N/A
MET	N	National MET Authority	MET	N/A
SAR	Y	MIL	SAR	N/A
TSA/TRA monitoring	Y	MIL	FIS	N/A
Other: N/A			Other:	N/A
Additional Information:			Additional Information:	

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

User role

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

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

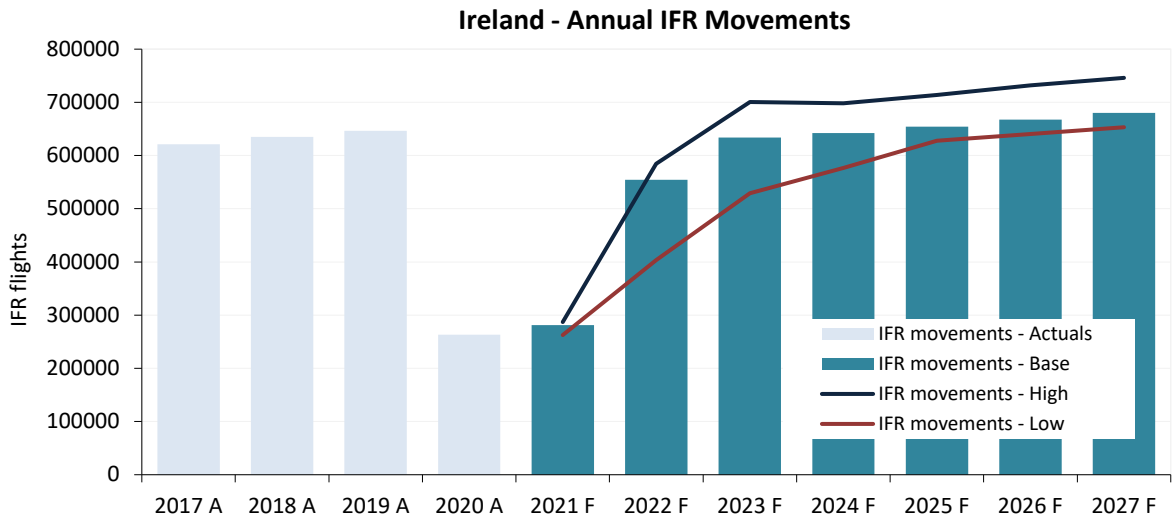
If Military fly GAT-IFR inside controlled airspace, specify existing special arrangements:								
No special arrangements				Y	Exemption from Route Charges			Y
Exemption from flow and capacity (ATFCM) measures				N	Provision of ATC in UHF			N
CNS exemptions:	RVSM	N	8.33	N	Mode S	N	ACAS	N
Others:	N/A							

Flexible Use of Airspace (FUA)

Military 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 Ireland



EUROCONTROL Forecast Update 2021-2027 - October 2021											
IFR flights yearly growth		2018 A	2019 A	2020 A	2021 F	2022 F	2023 F	2024 F	2025 F	2026 F	2027 F
Ireland	High				9%	104%	20%	0%	2%	2%	2%
	Base	2%	2%	-59%	7%	97%	14%	1%	2%	2%	2%
	Low				0%	54%	31%	9%	9%	2%	2%
ECAC	High				28%	62%	12%	4%	2%	3%	2%
	Base	4%	1%	-55%	25%	57%	8%	5%	2%	2%	2%
	Low				21%	36%	13%	7%	7%	2%	2%

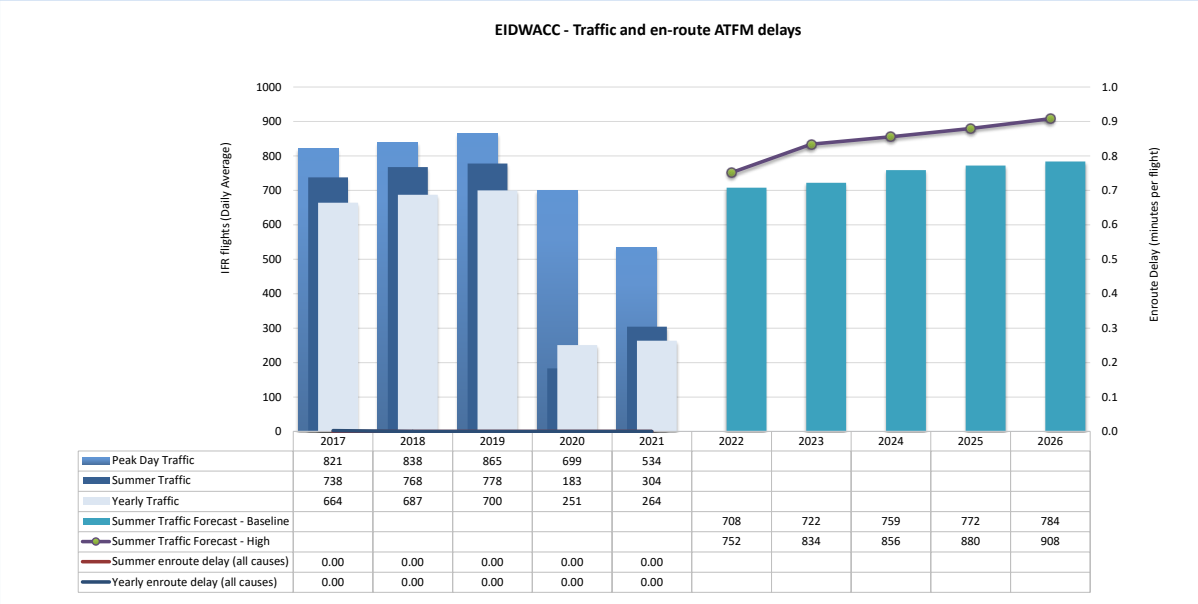
2021

Traffic in Ireland was at 46% of 2019[3].

[3] 2019: reference year for traffic recovery, prior to COVID19

2.2. **Dublin ACC**

Traffic and en-route ATFM delays 2017-2026



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Peak Day Traffic	821	838	865	699	534					
Summer Traffic	738	768	778	183	304					
Yearly Traffic	664	687	700	251	264					
Summer Traffic Forecast - Baseline						708	722	759	772	784
Summer Traffic Forecast - High						752	834	856	880	908
Summer enroute delay (all causes)	0.00	0.00	0.00	0.00	0.00					
Yearly enroute delay (all causes)	0.00	0.00	0.00	0.00	0.00					

2021 performance

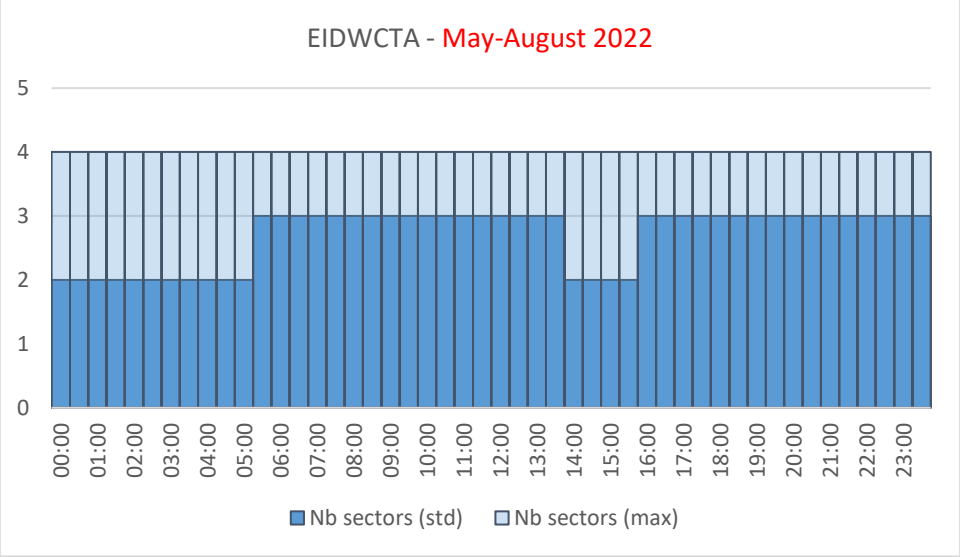
Dublin ACC	Traffic (% of 2019)	En-route Delay (min. per flight)		Capacity	
		All reasons	ACC Reference Value	Capacity Gap?	Baseline
Year	38%	0.00	0.01	No	
Summer	39%	0.00			47

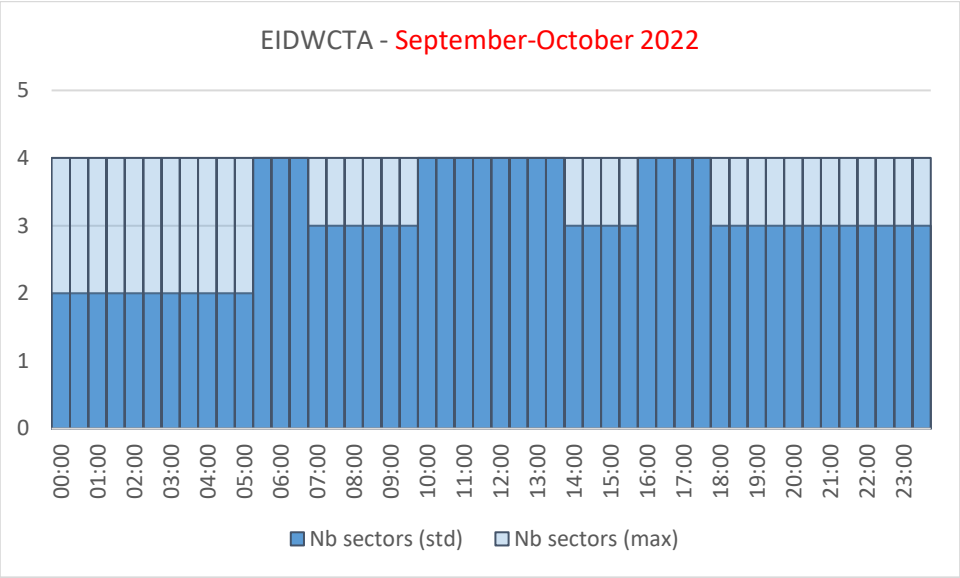
Summer 2021 performance assessment		
The average delay per flight was zero in Summer 2021.		
Operational actions	**Achieved**	**Comments**
Improved ATFCM, including STAM	Yes	
UK / Ireland initiatives	Yes	
On-going recruitment to maintain staff levels	Yes	
Cross rating training	Yes	
Re-evaluation of sector capacities (CAPAN)	Yes	
Upgrade of ATM System	Yes	

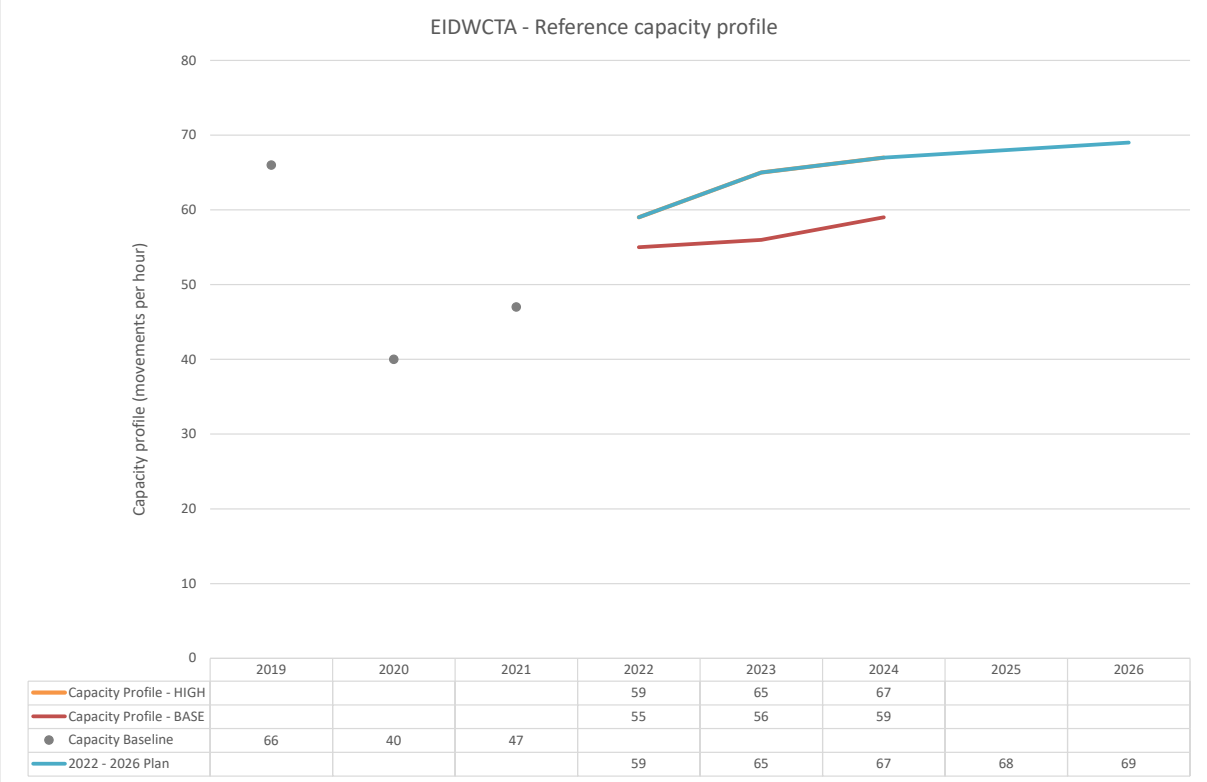
Planning Period – Summer 2022-2026

The planning focuses on the Summer season to reflect the most demanding period of the year from a capacity perspective. This approach ensures consistency with the previous planning cycles.
The measures for each year are the measures that will be implemented before the summer season.

Summer Capacity Plan					
	2022	2023	2024	2025	2026
Free Route Airspace					
Airspace Management Advanced FUA					
Airport & TMA Network Integration	New parallel runway 28R/10L				
	Extended AMAN				
Cooperative Traffic Management	Improved ATFCM, including STAM				
Airspace	UK / Ireland initiatives				
Procedures	New Sectorisation of airspace				
Staffing	Staffing levels will be reviewed on an ongoing basis				
	Cross rating training				
Technical					
Capacity					
Significant Events					
Max sectors	4	4	5	5	5
Planned Annual Capacity Increase	26%	10%	3%	2%	2%
Capacity Profile - Base Annual % Increase	17%	2%	5%		
Capacity Plan v. Profile - Base	7%	16%	14%		
Capacity Profile - High Annual % Increase	26%	10%	3%		
Capacity Plan v. Profile - High	0%	0%	0%		
Annual Reference Value (min)	0.03	0.03	0.03		
Additional information					





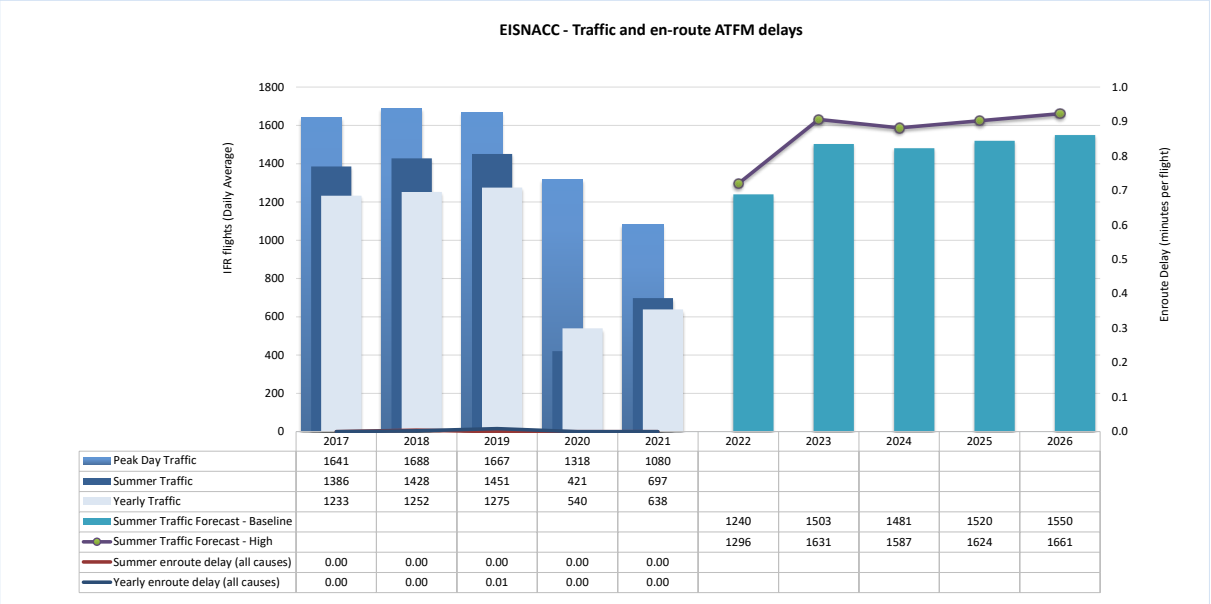


	2019	2020	2021	2022	2023	2024	2025	2026
Capacity Profile - HIGH				59	65	67		
Capacity Profile - BASE				55	56	59		
Capacity Baseline	66	40	47					
2022 - 2026 Plan				59	65	67	68	69

2022-2026 Outlook
No capacity issues are foreseen for Dublin ACC for the period 2022-2026.

2.3. Shannon ACC

Traffic and en-route ATFM delays 2017-2026



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Peak Day Traffic	1641	1688	1667	1318	1080					
Summer Traffic	1386	1428	1451	421	697					
Yearly Traffic	1233	1252	1275	540	638					
Summer Traffic Forecast - Baseline						1240	1503	1481	1520	1550
Summer Traffic Forecast - High						1296	1631	1587	1624	1661
Summer enroute delay (all causes)	0.00	0.00	0.00	0.00	0.00					
Yearly enroute delay (all causes)	0.00	0.00	0.01	0.00	0.00					

2021 performance

Shannon ACC	Traffic (% of 2019)	En-route Delay (min. per flight)		Capacity	
		All reasons	ACC Reference Value	Capacity Gap?	Baseline
Year	50%	0.00	0.01	No	
Summer	48%	0.00			83

Summer 2021 performance assessment
The average delay per flight was zero in Summer 2021.

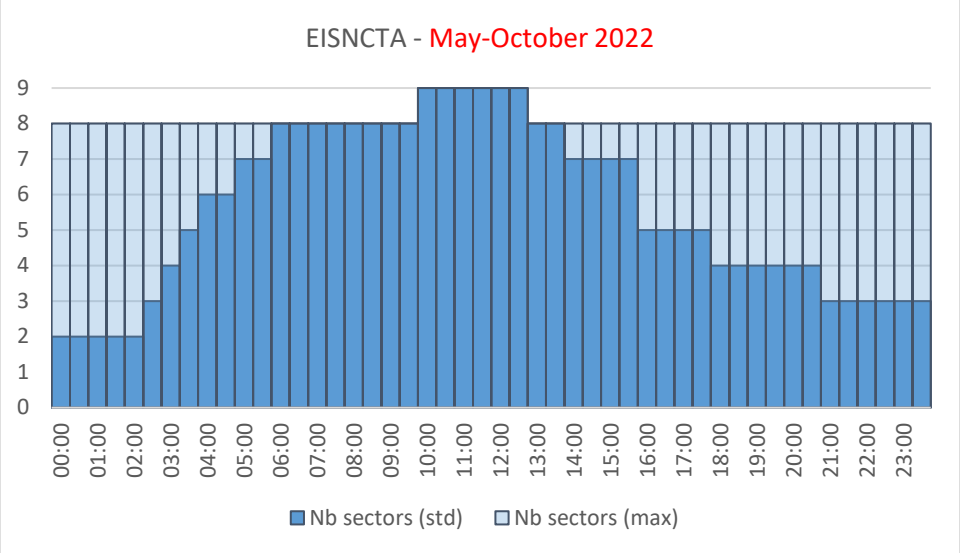
Operational actions	Achieved	Comments
Improved ATFCM, including STAM	Yes	
UK / Ireland initiatives	Yes	
Low level airspace reorganisation	Yes	
CPDLC (FANS and ATN)	Yes	
Developing Queue Management programme	Yes	
On-going recruitment to maintain staff levels	Yes	
Dynamic sectorisation available	Yes	
Re-evaluation of sector capacities (CAPAN) – low sectors	Yes	

Planning Period – Summer 2022-2026

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

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

Summer Capacity Plan					
	2022	2023	2024	2025	2026
Free Route Airspace					
Environment CCO/CDO	Environment Improvements CCO/CDO				
Airspace Management Advanced FUA					
Airport & TMA Network Integration					
Cooperative Traffic Management	Improved ATFCM, including STAM				
Airspace		Airspace re-organisation			
	UK, Ireland, Brest initiatives				
Procedures	CPDLC (FANS and ATN)				
	Developing Queue Management programme				
Staffing	Staffing levels will be reviewed on an ongoing basis				
	Cross rating training				
Technical	Dynamic sectorisation available				
Capacity					
Significant Events					
Max sectors	10	11	11	11	11
Planned Annual Capacity Increase	31%	21%	0%	2%	2%
Capacity Profile - Base Annual % Increase	25%	20%	0%		
Capacity Plan v. Profile - Base	5%	6%	6%		
Capacity Profile - High Annual % Increase	31%	21%	0%		
Capacity Plan v. Profile - High	0%	0%	0%		
Annual Reference Value (min)	0.03	0.03	0.03		
Additional information					



	2019	2020	2021	2022	2023	2024	2025	2026
Capacity Profile - HIGH				109	132	132		
Capacity Profile - BASE				104	125	125		
Capacity Baseline	128	49	83					
2022 - 2026 Plan				109	132	132	135	138

2022-2026 Outlook
No capacity issues are foreseen for Shannon ACC for the period 2022-2026.

3. Implementation Projects

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

3.1. National projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Communications - Migration to VOIP and System Wide Information Management (SWIM) capabilities	IAA-ATS Provider (IE)	2020-2023	The project to migrate to Voice Over Internet Protocol (VOIP) and develop System Wide Information Management (SWIM) capabilities is required to meet SESAR requirements. Ongoing. System update completed in 2018-2021. A new en-route contingency centre is fully VoIP compliant, completed Q4 2017 and now operational. The full migration and implementation planned for 2022-2023. All activity is proceeding according to plan with rollout of New Dublin Tower with VOIP capability. Rollout to Dublin ACC planned during 2022. Shannon ACC planned for implementation in 2023.	L3: COM11.2, COM11.1
Contingency	IAA-ATS Provider (IE)	Became operationally available Q4 2020.	Operationally available.	-
FDP - COOPANS	IAA-ATS Provider (IE)	Continuous upgrades (Yearly rollout release). Next major upgrades planned during the period 2021-2023: Builds 3.5; 3.6; 3.7 & 3.8)	Ongoing	L3: FCM03, ITY-FMTP, ATC12.1

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Surveillance & Navigation - ILS programme	IAA-ATS Provider (IE)	Updated and under continuous review.	ILS replacement programme on track with new ILS systems installation for Dublin (EIDW) completed in 2021 for planned operations from August 2022, subject to flight calibration completion. Note: New parallel runway at EIDW planned for operations 2022.	-
Surveillance & Navigation - Radar replacement	IAA-ATS Provider (IE)	2019-2023	As a consequence of the 2006-2012 national Radar Replacement program, a layer of Mode-S coverage of all IAA airspace has been delivered for all IAA ANSP Radar Sites. ADS-B is in the process of being brought to operational availability during 2022-2023.	-

3.2. FAB projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Introduction of NATS Prestwick and Swanwick FRA	IAA-ATS Provider (IE)	2021: Delivery for Prestwick (Scottish FIR). Swanwick deliverables ongoing with West Airspace FRA planned March 2023.	Ongoing.	-

3.3. Multinational projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Borealis ASM	IAA-ATS Provider (IE)	Delivery of multi-FAB FRA with various milestones	Ongoing across Borealis Alliance (9 ANSPs)	-
Borealis Cross Border Dynamic Sectorisation CBDS	AVINOR AS (NO), EANS (EE), Fintraffic ANS (FI), IAA-ATS Provider (IE), LFV (SE), LGS (LV), NATS (UK), Naviair (DK)	-	Planning stage	L3: AOM21.2
Borealis FRA - Introduction of FRA across 9 ANSPs (2015_227_AF3_A; 2015_227_AF3_B)	AVINOR AS (NO), EANS (EE), Fintraffic ANS (FI), IAA-ATS Provider (IE), LFV (SE), LGS (LV), NATS (UK), Naviair (DK)	2016-2023 (and beyond)	FRA implementation is still on-going in UK with next deliverable expected to be completed in 2023. Meanwhile, the IAA expanded Free Route Airspace (FRA) in 2017 to include Low Level airspace from FL075. In 2019 the Borealis Alliance commenced cross-border FRA between the Maastricht UAC area of responsibility, the DK/SE FAB and the northern part of Germany and remains open to considering other cross-border proposals should they arise. Successful FRA implementation in NEFRA airspace enabled the removal of ATS routes in Estonia and Finland. NATS implemented FRA in the Scottish FIR in December 2021. UK western airspace FRA (Project LD1.1) implementation planned for March 2023.	L3: AOM21.2 DP: 2015_227_AF3_A and 2015_227_AF3_B; Family 3.2.4
Borealis U-Space/UTM Co-ordination Group	IAA-ATS Provider (IE)	Application of U-Space / UTM services with delivery to reflect EASA regulation (2021-2025)	Ongoing.	-
Harmonisation of Technical ATM Platform in 6 ANSP including support of free Route Airspace and preparation of PCP program (COOPANS B3.3 , B3.4 and B4.1) (2015_207_AF3_A;2015_207_AF3_B)	Austrocontrol (AT), CCL Service Provider (HR), IAA-ATS Provider (IE), LFV (SE), Naviair (DK) NavPortugal (PT)	2021-2023 (For Builds: 3.5; 3.6; 3.7; 3.8)	Reflected in planned COOPANS Builds 2021-2023 and beyond	DP: 2015_207_AF3_A and 2015_207_AF3_B; Family 3.2.1

4. Cooperation activities

4.1. FAB Co-ordination

The UK-Ireland FAB has been operational since 2008. A substantial amount of work has been undertaken by the ANSPs, the Customer airlines and Military participants under the management of the joint NATS and IAA ANSP 'FAB Management Board', with oversight provided by the joint NSA's 'FAB Supervisory Committee' on behalf of the Member States.

2021 Update

UK/IRL FAB activities in relation to airspace development are largely being run under the auspices of the Borealis Alliance, in particular in the area of FRA.

Good interaction continues between the FAB partners at operational and planning levels, e.g. FAB ASM, Network Management and operational projects, most notable in regard to airspace changes in the UK Sectors interfacing with the Shannon FIR. Only one live project is recorded for the 2021 LSSIP Report, which doesn't reflect fully the ongoing positive and regular engagement between the two ANSPs

In 2021, NATS, the IAA and DSNA worked collaboratively to implement FRA in delegated airspace: "TAKAS Box and PEMAK Triangle completed in December 2021.

4.2. Multinational cooperation initiatives

Borealis Alliance

The Borealis Alliance is an industrial partnership between 9 European ANSPs - LFV (Sweden), ANS Finland (Finland), Avinor (Norway), Isavia ANS (Iceland), Naviair (Denmark), EANS (Estonia), IAA (Ireland), LGS (Latvia) and NATS (UK). The objective of the Alliance is to enable joint initiatives to improve flight efficiency and reduce environmental impact, delivered across the whole area in a move which will also streamline the cost of services and operational/technical infrastructure.

The Alliance continues to work on Free Route Airspace (FRA) Programme execution to create a multi-FAB FRA by establishing interfaces between FRA areas in 3 FABs and Iceland. FRA implementation is still on-going in UK and is expected to be completed in 2023. Meanwhile, the IAA expanded Free Route Airspace (FRA) in 2017 to include Low Level airspace from FL075. In 2019 the Borealis Alliance commenced cross-border FRA between the Maastricht UAC area of responsibility, the DK/SE FAB and the northern part of Germany; and remains open to considering other cross-border proposals should they arise. Successful FRA implementation in NEFRA airspace enabled the removal of ATS routes in Estonia and Finland. NATS implemented FRA in the Scottish FIR in December 2021.

Other work streams are being examined by the Borealis members, most notably in recent years the rollout of U-Space services and the opportunities for the alliance to develop joint strategies for this rapidly expanding new aviation stakeholder.

COOPANS

On the 3rd of April 2006, the IAA, LFV Group (Sweden) and Naviair (Denmark) signed a contract with Thales ATM to mark the initiation of a purchasing agreement known as COOPANS. Each of these ANSPs had previously procured, under separate contracts, the Thales EUROCAT ATM System and the objective of this agreement is to facilitate the joint procurement of upgrades to their existing common systems.

Joint procurement under COOPANS facilitates upgrades to each ATM system to meet new operational needs, ensure supportability and reduce life cycle costs. The risks associated with the introduction of completely new ATM systems are also reduced through this new incremental approach.

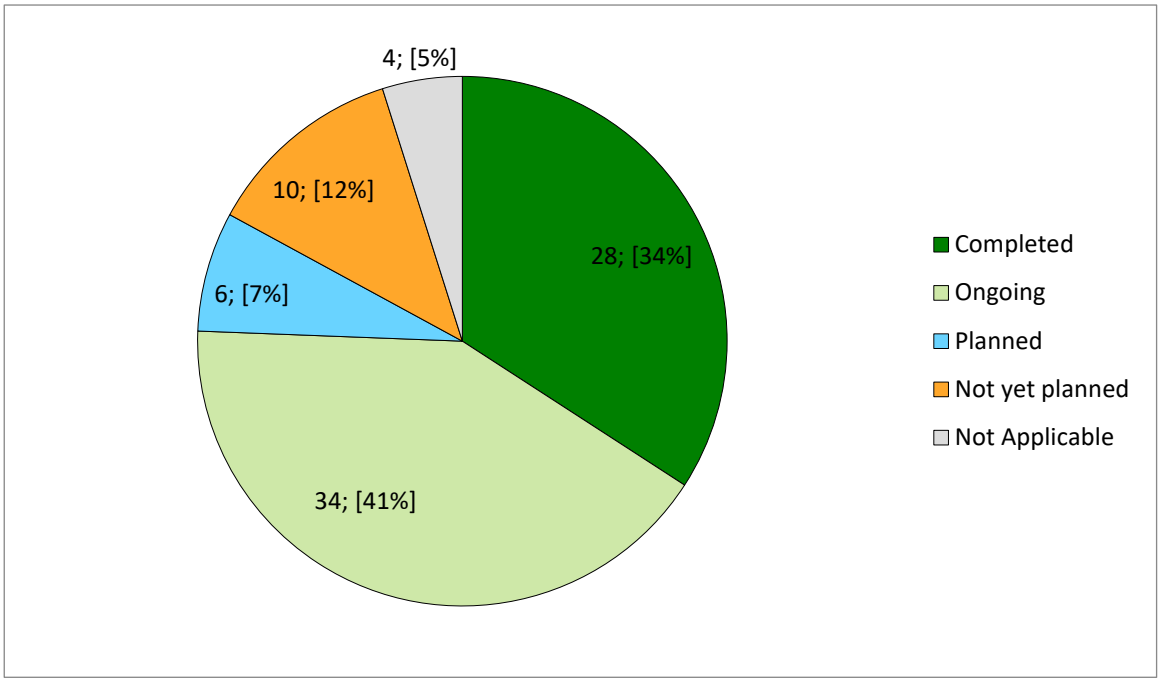
The COOPANS agreement caters for any essential requirements necessitated by the SES and SESAR initiatives. It also demonstrates the intent of the three ANSPs to collaborate in a way, which will bring real benefits to airlines whilst embracing the spirit of the Single European Sky move towards common systems. In addition, the agreement is based on an open door concept whereby other ANSPs will be able to join at a later date. As a result, Austro Control became member of COOPANS in 2010, followed by Croatia Control in 2011. Nav Portugal became a member of COOPANS in 2020 and will be commissioning their first release in due course.

The COOPANS system has been successfully in use in Dublin, Shannon, Cork and Baldonnel since April 2011. The next major COOPANS system release is Build 3.7/3.8 (incorporating Builds 3.5, 3.6 and 3.7and 3.8) scheduled for completion during 2022 and into 2023.

5. Implementation Objectives Progress

5.1. State View: Overall Objective Implementation Progress

The graph below shows progress for all Implementation Objectives (applicable and not applicable to the State).



Source: LSSIP DB

Summary of the implementation of the objectives

With the implementation of the Reg. (EU)2021/116 Common Project 1(CP1) in February 2021, this has focussed application of LSSIP Implementation Objectives to meet the Full Operational Capability (FOC) target dates. This has also brought clarity to the project planning by the IAA ANSP, daa (Dublin Airport) and MET, when considering the number of new CP1 objectives associated with MET Services (via SWIM).

In reviewing the target dates in line with both CP1 and SES deliverables, the focus of the LSSIP 2021 Ireland was on objectives that have an FOC of 2021/2022 and 2023 in the first instance and ensuring that the associated projects have been realised to meet these target dates.

The output from this activity is summarised as follows:

- CP1/ SES/Local Objectives with FOC deliverables in 2021, 2022 and 2023:

  AOM19.4 - Management of pre-defined Airspace Configurations: rollout of the LARA Cluster planned Q3-2022 should ensure that this objective FOC is met

  AOM19.5 - Once again implementation of the LARA Cluster will mean that this objective's FOC will be met

  AOP11.1 - Completion by the FOC of 31/12/2023 is on track through collaboration between the IAA ANSP, daa and MET. daa Implementation will be separately addressed following full implementation of ACDM (2022). daa are seeking funding in a collaboration with another European airport for an implementation date by 2023. Also being engaged are the MET service provider for Ireland, MET Eireann.

AOP14 - While this “Local” objective was addressed previously, rollout of Remote Towers for EINN and EICK is delayed due to competing project priorities and will be re-examined during 2022-2023

AOP19 - Departure Management Synchronised with Pre-departure sequencing: Synchronisation of departure data is being addressed by daa and the IAA ANSP to better meet this Objective. This work continues on the back of ACDM and improved DMAN and is expected to be completed by end 2022, despite the apparent lack of ANSP progress as reported here, based on currently completed objectives.

ATC18 - (Local Objective) Multi-Sector Planning En-route - 1P2T: Progress continues on this project. Staffing and Sector arrangements during COVID19 resulted in the utilisation of multi sector planners co-ordinating at a distance from socially distanced sector ATCOs. Project is also being progressed through the "NM Excellence Programme."

ENV03 - (Local Objective) Continuous Climb Operations (CCO): The IAA ANSP, as the originator/sponsor of Instrument Flight Procedures for EIDW works closely with the airport authority, daa, to maximise CCO and CDO operations. The majority of AOCs at EIDW are based at EIDW. Through monthly operations meetings (IAA ANSP, daa, AOCs), AOCs are updated on any development of flight procedures.

FCM04.2 - Enhanced Short Term ATFCM Measures: For this objective the IAA ANSP awaits NMP Flow application rollout to update this objective. This is expected to be completed to meet the target date of 31/12/2022.

FCM10 - Noting that this objective incorporates FCM05 and FCM07, FCM05 was reported as "Ongoing" for the 202O LSSIP Report. For the 2021 report this objective is reported as "Ongoing" reflecting progress in 2020 and with a target date for implementation of 31/12/2023. APO requirements added for reference although not specifically reference in the ATM Masterplan. It is also noted that NM interface arrangements are to be agreed and assessed.

FCM11.1 - Initial AOP/NOP Information Sharing: This Objective will be rolled out following introduction of the EIDW New Parallel Runway 10L/28R in August 2022, for FOC of 31/12/2023.

- New CP1 Objectives:

  With a significant number of “new” CP1 objectives introduced for the 2021 LSSIP cycle, all stakeholders have been engaging to assess the FOC deliverables and the activity required to meet these dates:

  INF10.2: SWIM PKI and Cyber Security: being actively address by the IAA ANSP, daa and MET Eireann

  INF10.3; INF10.4; INF10.5 - Aeronautical Information exchange, Airspace Structure Service, Airspace Availability Service and, Airspace Reservation (AIRES): Work has commenced to meet FOC target dates. Consistency with related objectives is also required for these items

  INF10.6 - Digital NOTAM Service: This is an ongoing project between the IAA ANSP (AIS/AIM/ARO) and the daa.

  Note: It is recognised that these objectives have a significant interaction with NM for delivery

  INF10.7; INF10.8 – Relating to aerodrome data services is actively being addressed by the daa and the IAA ANSP (AIS/AIM/ARO) in consultation with the NSA

  INF10.9; INF10.10; INF10.11; INF10.12- All relate to MET Services and are being initially addressed by MET Eireann through the rollout of the Aviation Modernisation and Automation (AMAP) Project. For INF10.9, Volcanic Ash Mass Concentration Service has a MET and IAA ANSP involvement in co-ordination with the VAAC

  INF10.13; INF10.14; INF10.15; INF10.16; INF10.17; INF10.19; INF10.20, INF10.21; INF10.23 – All relate to data exchange and are being grouped together for consultation with NM for delivery based on application of required IAAANSP, daa and MET systems requirements

- Other CP1/SES Implementation Objectives:

  As these have a later FOC, they are not primarily the focus of the 2021 LSSIP Ireland Report but have been appropriately prioritised for the 2022 Report, aligning with associate project planning

- Local FAB and Multinational Projects:

  All of these projects are reported on in Chapter 3.

5.2. Objective Progress per SESAR Essential Operational Changes

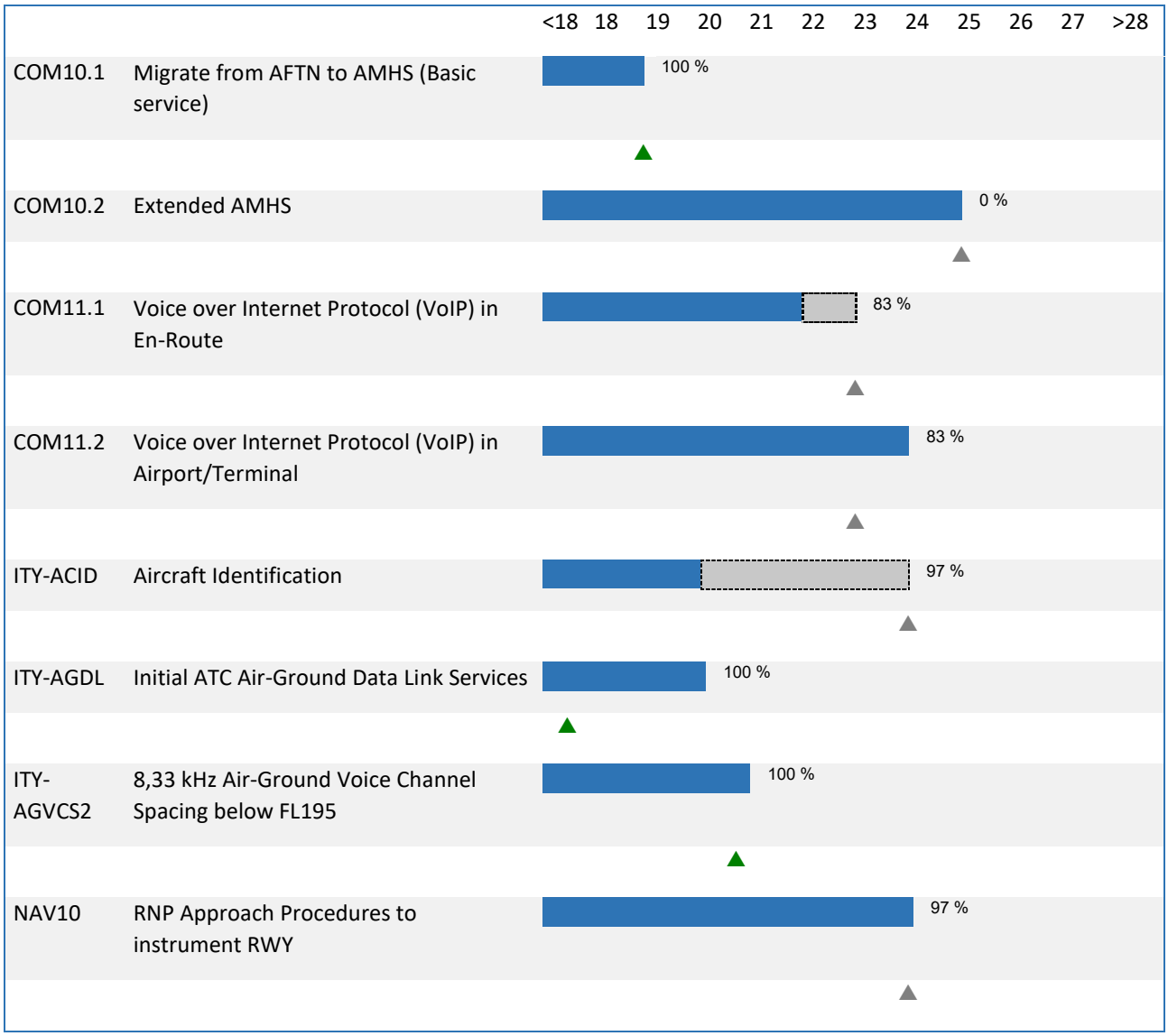
▲ 100% = Objective completed

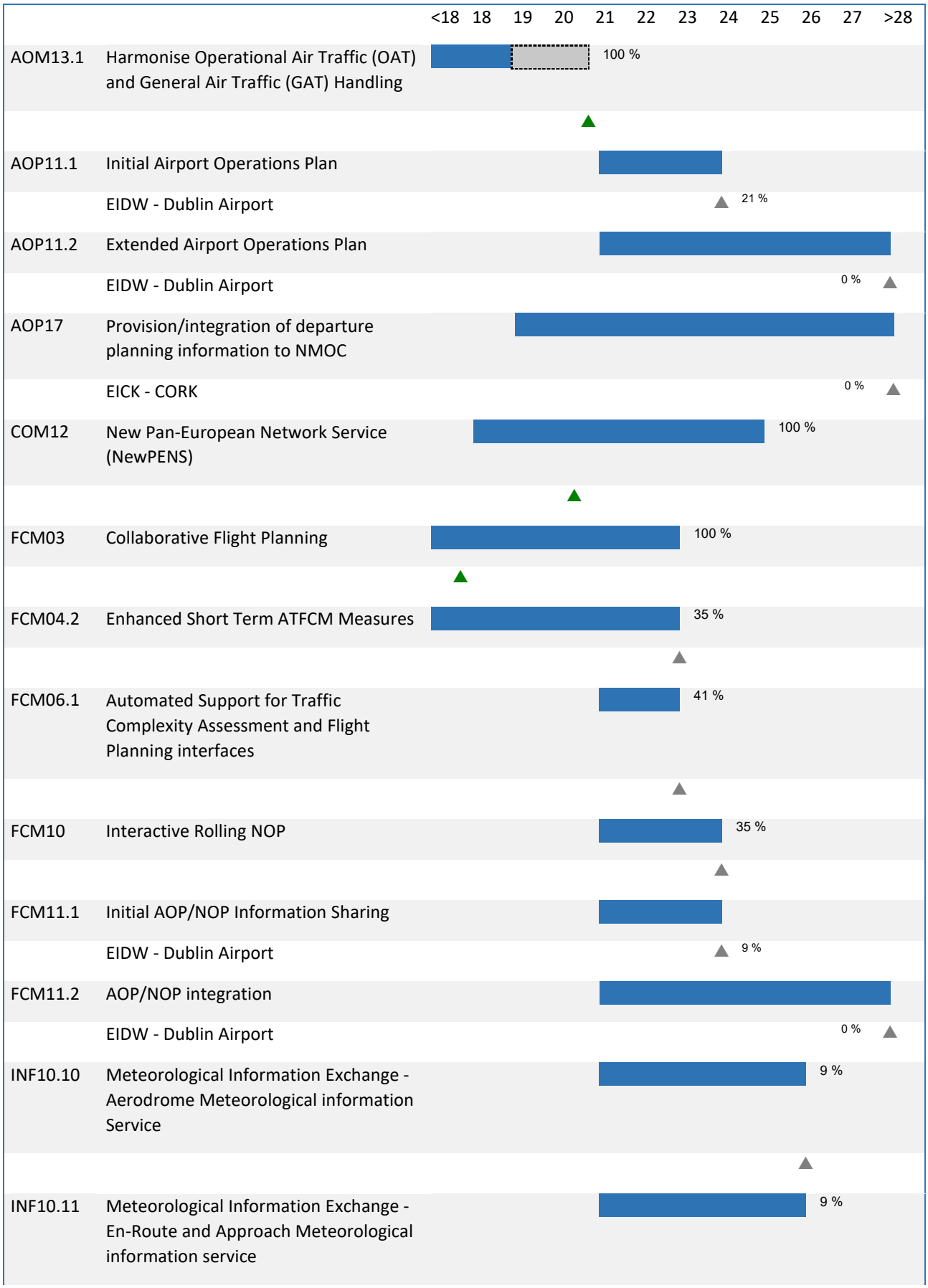
▲ ## % = Expected completion / % Progress

= Implementation Objective timeline (to FOC date)

= Completion beyond Implementation Objective timeline

CNS infrastructure and services




<18 18 19 20 21 22 23 24 25 26 27 >28
AOM13.1
Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling
100 %
AOP11.1
Initial Airport Operations Plan
EIDW - Dublin Airport
21 %
AOP11.2
Extended Airport Operations Plan
EIDW - Dublin Airport
0 %
AOP17
Provision/integration of departure planning information to NMOC
EICK - CORK
0 %
COM12
New Pan-European Network Service (NewPENS)
100 %
FCM03
Collaborative Flight Planning
100 %
FCM04.2
Enhanced Short Term ATFCM Measures
35 %
FCM06.1
Automated Support for Traffic Complexity Assessment and Flight Planning interfaces
41 %
FCM10
Interactive Rolling NOP
35 %
FCM11.1
Initial AOP/NOP Information Sharing
EIDW - Dublin Airport
9 %
FCM11.2
AOP/NOP integration
EIDW - Dublin Airport
0 %
INF10.10
Meteorological Information Exchange - Aerodrome Meteorological information Service
9 %
INF10.11
Meteorological Information Exchange - En-Route and Approach Meteorological information service
9 %

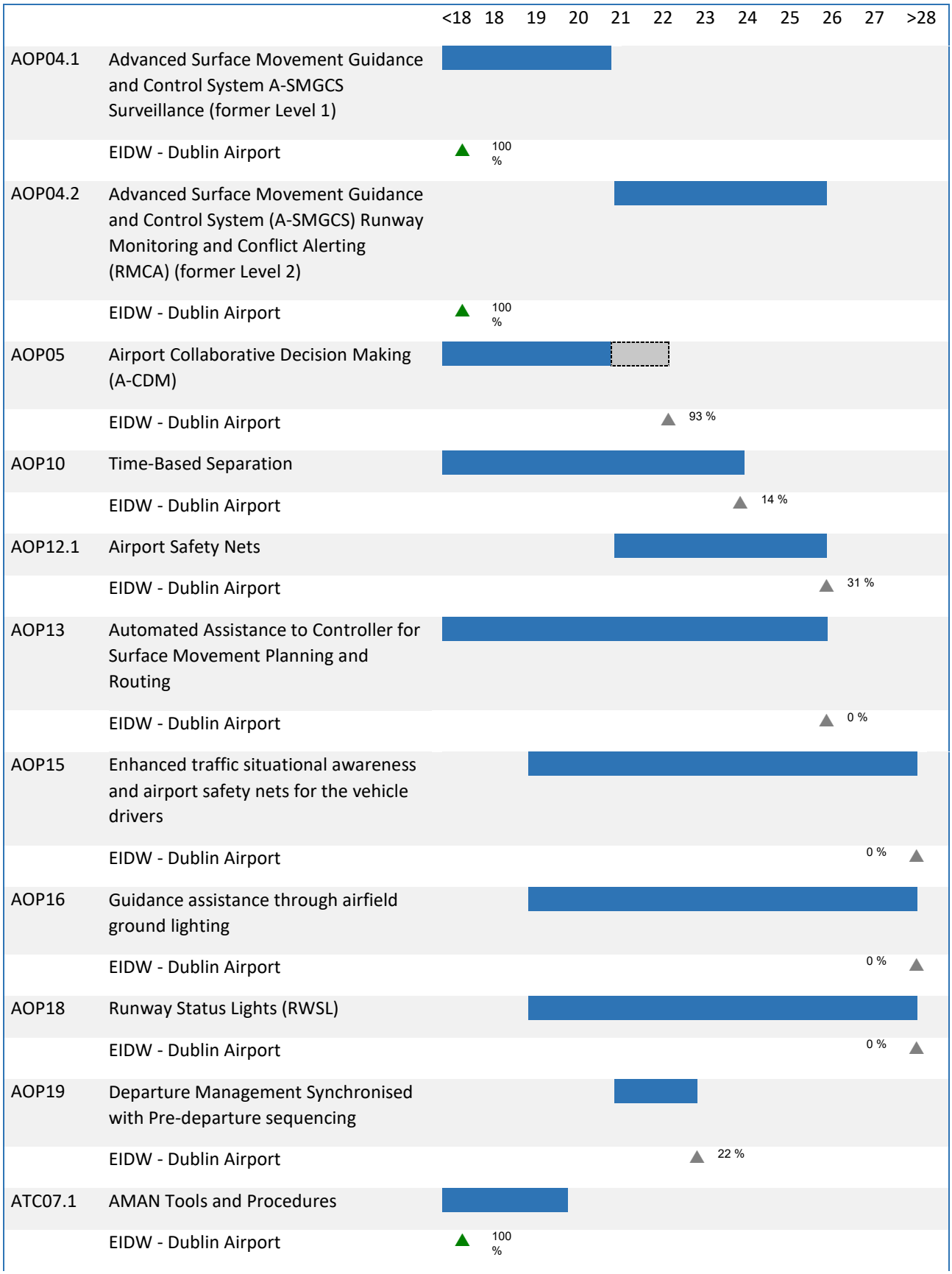
INF10.12	Meteorological Information Exchange - Network Meteorological Information	10 %
INF10.14	Cooperative Network Information Exchange Flight Management Service (Slots and NOP/AOP integration)	25 %
INF10.19	Flight Information Exchange (Yellow Profile) - Flight Data Request Service	0 %
INF10.2	Stakeholders SWIM PKI and cyber security	8 %
INF10.20	Flight Information Exchange (Yellow Profile) - Notification Service	0 %
INF10.21	Flight Information Exchange (Yellow Profile) - Data Publication Service	0 %
INF10.23	Flight Information Exchange (Yellow Profile) - Extended AMAN SWIM Service	0 %
INF10.3	Aeronautical Information Exchange - Airspace structure service	25 %
INF10.4	Aeronautical Information Exchange - Airspace Availability Service	40 %
INF10.5	Aeronautical Information Exchange - Airspace Reservation (ARES)	10 %
INF10.6	Aeronautical Information Exchange Digital NOTAM service	8 %
INF10.7	Aeronautical Information Exchange - Aerodrome mapping service	10 %

INF10.8	Aeronautical Information Exchange - Aeronautical Information Features service	10 %
INF10.9	Meteorological Information Exchange - Volcanic Ash Mass Concentration information service	0 %

		<18	18	19	20	21	22	23	24	25	26	27	>28
INF07	Electronic Terrain and Obstacle Data (eTOD)			100 %									

No implementation objectives are available yet for this EOC

		<18	18	19	20	21	22	23	24	25	26	27	>28
INF07	Electronic Terrain and Obstacle Data (eTOD)			100 %									


<18
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22
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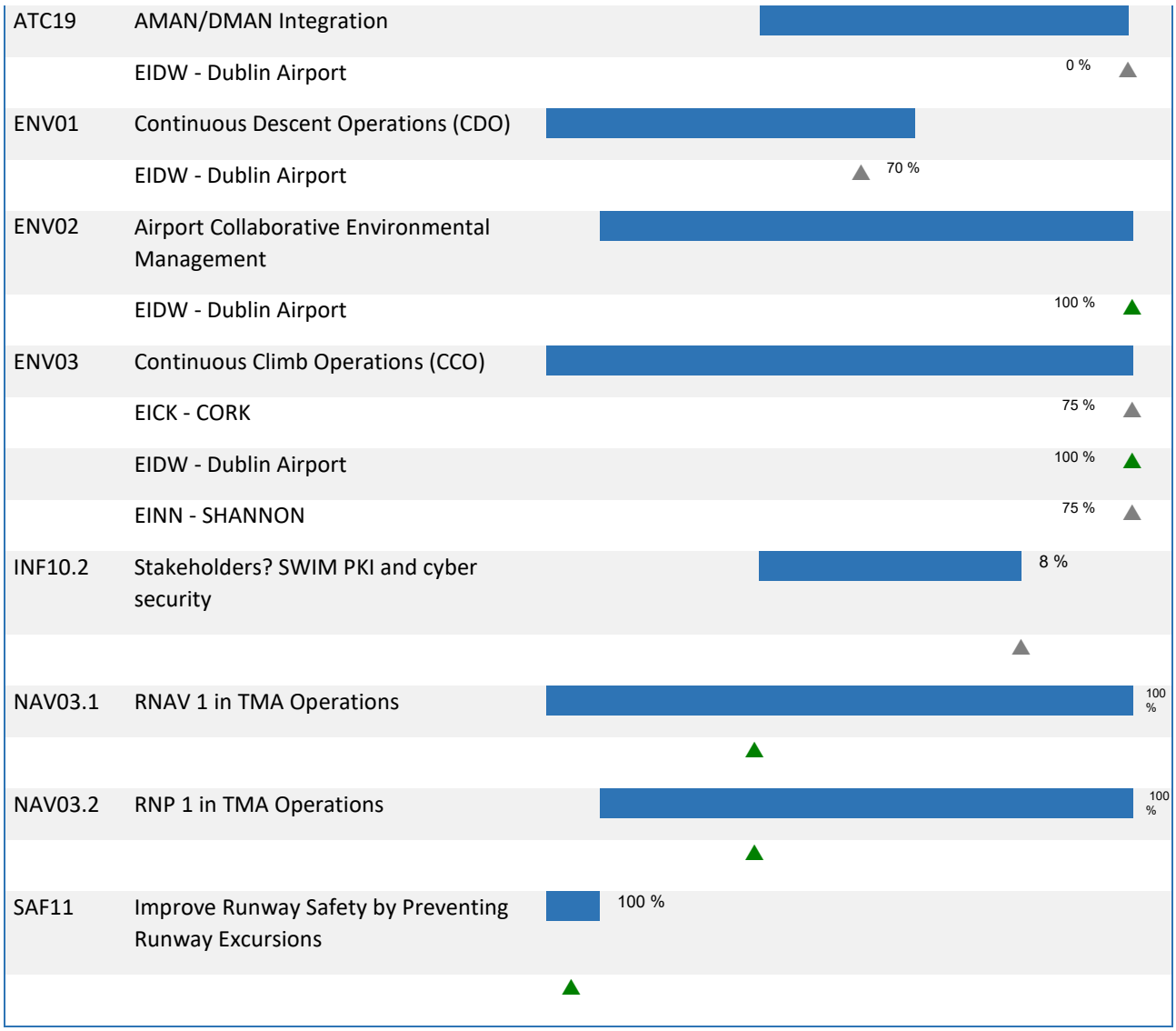
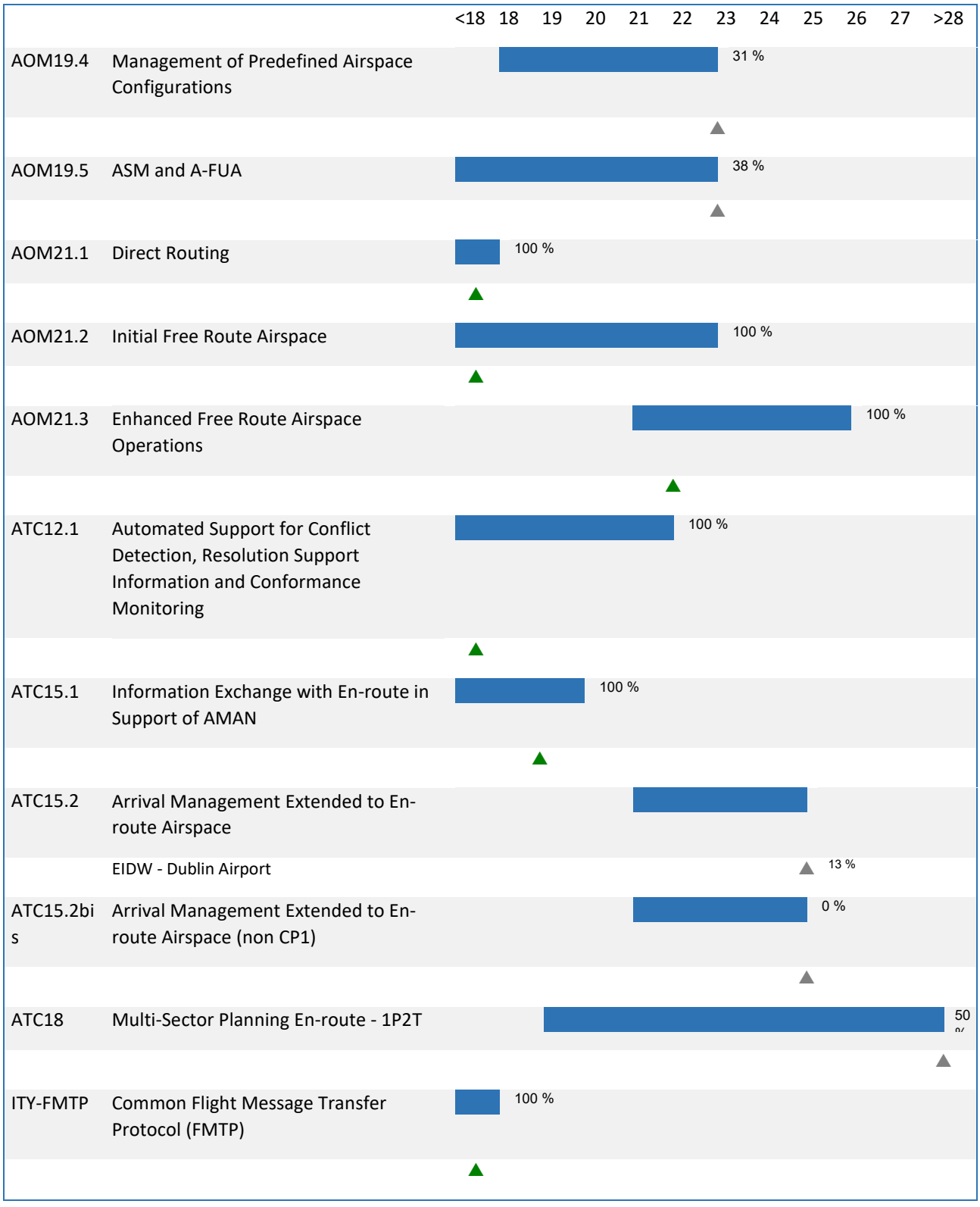
24
25
26
27
>28
AOP04.1
Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)
EIDW - Dublin Airport
100 %
AOP04.2
Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)
EIDW - Dublin Airport
100 %
AOP05
Airport Collaborative Decision Making (A-CDM)
EIDW - Dublin Airport
93 %
AOP10
Time-Based Separation
EIDW - Dublin Airport
14 %
AOP12.1
Airport Safety Nets
EIDW - Dublin Airport
31 %
AOP13
Automated Assistance to Controller for Surface Movement Planning and Routing
EIDW - Dublin Airport
0 %
AOP15
Enhanced traffic situational awareness and airport safety nets for the vehicle drivers
EIDW - Dublin Airport
0 %
AOP16
Guidance assistance through airfield ground lighting
EIDW - Dublin Airport
0 %
AOP18
Runway Status Lights (RWSL)
EIDW - Dublin Airport
0 %
AOP19
Departure Management Synchronised with Pre-departure sequencing
EIDW - Dublin Airport
22 %
ATC07.1
AMAN Tools and Procedures
EIDW - Dublin Airport
100 %


ATC19
AMAN/DMAN Integration
EIDW - Dublin Airport
0 %
ENV01
Continuous Descent Operations (CDO)
EIDW - Dublin Airport
70 %
ENV02
Airport Collaborative Environmental Management
EIDW - Dublin Airport
100 %
ENV03
Continuous Climb Operations (CCO)
EICK - CORK
75 %
EIDW - Dublin Airport
100 %
EINN - SHANNON
75 %
INF10.2
Stakeholders? SWIM PKI and cyber security
8 %
NAV03.1
RNAV 1 in TMA Operations
100 %
NAV03.2
RNP 1 in TMA Operations
100 %
SAF11
Improve Runway Safety by Preventing Runway Excursions
100 %


<18
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22
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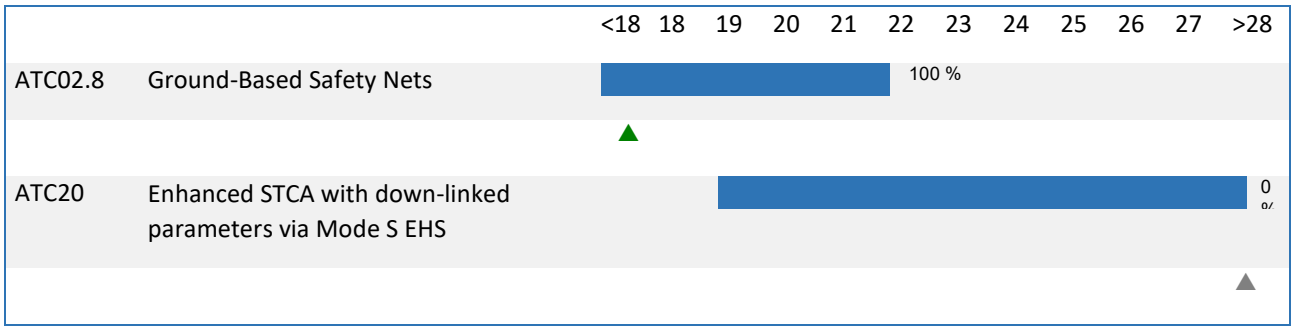
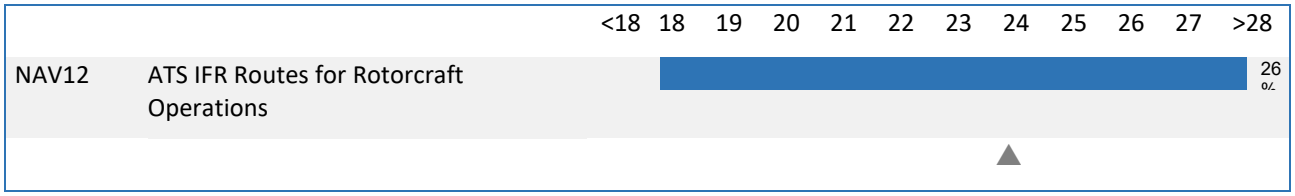
27
>28
AOM19.4
Management of Predefined Airspace Configurations
31 %
AOM19.5
ASM and A-FUA
38 %
AOM21.1
Direct Routing
100 %
AOM21.2
Initial Free Route Airspace
100 %
AOM21.3
Enhanced Free Route Airspace Operations
100 %
ATC12.1
Automated Support for Conflict Detection, Resolution Support Information and Conformance Monitoring
100 %
ATC15.1
Information Exchange with En-route in Support of AMAN
100 %
ATC15.2
Arrival Management Extended to En-route Airspace
EIDW - Dublin Airport
13 %
ATC15.2bis
Arrival Management Extended to En-route Airspace (non CP1)
0 %
ATC18
Multi-Sector Planning En-route - 1P2T
ITY-FMTP
Common Flight Message Transfer Protocol (FMTP)
100 %





Source: LSSIP DB

5.3.ICAO ASBU Implementation Progress

The following tables show, for each of the ASBU Elements belonging to a particular ASBU Thread and Block, the overall status, the final date foreseen for completion and the percentage of progress achieved in the current cycle.

The final set of Block 0 and Block 1 ASBU elements to be monitored in ICAO EUR Region has been approved through written consultation by European Aviation System Planning Group (EASPG) in May 2021, based on the conclusions of the EUR Global Air Navigation Plan (GANP) Transition Project Team.

Results below were determined using the LSSIP Year 2021 declared statuses and progress of the relevant Implementation objectives in accordance with the updated mapping approved by the EASPG/3 meeting.

Legend:

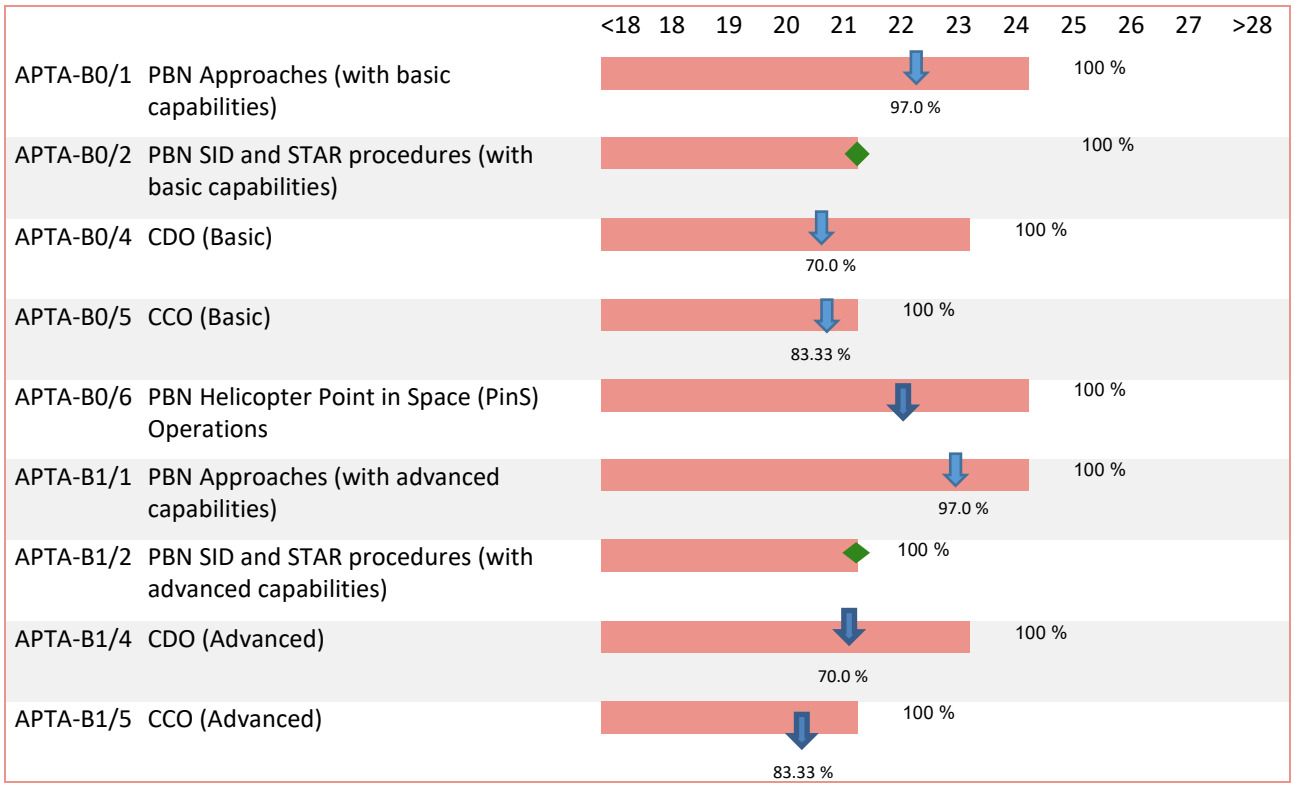
ACAS

		<18	18	19	20	21	22	23	24	25	26	27	>28
ACAS-B1/1	ACAS Improvements						100 %						

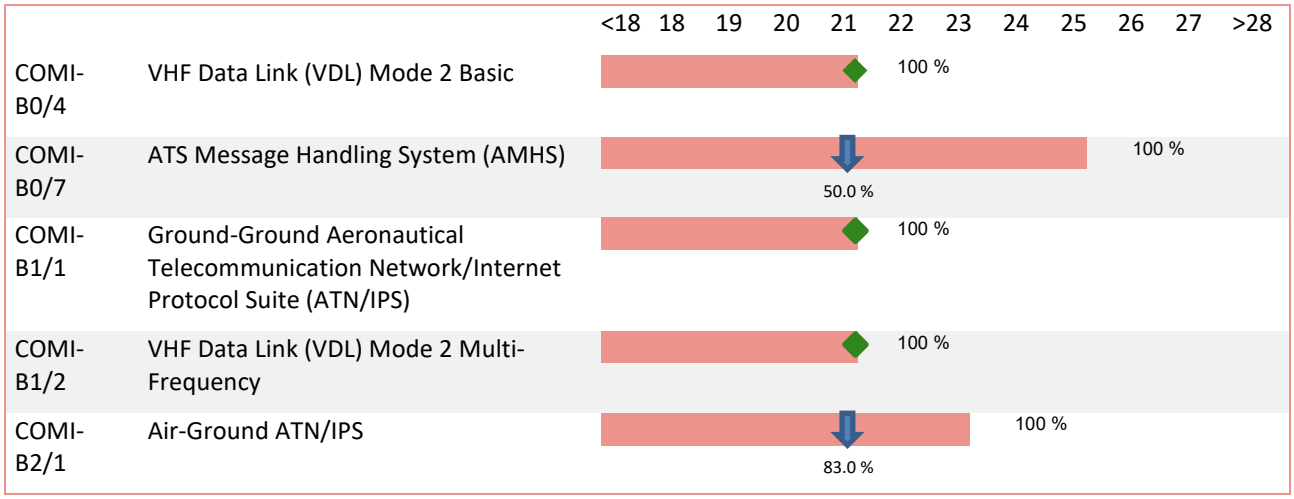
ACDM

		<18	18	19	20	21	22	23	24	25	26	27	>28
ACDM-B0/1	Airport CDM Information Sharing (ACIS)					93.0 %			100 %				
ACDM-B0/2	Integration with ATM Network function					93.0 %			100 %				
ACDM-B1/1	Airport Operations Plan (AOP)						No Plan						

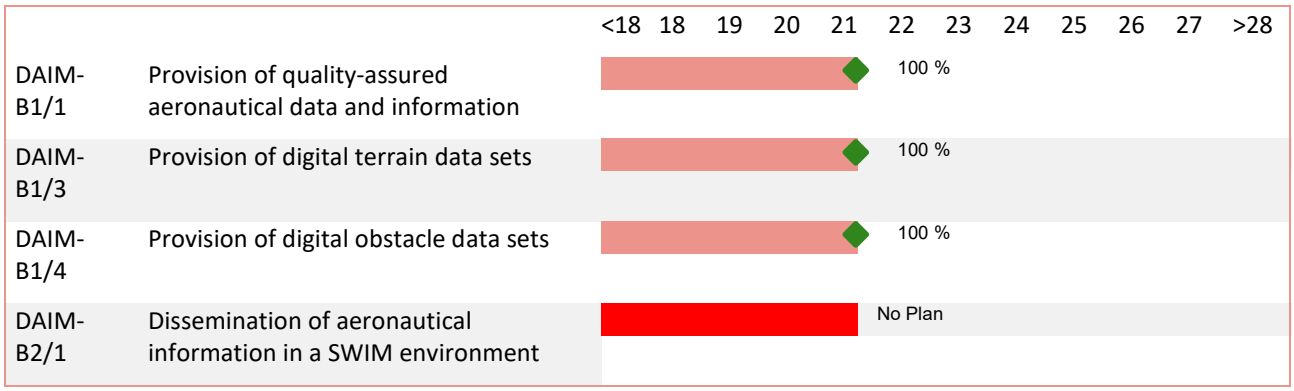
APTA


<18 18 19 20 21 22 23 24 25 26 27 >28
APTA-B0/1 PBN Approaches (with basic capabilities)
97.0 %
100 %
APTA-B0/2 PBN SID and STAR procedures (with basic capabilities)
100 %
APTA-B0/4 CDO (Basic)
70.0 %
100 %
APTA-B0/5 CCO (Basic)
83.33 %
100 %
APTA-B0/6 PBN Helicopter Point in Space (PinS) Operations
100 %
APTA-B1/1 PBN Approaches (with advanced capabilities)
97.0 %
100 %
APTA-B1/2 PBN SID and STAR procedures (with advanced capabilities)
100 %
APTA-B1/4 CDO (Advanced)
70.0 %
100 %
APTA-B1/5 CCO (Advanced)
83.33 %
100 %

COMI


<18 18 19 20 21 22 23 24 25 26 27 >28
COMI-B0/4 VHF Data Link (VDL) Mode 2 Basic
100 %
COMI-B0/7 ATS Message Handling System (AMHS)
50.0 %
100 %
COMI-B1/1 Ground-Ground Aeronautical Telecommunication Network/Internet Protocol Suite (ATN/IPS)
100 %
COMI-B1/2 VHF Data Link (VDL) Mode 2 Multi-Frequency
100 %
COMI-B2/1 Air-Ground ATN/IPS
83.0 %
100 %

DAIM



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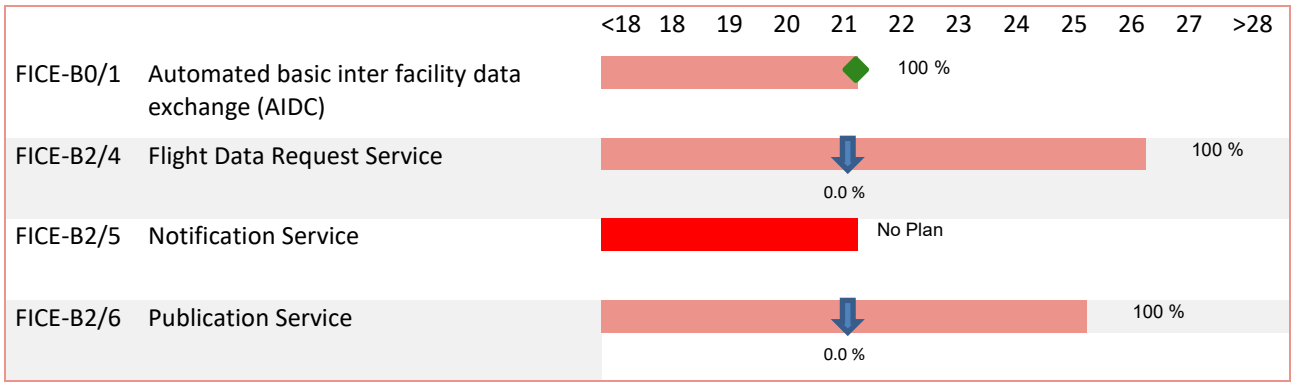

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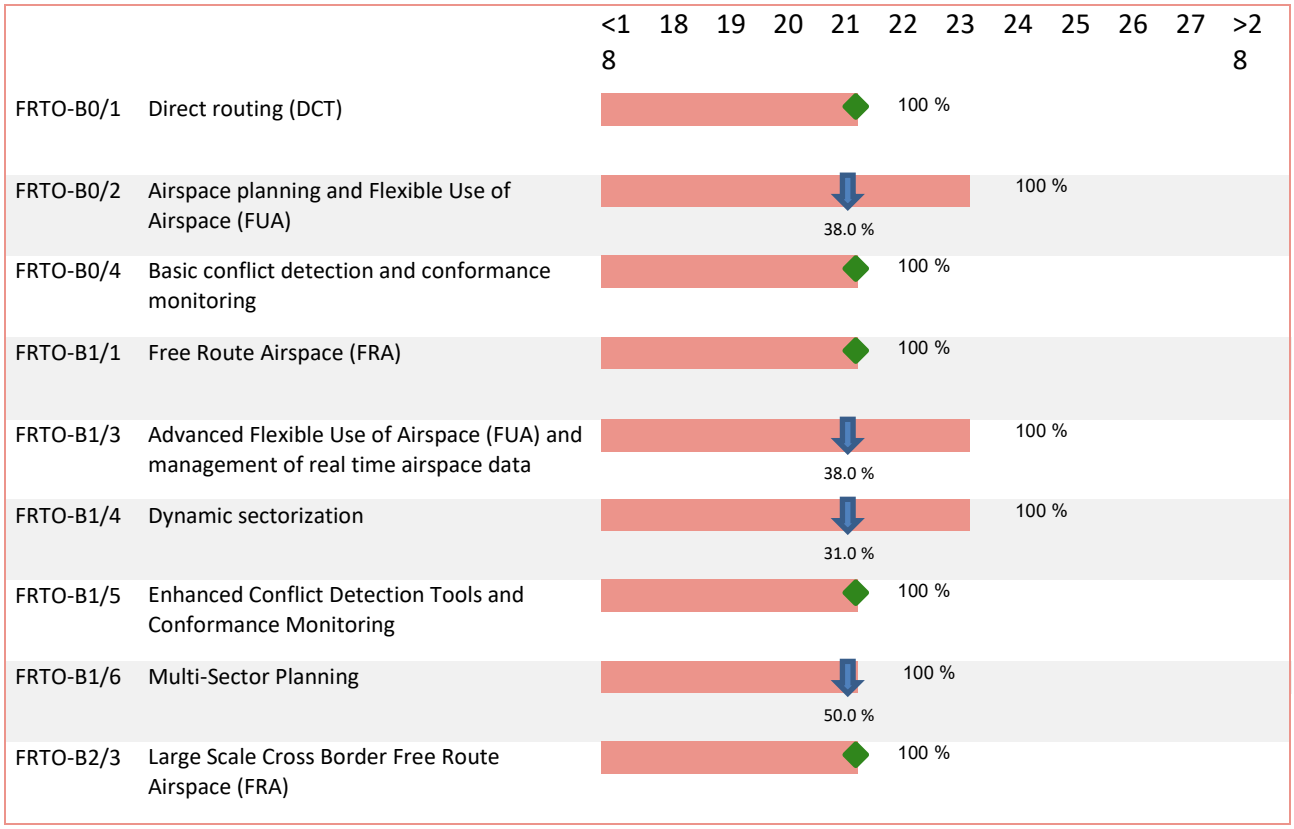


NAVS

		<18	18	19	20	21	22	23	24	25	26	27	>28
NAVS-B0/2	Satellite Based Augmentation Systems (SBAS)					97.0 %				100 %			

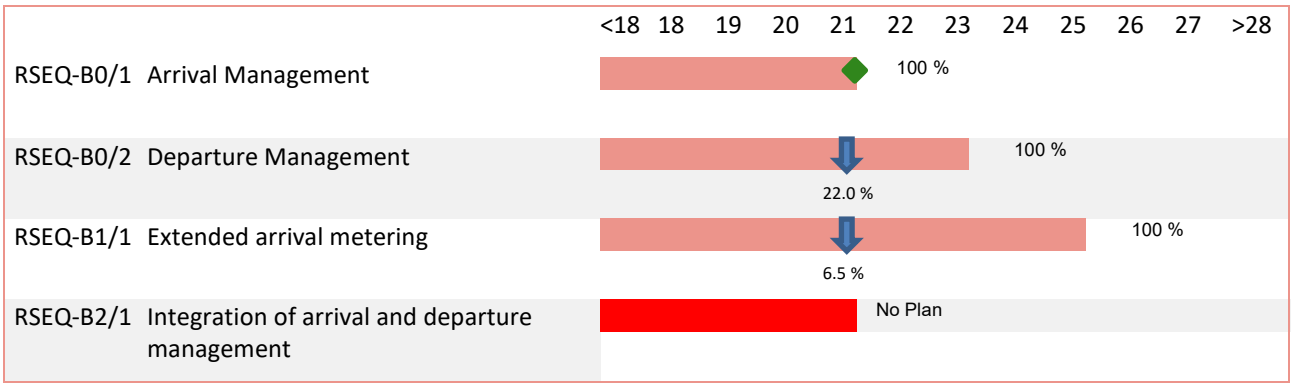
NOPS

		<18	18	19	20	21	22	23	24	25	26	27	>28
NOPS-B0/1	Initial integration of collaborative airspace management with air traffic flow management					38.0 %				100 %			
NOPS-B0/2	Collaborative Network Flight Updates												
NOPS-B0/4	Initial Airport/ATFM slots and A-CDM Network Interface					50.5 %				100 %			
NOPS-B1/1	Short Term ATFM measures					27.0 %				100 %			
NOPS-B1/2	Enhanced Network Operations Planning					24.0 %				100 %			
NOPS-B1/3	Enhanced integration of Airport operations planning with network operations planning												
NOPS-B1/4	Dynamic Traffic Complexity Management					34.0 %				100 %			
NOPS-B1/5	Full integration of airspace management with air traffic flow management					38.0 %				100 %			
NOPS-B1/6	Initial Dynamic Airspace configurations					31.0 %				100 %			
NOPS-B1/8	Extended Arrival Management supported by the ATM Network function					6.5 %					100 %		
NOPS-B1/9	Target Times for ATFM purposes					24.0 %				100 %			

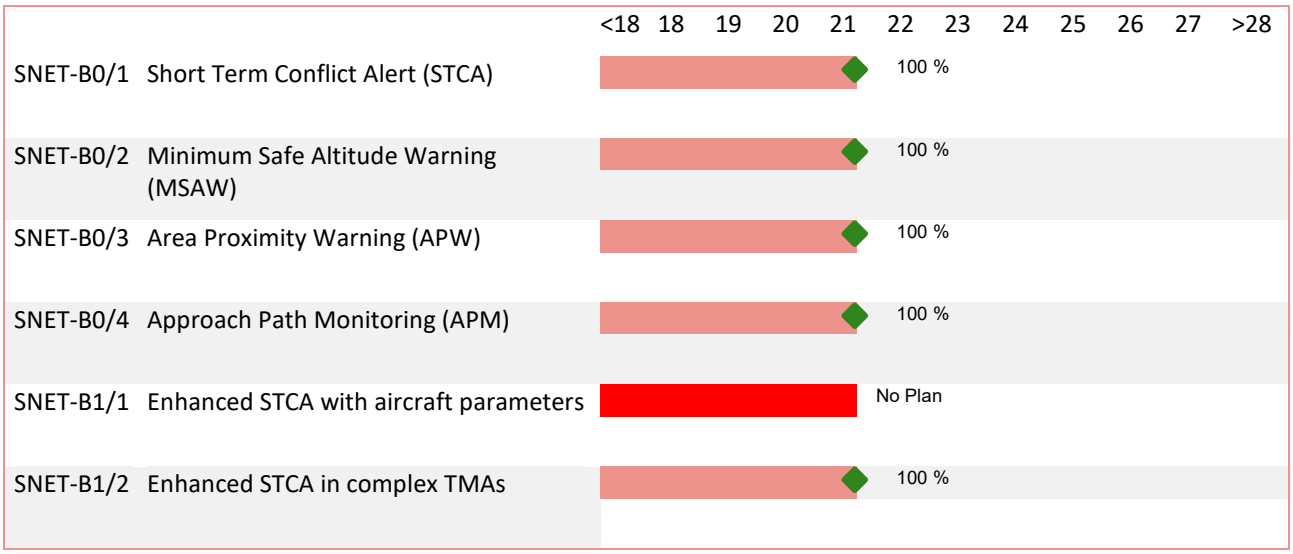
RATS

		<18	18	19	20	21	22	23	24	25	26	27	>28
RATS-B1/1	Remotely Operated Aerodrome Air Traffic Services					0.0 %							

RSEQ


<18 18 19 20 21 22 23 24 25 26 27 >28
RSEQ-B0/1 Arrival Management
100 %
RSEQ-B0/2 Departure Management
100 %
22.0 %
RSEQ-B1/1 Extended arrival metering
100 %
6.5 %
RSEQ-B2/1 Integration of arrival and departure management
No Plan

SNET


<18 18 19 20 21 22 23 24 25 26 27 >28
SNET-B0/1 Short Term Conflict Alert (STCA)
100 %
SNET-B0/2 Minimum Safe Altitude Warning (MSAW)
100 %
SNET-B0/3 Area Proximity Warning (APW)
100 %
SNET-B0/4 Approach Path Monitoring (APM)
100 %
SNET-B1/1 Enhanced STCA with aircraft parameters
No Plan
SNET-B1/2 Enhanced STCA in complex TMAs
100 %

SURF

		<18	18	19	20	21	22	23	24	25	26	27	>28
SURF-B0/2	Comprehensive situational awareness of surface operations						100 %						
SURF-B0/3	Initial ATCO alerting service for surface operations						100 %						
SURF-B1/1	Advanced features using visual aids to support traffic management during ground operations						No Plan						
SURF-B1/3	Enhanced ATCO alerting service for surface operations					35.0 %						100 %	
SURF-B1/4	Routing service to support ATCO surface operations management					0.0 %						100 %	

SWIM

		<18	18	19	20	21	22	23	24	25	26	27	>28
SWIM-B2/3	SWIM registry					8.0 %						100 %	
SWIM-B3/1	Air/Ground SWIM for safety critical information						No Plan						

5.4. Detailed Objectives Implementation progress

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

Individual Objectives progress is detailed in the following tables.

It is noted that, reflecting the challenges posed by COVID-19 for project delivery as well as financial pressure on ANSPs during 2020-2021, some objectives FOCs have been extended, which should ensure that completion target dates are met accordingly.

While the impact of COVID 19 did affect stakeholder capability to deliver objective related projects, all with an FOC in 2021, 2022 and 2023 remain on track for the 2021 Cycle with the exception of the following:

AOP05: Despite this objective being reported as Completed in 2019, the definition and implement the exchange of messages, Flight Update Message (FUM) and Departure Planning Information (DPI) between NMOC and the airport in accordance with A-CDM Manual guidelines was delayed and is scheduled for completion by April 2022. This objective is therefore recorded as "Ongoing" for the 2021 Report.

AOM13.1: FOC of 31/12/2018. This Objective was reported as completed for the 2020 Cycle

COM11.1: Voice over Internet Protocol (VoIP) in En-Route (FOC 31/12/2021). The project to migrate to Voice Over Internet Protocol (VOIP) and develop System Wide Information Management (SWIM) capabilities is required to meet SESAR requirements. The system update was completed during 2018-2021. A new en-route contingency centre (CEROC) is fully VoIP compliant, completed Q4 2017 and now operational. The full migration and implementation is planned for 2022-2023. All activity is proceeding according to plan with rollout of New Dublin Tower with VOIP capability. Rollout to Dublin ACC planned during 2022. Shannon ACC planned for implementation in 2023.

ITY-ACID: Aircraft Identification is recorded as 97% completed. The IAA ANSP have declared to NM that our systems are capable in meeting this objective, but are recording this objective as Ongoing for this cycle, as we are dependent on UK ATM system capability rollout to complete this objective.

Main Objectives

AOM13.1	**Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling** ***Timescales:*** Initial operational capability: 01/01/2012 Full operational capability: 31/12/2018		**100%**	**Completed**
	-			
Ireland has very limited OAT traffic and there is little requirement from the military to fly OAT in controlled airspace. However OAT operating as GAT is provided for through Letter of Agreement between ASP and MIL. Additionally, ASP, MIL and REG meet on a quarterly basis and this item is under discussion with reference to EUROAT and EUR DOC 032. At a national level, the National Airspace Policy Body (NAPB) meet annually and review application of FUA strategy. This forum involves ASP, MIL, REG and the State. **2020 Update: Completed.**				**30/10/2020**
REG (By:12/2018)				
Mil. Authority	The legislation at present precludes the operation of OAT in controlled airspace as OAT. However, OAT are supported in "civil airspace" and arrangements are kept under continuous review. This issue is also being monitored as part of the Military/Civil ANSP forum which meets on a quarterly basis.	-	100%	Completed 30/10/2020
IAA	The legislation at present precludes the operation of OAT in controlled airspace as OAT. However, OAT are supported in "civil airspace" and arrangements are kept under continuous review. This issue is also being monitored as part of the Military/Civil ANSP forum, which meets on a quarterly basis.	-	100%	Completed 30/10/2020
ASP (By:12/2018)				
Mil. Authority	Implemented in alignment with EUROAT Edition 3.0 update of 25th September 2018.	-	100%	Completed 30/10/2020
IAA-ATS Provider	Implemented in alignment with EUROAT Edition 3.0 update of 25th September 2018.	-	100%	Completed 30/10/2020
MIL (By:12/2018)				
IAA-ATS Provider	Implemented in alignment with EUROAT Edition 3.0 update of 25th September 2018.	-	100%	Completed 30/10/2020
Mil. Authority	Implemented in alignment with EUROAT Edition 3.0 update of 25th September 2018.	-	100%	Completed 30/10/2020

AOM19.4	**Management of Predefined Airspace Configurations** ***Timescales:*** Initial operational capability: 01/01/2018 Full Operational Capability / Target Date: 31/12/2022	**31%**	**Ongoing**
	-		
1. Implement an improved ASM solutions process, the management of pre-defined airspace configurations and the process and supporting tools for an improved ASM performance analysis: Being addressed through the rollout of LARA at UK/IRL FAB level for ASM 2. The ASM solutions process aims at delivering ASM options (e.g. predefined airspace scenarios) that can help alleviate capacity issues in the European airspace as well as improve flight efficiency assessing impact on capacity and ensuring synchronised availability of optimised airspace structures based on traffic demand: Already partially in place for the UK/IRL FAB ASM in pre-tactical management of airspace 3. Pre-defined airspace configurations are based on coordinated and validated combinations of airspace structures and ATC dynamic sectorisation, to meet airspace needs in terms of capacity and/or flight efficiency: Already in place for the Shannon FIR/UIR where dynamic sectorisation is utilised daily. For the Dublin CTA, Lateral and vertical sectors are dynamically deployed/collapsed as required, based on traffic demand. 2020 Update: Full FAB ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. 2021 Update: FAB LARA Cluster is planned to become operational Q3-2022, which in turn will mean that the IAA ANSP meets the target completion date.			**31/12/2022**
ASP (By:12/2022)			
IAA-ATS Provider	2020 Update: Full FAB ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. 2021 Update: FAB LARA Cluster is planned to become operational Q3-2022, which in turn will mean that the IAA ANSP meets the target completion date.	Borealis Cross Border Dynamic Sectorisation CBDS / Borealis FRA - Introduction of FRA across 9 ANSPs	31%	Ongoing 31/12/2022

AOM19.5	**ASM and A-FUA** ***Timescales:*** Initial Operational Capability: 01/01/2014 Full Operational Capability / Target Date: 31/12/2022	**35%**	**Ongoing**
	-		
Overall progress for this objective is dependent on the rollout of LARA in partnership with UK. **UK-IRL FAB LARA Cluster is planned to become operational Q3-2022, which in turn will mean that the IAA ANSP meets the target completion date.**			**31/12/2022**
ASP (By:12/2022)			
IAA-ATS Provider	Overall progress for this objective is dependent on the rollout of LARA in partnership with UK. UK-IRL FAB LARA Cluster is planned to become operational Q3-2022, which in turn will mean that the IAA ANSP meets the target completion date.	Harmonisation of Technical ATM Platform in 5 ANSP including support of free Route Airspace and preparation of PCP program (COOPANS B3.5, B3.6, B3.7, B3.8)	35%	Ongoing 31/12/2022

AOM21.2	**Initial Free Route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full Operational Capability / Target Date: 31/12/2022		**100%**	**Completed**
	-			
Free Route Airspace implemented in Ireland at and above FL245 since Dec ember 2009. IAA are working with NATS on the implementation of Direct Route Airspace in of Scottish airspace.				**31/12/2009**
ASP (By:12/2022)				
IAA-ATS Provider	Free Route Airspace implemented in Ireland at and above FL245 since Dec/2009. IAA are working with NATS on the implementation of Direct Route Airspace in part of Scottish airspace.	Borealis ASM / Borealis Cross Border Dynamic Sectorisation CBDS / Borealis FRA - Introduction of FRA across 9 ANSPs / Harmonisation of Technical ATM Platform in 5 ANSP including support of free Route Airspace and preparation of PCP program (COOPANS B3.5, B3.6, B3.7, B3.8)	100%	Completed 31/12/2009

AOM21.3	**Enhanced Free Route Airspace Operations** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**100%**	**Completed**
	-		
The IAA ANSP is part of the Borealis Alliance of 9 ANSPs with the aim of introducing cross-border FRA across these states. **Rollout of Borealis projects will require ATM system updates that align with this Implementation Objective.**			**31/12/2021**
ASP (By:12/2025)			
IAA-ATS Provider	The IAA ANSP is part of the Borealis Alliance of 9 ANSPs with the aim of introducing cross-border FRA across these states. Rollout of Borealis projects will require ATM system updates that align with this Implementation Objective.	Borealis ASM / Borealis Cross Border Dynamic Sectorisation CBDS / Borealis FRA - Introduction of FRA across 9 ANSPs / Harmonisation of Technical ATM Platform in 5 ANSP including support of free Route Airspace and preparation of PCP program (COOPANS B3.5, B3.6, B3.7, B3.8)	100%	Completed 31/12/2021

AOP04.1	**Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)** ***Timescales:*** Initial operational capability: 01/01/2007 Full operational capability: 31/12/2020		**100%**	**Completed**
EIDW - Dublin Airport				
ASMGCS Level 1 has been implemented in Dublin Airport.				**31/10/2009**
REG (By:12/2010)				
IAA	-	-	100%	Completed 31/08/2009
ASP (By:01/2021)				
IAA-ATS Provider	-	-	100%	Completed 31/10/2009
APO (By:01/2021)				
DUBLIN Airport Authority	-	-	100%	Completed 31/10/2009

AOP04.2	**Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)** ***Timescales:*** Initial operational capability: 01/01/2021 Full operational capability: 31/12/2025		**100%**	**Completed**
EIDW - Dublin Airport				
A-SMGCS Level 2 fully implemented at Dublin Airport.				**30/06/2011**
ASP (By:12/2025)				
IAA-ATS Provider	A-SMGCS Level 2 fully implemented at Dublin Airport.	-	100%	Completed 30/06/2011
APO (By:12/2025)				
DUBLIN Airport Authority	A-SMGCS Level 2 fully implemented at Dublin Airport.	-	100%	Completed 30/06/2011

<table>
<tr><td>AOP05</td><td colspan="2">Airport Collaborative Decision Making (A-CDM)
<u>Timescales:</u>
Initial operational capability: 01/01/2004
Full operational capability: 31/12/2020</td><td>93%</td><td>Ongoing</td></tr>
<tr><td colspan="5">EIDW - Dublin Airport</td></tr>
<tr><td colspan="4">The implementation of CDM at Dublin Airport was achieved in line with EUROCONTROL CDM Manual during 2017. Full implementation was planned for rollout in May 2017. Actual rollout was implemented in November 2017 following further stakeholder consultation. However, due to a technical issue with the IAA Electronic Flight Strip system, it was decided to revert to manual processing pending a resolution of this issue. Full re-introduction completed in Q2 2018.

2019 Update: A-CDM is locally implemented in full at EIDW. Final full implementation is expected to be completed by end Q3 2020.

2020 Update: A-CDM is locally implemented in full at EIDW. Still in validation period with NMOC. Final full implementation is expected to be completed by end Q2 2021.

2021: Despite this objective being reported as Completed in 2019, the definition and implement the exchange of messages, Flight Update Message (FUM) and Departure Planning Information (DPI) between NMOC and the airport in accordance with A-CDM Manual guidelines was delayed and is scheduled for completion by April 2022. This objective is therefore recorded as "Ongoing" for the 2021 Report.</td><td>30/04/2022</td></tr>
<tr><td colspan="5">ASP (By:01/2021)</td></tr>
<tr><td>IAA-ATS Provider</td><td>The implementation of CDM at Dublin Airport was achieved in line with EUROCONTROL CDM Manual during 2017. Full implementation was planned for rollout in May 2017. Actual rollout was implemented in November 2017 following further stakeholder consultation. However, due to a technical issue with the IAA Electronic Flight Strip system, it was decided to revert to manual processing pending a resolution of this issue. Full re-introduction was completed in Q2 2018.

2020 Update: A-CDM is locally implemented in full at EIDW. Still in validation period with NMOC. Final full implementation is expected to be completed by end Q2 2021.

2021: Despite this objective being reported as Completed in 2019, the definition and implement the exchange of messages, Flight Update Message (FUM) and Departure Planning Information (DPI) between NMOC and the airport in accordance with A-CDM Manual guidelines was delayed and is scheduled for completion by April 2022. This objective is therefore recorded as "Ongoing" for the 2021 Report.</td><td>-</td><td>100%</td><td>Completed

30/10/2017</td></tr>
<tr><td colspan="5">APO (By:01/2021)</td></tr>
<tr><td></td><td></td><td>-</td><td>88%</td><td>Ongoing</td></tr>
</table>

DUBLIN Airport Authority	Dublin Airport Authorities have completed the implementation of CDM at Dublin Airport in line with the EUROCONTROL Manual. 2020 Update: A-CDM is locally implemented in full at EIDW. Still in validation period with NMOC. Final full implementation is expected to be completed by end Q2 2021. 2021: Despite this objective being reported as Completed in 2019, the definition and implement the exchange of messages, Flight Update Message (FUM) and Departure Planning Information (DPI) between NMOC and the airport in accordance with A-CDM Manual guidelines was delayed and is scheduled for completion by April 2022. This objective is therefore recorded as "Ongoing" for the 2021 Report.			30/04/2022

AOP10	**Time-Based Separation** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2024		**14%**	**Ongoing**
EIDW - Dublin Airport				
The implementation of Time Based Separation is under consideration for Dublin as part of the implementation of a new parallel runway in the period 2020-2022-2023. With rapidly increasing traffic levels at Dublin Airport influencing the construction of a parallel runway, Time-Based Separation (TBS) for Final Approach which involves the application of time-based wake turbulence radar separation rules on final approach for consistent time spacing between arriving aircraft is likely to become a solution to a growing runway throughput issue. **Currently available Point Merge procedure for RWY10R/28L at EIDW is delivering on traffic throughput. This capability will be considered as part of procedure development for the north runway and will include consideration of TBS. Planned implementation of New RWY 10L/28R is August 2022.** **Update 2021: with the workload associated with the rollout of the new Runway at EIDW, the New Tower and the procedures for both, TBS will be delayed for implementation till 2023. For its part, MET Eireann are rolling out the AVIATION MODERNISATION AUTOMATION PROJECT (AMAP) at EIDW, EICK and EINN to support this objective.**			**31/12/2023**
REG (By:01/2024)				
IAA	The implementation of Time Based Separation is under consideration for Dublin as part of the implementation of a new parallel runway in the period 2020-2022 and regulatory approval will be part of this process. Update 2021: with the workload associated with the rollout of the new Runway at EIDW, the New Tower and the procedures for both, TBS will be delayed for implementation till 2023.	-	10%	Ongoing 31/12/2023
ASP (By:12/2024)				
MET Provider - Irish Department of Transport	Being addressed by MET Eireann for EIDW, EICK and EINN, through rollout of the AVIATION MODERNISATION AUTOMATION PROJECT (AMAP).	-	10%	Ongoing 31/12/2023
IAA-ATS Provider	The implementation of Time Based Separation is under consideration for Dublin as part of the implementation of a north parallel runway in 2020 and appropriate publication will be part of any plan. Planned for completion in 2022. Update 2021: with the workload associated with the rollout of the new Runway at EIDW, the New Tower and the procedures for both, TBS will be delayed for implementation till 2023.	-	15%	Ongoing 31/12/2023

AOP11.1	**Initial Airport Operations Plan** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2023		**21%**	**Ongoing**
EIDW - Dublin Airport				
This implementation objective is still at the "Ongoing" phase, reflecting the delayed operational target date set out as AOP11.1, replacing AOP 11 from 2020. Further interaction between the IAA ANSP and daa continues in the definition of applicable parameters to support this objective. Implementation is considered for delivery in conjunction with the introduction of ACDM. For its part, the ANSP is providing the data feed from its ATM system to daa (Dublin Airport Authority) for ACDM and agreeing "Operational" data for this specific objective. **daa Implementation will be separately addressed following full implementation of ACDM (2022). daa are seeking funding in a collaboration with another European airport for an implementation date by 2023. Also being engaged are the MET service provider for Ireland, MET Eireann.**				**31/12/2023**
ASP (By:12/2023)				
IAA-ATS Provider	-	-	14%	Ongoing 31/12/2023
APO (By:12/2023)				
DUBLIN Airport Authority	-	-	24%	Ongoing 31/12/2023

AOP11.2	**Extended Airport Operations Plan** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2027		**0%**	**Not yet planned**
EIDW - Dublin Airport				
This objective is not yet planned but will be updated in the 2022 Report following further progress on AOP 11.1.				-
ASP (By:12/2027)				
IAA-ATS Provider	-	-	0%	Not yet planned -
APO (By:12/2027)				
DUBLIN Airport Authority	This objective is not yet planned but will be updated in the 2022 Report following further progress on AOP 11.1 and would plan to apply for CEF funding in a future call	-	0%	Not yet planned -

<table>
<tr><td>AOP12.1</td><td colspan="2">Airport Safety Nets
<u>Timescales:</u>
Initial Operational Capability: 01/01/2021
Full Operational Capability / Target Date: 31/12/2025</td><td>31%</td><td>Ongoing</td></tr>
<tr><td colspan="5">EIDW - Dublin Airport</td></tr>
<tr><td colspan="4">This objective has incorporated AOP12 from the 2020 LSSIP report which was recorded as 94% completed.

EFS system was implemented in Q3 2017 with ATCO training completed. A technical issue led to the reversion to previous procedures. The system was re-deployment in Q2 2018, with associated ATCO re-training completed.

A number of Controller Airport Safety Nets have been rolled out as part of A-SMGCS and associated application of MLAT for all Airport vehicles. The EIDW Airport Authority, daa, are installing or have installed runway monitoring and conflict alerting (RMCA) function systems in order to enable the detection of conflicts & intrusions in accordance with A-SMGCS RMCA requirements.

As part of the project to introduce the New Tower at Dublin Airport, a new system IATS (by SAAB), additional Airport safety nets will be rolled out. Progress will be recorded in the 2022 LSSIP Report.</td><td>31/12/2025</td></tr>
<tr><td colspan="5">ASP (By:12/2025)</td></tr>
<tr><td rowspan="2">IAA-ATS Provider</td><td rowspan="2">A number of Controller Airport Safety Nets have been rolled out as part of A-SMGCS and associated application of MLAT for all Airport vehicles. The EIDW Airport Authority, daa is have installed runway monitoring and conflict alerting (RMCA) function systems in order to enable the detection of conflicts & intrusions in accordance with A-SMGCS RMCA requirements.

As part of the project to introduce the New Tower at Dublin Airport, a new system IATS (by SAAB), additional Airport safety nets will be rolled out. Progress will be recorded in the 2022 LSSIP Report.</td><td rowspan="2">-</td><td rowspan="2">43%</td><td>Ongoing</td></tr>
<tr><td>31/12/2025</td></tr>
<tr><td colspan="5">APO (By:12/2025)</td></tr>
<tr><td rowspan="2">DUBLIN Airport Authority</td><td rowspan="2">-</td><td rowspan="2">-</td><td rowspan="2">24%</td><td>Ongoing</td></tr>
<tr><td>31/12/2025</td></tr>
</table>

AOP13	**Automated Assistance to Controller for Surface Movement Planning and Routing** ***Timescales:*** Initial operational capability: 01/01/2016 Full operational capability: 31/12/2025		**0%**	**Planned**
EIDW - Dublin Airport				
There is currently no plan in place by the IAA ANSP. However, A-SMGCS Level 2 is in place at EIDW. This objective will be considered in line with development of systems and procedures for integration of Dublin North Runway. **The rollout of IATS is expected to assist in the delivery of this Objective. Progress will be recorded in the 2022 LSSIP Report.**				**31/12/2025**
REG (By:12/2025)				
IAA	There is currently no plan in place by the IAA ANSP. However, A-SMGCS Level 2 is in place at EIDW. This objective will be considered in line with development of systems and procedures for integration of Dublin North Runway. The rollout of IATS is expected to assist in the delivery of this Objective. Progress will be recorded in the 2022 LSSIP Report.	-	0%	Planned 31/12/2025
ASP (By:12/2025)				
IAA-ATS Provider	There is currently no plan in place by the IAA ANSP. However, A-SMGCS Level 2 is in place at EIDW. This objective will be considered in line with development of systems and procedures for integration of Dublin North Runway. The rollout of IATS is expected to assist in the delivery of this Objective. Progress will be recorded in the 2022 LSSIP Report.	-	0%	Planned 31/12/2025

AOP19	**Departure Management Synchronised with Pre-departure sequencing** ***Timescales:*** Initial Operational Capability : 01/01/2021 Full Operational Capability / Target Date: 31/12/2022		**22%**	**Ongoing**
EIDW - Dublin Airport				
Synchronisation of departure data is being addressed by daa and the IAA ANSP to better meet this Objective. This work continues on the back of ACDM and improved DMAN and is expected to be completed by end 2022, despite the apparent lack of ANSP progress as reported here, based on currently completed objectives. **The IAA ANSP is responsible for management of the ASMGCS system and integrates MLAT data on airport vehicles received through the APO. As daa are responsible for delivery of MLAT data, this objective will be addressed between daa and IAA ANSP during 2022.**				**31/12/2022**
ASP (By:12/2022)				
IAA-ATS Provider	More detailed Activity planned for this objective post operational implementation of the New EIDW Runway August 2022.	-	11%	Ongoing 31/12/2022
APO (By:12/2022)				
DUBLIN Airport Authority	daa have worked together with IAA to implement A-CDM locally and it was greatly improved by the implementation of an improved DMAN in the new HIGH tower in Dublin. The IAA ANSP is responsible for management of the ASMGCS system and integrates MLAT data on airport vehicles received through the APO. As daa are responsible for delivery of MLAT data, this objective will be addressed between daa and IAA ANSP during 2022"	-	35%	Ongoing 31/12/2022

ATC02.8	**Ground-Based Safety Nets** ***Timescales:*** Initial operational capability: 01/01/2009 Full operational capability: 31/12/2021		**100%**	**Completed**
-				
The IAA has implemented APW, MSAW and APM - Level 2 in all ACCs, TMAs and TWR units, which provide radar services. Major system upgrade (COOPANS) was complete in 2011 incorporating all Level 2 requirements. Upgrades to the functions have been conducted in line with the EUROCONTROL Specification and parameters have been tuned to the operational environment according to it.				**31/12/2011**
ASP (By:12/2021)				
IAA-ATS Provider	The IAA has implemented APW, MSAW and APM - Level 2 in all ACCs, TMAs and TWR units, which provide radar services. Major system upgrade (COOPANS) was complete in 2011 incorporating all Level 2 requirements. Upgrades to the functions have been conducted in line with the EUROCONTROL Specification and parameters have been tuned to the operational environment according to it.	-	100%	Completed 31/12/2011

ATC07.1	**AMAN Tools and Procedures** ***Timescales:*** Initial operational capability: 01/01/2007 Full operational capability: 31/12/2019		**100%**	**Completed**
EIDW - Dublin Airport				
System installed and tested. Controllers trained. Procedures implemented. Limited operational use due to low traffic levels. Feasibility study planned for integration with NATS ATM system as part of the FAB activities. System update to incorporate the Point Merge System at Dublin.				**31/08/2009**
ASP (By:01/2020)				
IAA-ATS Provider	-	-	100%	Completed 31/08/2009

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 present system supports **MTCD- Medium Term Conflict Detection** **MSFLP- Minimum Safe Flight Level Probe** **SAP- Segregated Airspace Probe** **AMAN- MAESTRO** **MONA for route and cleared level adherence monitoring (CLAM);** **SYSCO for intersector co-ordination and transfer and limited co-ordination (basic OLDI: ACT, ABI, LAM) with external centres.** **Our palette of support tools have been developed to support FRA which was implemented in 2009 but the requirement for further support tools is kept under constant review.**				**31/12/2009**
ASP (By:12/2021)				
IAA-ATS Provider	The present system supports MTCD- Medium Term Conflict Detection MSFLP- Minimum Safe Flight Level Probe SAP- Segregated Airspace Probe AMAN- MAESTRO MONA for route and cleared level adherence monitoring (CLAM); SYSCO for intersector co-ordination and transfer and limited co-ordination (basic OLDI: ACT, ABI, LAM) with external centres. Our palette of support tools have been developed to support FRA which was implemented in 2009 but the requirement for further support tools is kept under constant review.	FDP - COOPANS	100%	Completed 31/12/2009

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**
		-		
System already capable for interface between Dublin TMA and Shannon ACC although not yet used operationally within Ireland. Cross-border use of AMAN with NATS FAB partner was introduced in April 2014 as part of the XMAN project. There are currently no plans yet to implement the objective with other partners or to extend the scope of the collaboration with the UK. **The key interfaces between IAA and NATS is at the IOM/Scottish sectors for EGCC and EGBB arrivals/ departures and with the STU sector for London TMA arrivals/departures.** **Discussion is ongoing between the NATS and the IAA En-route (Shannon ACC) for an expansion of XMAN, which has been in place since 2013.** **2019 Update: In so far as possible information is exchanged in support of AMAN and this objective is recorded as closed subject to further development between NATS and the IAA ANSP, in support of the LAMP 2 Project.**				**31/12/2018**
ASP (By:12/2019)				
IAA-ATS Provider	-	-	100%	Completed 31/12/2018

ATC15.2	**Arrival Management Extended to En-route Airspace** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2024		**13%**	**Ongoing**
	EIDW - Dublin Airport			
This objective will be addressed post implementation of the EIDW North Runway, scheduled for August 2022. **Given the geographic location of EIDW and the associated AMAN 180NM Horizon, this objective for Ireland includes the Prestwick and London ACCs for traffic delivery.** **For the LSSIP Ireland Report 2021, there is no update for NATS to meet this objective and the LSSIP Ireland team have raised this with their NATS counterparts.**				**31/12/2024**
ASP (By:12/2024)				
IAA-ATS Provider	This objective will be addressed post implementation of the EIDW North Runway, scheduled for August 2022. Given the geographic location of EIDW and the associated AMAN 180NM Horizon, this objective for Ireland includes the Prestwick and London ACCs for traffic delivery. For the LSSIP Ireland Report 2021, there is no update for NATS to meet this objective and the LSSIP Ireland team have raised this with their NATS counterpart	-	13%	Ongoing 31/12/2024

ATC15.2bis	**Arrival Management Extended to En-route Airspace (non CP1)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability: 31/12/2024		**0%**	**Planned**
		-		
This objective will be addressed post implementation of the EIDW North Runway and associated New Tower, scheduled for August 2022. **Arrival management extension to enroute airspace has been trialled between the IAA ANSP (enroute) and NATS UK.** **NATS UK are proposing airspace changes to western sectors interfacing with Shannon enroute and Dublin. This project is proposed to become effective in 2023 and this objective will be addressed in parallel with this rollout.**				**31/12/2024**
ASP (By:12/2024)				
IAA-ATS Provider	-	-	0%	Planned 31/12/2024

ATC19	**AMAN/DMAN Integration** ***Timescales:*** - not applicable -		**0%**	**Not yet planned**
	EIDW - Dublin Airport **(Outside Applicability Area)**			
New objective: not yet planned				**-**
ASP (By:12/2027)				
IAA-ATS Provider	-	-	0%	Not yet planned -
APO (By:12/2027)				
DUBLIN Airport Authority	-	-	0%	Not yet planned -

COM10.1	**Migrate from AFTN to AMHS (Basic service)** ***Timescales:*** Initial Operational Capability: 01/12/2011 Full Operational Capability: 31/12/2018		**100%**	**Completed**
	-			
Full Operational Capability December 2018				**31/12/2018**
ASP (By:12/2018)				
IAA-ATS Provider	Full Operational Capability December 2018	-	100%	Completed 31/12/2018

COM10.2	**Extended AMHS** ***Timescales:*** Initial Operational Capability: 01/12/2011 Full Operational Capability: 31/12/2024		**0%**	**Planned**
	-			
Planned to be rolled out to meet the target completion date of 31/12/2024.				**31/12/2024**
ASP (By:12/2024)				
IAA-ATS Provider	Planned to be rolled out to meet the target completion date of 31/12/2024.	-	0%	Planned 31/12/2024

COM11.1	**Voice over Internet Protocol (VoIP) in En-Route** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2021		**83%**	**Ongoing**
	-			
Communications system upgrade completed during 2018. **2020: A new en-route contingency centre is fully VoIP compliant, completed Q4 2017, although not yet operational. The full migration and implementation planned for 2020-2021 as part of a FAB plan. All activity is proceeding according to plan. Rollout to all ACCs planned during 2021.** **2021 Update: All requirements completed in at Dublin ACC, for the New Tower, which is now is fully VOIP compliant. Remaining Dublin ACC requirements to be completed in May 2022. Shannon ACC and Cork ATC unit rollout being progressed with and update for the 2022 LSSIP Report to be supplied.** **Note: CEROC Contingency facility for Shannon ACC fully VOIP compliant.**				**31/12/2022**
ASP (By:12/2021)				
IAA-ATS Provider	2021 Update: All requirements completed in at Dublin ACC, for the New Tower, which is now is fully VOIP compliant. Remaining Dublin ACC requirements to be completed in May 2022. Shannon ACC and Cork ATC unit rollout being progressed with and update for the 2022 LSSIP Report to be supplied. Note: CEROC Contingency facility for Shannon ACC fully VOIP compliant.	Communications - Migration to VOIP and System Wide Information Management (SWIM) capabilities	83%	Ongoing 31/12/2022

COM11.2	**Voice over Internet Protocol (VoIP) in Airport/Terminal** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2023		**83%**	**Ongoing**
-				
Upgrade of systems to be rolled out in parallel with introduction of new EIDW Tower Q1-2021. **Remaining ACC systems to be upgraded with planned implementation in Q4-2021** **Update 2021: the new Dublin Tower became operational in December 2021. This has delayed the final completion of the objective. New expected completion date for 2021 report will be end 2022 and an update will be included in the 2022 Ireland Report.**				**31/12/2022**
ASP (By:12/2023)				
MET Provider - Irish Department of Transport	Engagement with MET is ongoing for full completion of this objective.	-	83%	Ongoing 31/12/2022
IAA-ATS Provider	Update 2021: the new Dublin Tower became operational in December 2022. This has delayed the final completion of the objective. New expected completion date for 2021 report will be end 2022 and an update will be included in the 2022 Ireland Report.	Communications - Migration to VOIP and System Wide Information Management (SWIM) capabilities	83%	Ongoing 31/12/2022

COM12	**New Pan-European Network Service (NewPENS)** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability (33 ANSPs): 31/12/2024		**100%**	**Completed**
-				
This objective was rolled out through the IAA's Network and Security domain and all activity was completed in May 2020.				**30/06/2020**
ASP (By:12/2024)				
IAA-ATS Provider	This objective is the rollout phase of activity through the IAA's Network and Security domain with an expected completion by end of 2020.	-	100%	Completed 30/06/2020
APO (By:12/2024)				
DUBLIN Airport Authority	-	-	0%	Not Applicable -

ENV01	**Continuous Descent Operations (CDO)** ***Timescales:*** Initial operational capability: 01/07/2007 Full operational capability: 31/12/2023		**70%**	**Ongoing**
EIDW - Dublin Airport				
The introduction of point merge system at Dublin Q4/2012 and updated in 2015 introduced CDO techniques. Over 95% of the airlines operating in Dublin Airport are already equipped to fly CDO procedures. **Update 2020: PBN based IFPs development to further support CDO are being addressed as part of the EIDW North Parallel Runway project, which is scheduled for delivery in 2022.** **Update 2021: Expected that this objective will be completed by end 2022 following introduction of the new parallel runway at Dublin and associated update IFPs, including new STARs that support CDO operations.**				**31/12/2022**
ASP (By:12/2023)				
IAA-ATS Provider	The introduction of point merge system at Dublin Q4/2012 and updated in 2015 introduced CDO techniques. Over 95% of the airlines operating in Dublin Airport are already equipped to fly CDO procedures. Update 2021: Expected that this objective will be completed by end 2022 following introduction of the new parallel runway at Dublin and associated update IFPs, including new STARs that support CDO operations.	-	63%	Ongoing 31/12/2022
APO (By:12/2023)				
DUBLIN Airport Authority	The introduction of point merge system at Dublin Q4/2012 and updated in 2015 introduced CDO techniques. Over 95% of the airlines operating in Dublin Airport are already equipped to fly CDO procedures. Update 2020: PBN based IFPs development to further support CDO are being addressed as part of the EIDW North Parallel Runway project, which is scheduled for delivery in 2022. Update 2021: Expected that this objective will be completed by end 2022 following introduction of the new parallel runway at Dublin and associated update IFPs, including new STARs that support CDO operations.	-	100%	Completed 31/12/2012

FCM03	**Collaborative Flight Planning** ***Timescales:*** Initial operational capability: 01/01/2000 Full operational capability: 31/12/2022		**100%**	**Completed**
-				
Some SLoAs were addressed through the National ATM Upgrade Project in June 2004. The rest of messages were implemented through the COOPANS upgrade in December 2011 and the provision of the automated AFP in 2016. Completed in 2017.				**31/12/2017**
ASP (By:12/2022)				
IAA-ATS Provider	Some SLoAs were addressed through the National ATM Upgrade Project in June 2004. The rest of messages were implemented through the COOPANS upgrade in December 2011 and the provision of the automated AFP in 2016. Completed 2017.	FDP - COOPANS	100%	Completed 31/12/2017

FCM04.2	**Enhanced Short Term ATFCM Measures** ***Timescales:*** Initial operational capability: 01/11/2017 Full Operational Capability / Target Date: 31/12/2022		**35%**	**Ongoing**
	-			
This objective that has not been considered further during 2020 by the IAA. Currently, IAA and NATS (as FAB partners) agree manually applied STAMs as required. Automation of this process in consultation with NM (centrally through the IRL/UK FAB FMP), will be examined in in consultation between the FAB partners and the NM, utilizing B2B functionality. **Update 2021: For this objective the IAA ANSP awaits NMP Flow application rollout to update this objective. This is expected to be completed to meet the target date of 31/12/2022.**				**31/12/2022**
ASP (By:12/2022)				
IAA-ATS Provider	Update 2021: For this objective the IAA ANSP awaits NMP Flow application rollout to update this objective. This is expected to be completed to meet the target date of 31/12/2022.	-	27%	Ongoing 31/12/2022

FCM06.1	**Automated Support for Traffic Complexity Assessment and Flight Planning interfaces** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target date: 31/12/2022		**41%**	**Ongoing**
	-			
Objective will be achieved in planned timeframe. This will require assessment and implementation schedule. It is noted that the IAA does not apply ATFCM measures except in very rare circumstances. Combined with the FRA stable profile en-route environment, complexity of traffic is more easily calculated and managed through the dynamic sectorisation of the en-route airspace. **Update 2021:FCM06 was reported as "Ongoing" at 47% completion for the 2020 LSSIP Report. This activity will be updated to reflect the changed Implementation Objective, FCM 06.1 and a detailed update will be provided for the 2022 LSSIP Report.**				**31/12/2022**
ASP (By:12/2022)				
IAA-ATS Provider	Objective will be achieved in planned timeframe. This will require assessment and implementation schedule. It is noted that the IAA does not apply ATFCM measures except in very rare circumstances. Combined with the FRA stable profile en-route environment, complexity of traffic is more easily calculated and managed through the dynamic sectorisation of the en-route airspace. Update 2021:FCM06 was reported as "Ongoing" at 47% completion for the 2020 LSSIP Report. This activity will be updated to reflect the changed Implementation Objective, FCM 06.1 and a detailed update will be provided for the 2022 LSSIP Report.	-	34%	Ongoing 31/12/2022

FCM10	**Interactive Rolling NOP** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2023		**35%**	**Ongoing**
		-		
Noting that this objective incorporates FCM05 and FCM07, FCM05 was reported as "Ongoing" for the 202O LSSIP Report. For the 2021 report this objective is reported as "Ongoing" reflecting progress in 2020 and with a target date for implementation of 31/12/2023. **APO requirements added for reference although not specifically reference in the ATM Masterplan. It is also noted that NM interface arrangements are to be agreed and assessed.**				**31/12/2023**
ASP (By:12/2023)				
DUBLIN Airport Authority	Noting that this objective incorporates FCM05 and FCM07, FCM05 was reported as "Ongoing" for the 202O LSSIP Report. For the 2021 report this objective is reported as "Ongoing" reflecting progress in 2020 and with a target date for implementation of 31/12/2023. APO requirements added for reference although not specifically reference in the ATM Masterplan. It is also noted that NM interface arrangements are to be agreed and assessed.	-	17%	Ongoing 31/12/2023
IAA-ATS Provider	Noting that this objective incorporates FCM05 and FCM07, FCM05 was reported as "Ongoing" for the 202O LSSIP Report. For the 2021 report this objective is reported as "Ongoing" reflecting progress in 2020 and with a target date for implementation of 31/12/2023. APO requirements added for reference although not specifically reference in the ATM Masterplan,	-	24%	Ongoing 31/12/2023

FCM11.1	**Initial AOP/NOP Information Sharing** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2023		**9%**	**Ongoing**
	EIDW - Dublin Airport			
Activity started. This Objective will be rolled out following introduction of the EIDW New Parallel Runway 10L/28R in August 2022.				**31/12/2023**
ASP (By:12/2023)				
IAA-ATS Provider	Activity started. This Objective will be rolled out following introduction of the EIDW New Parallel Runway 10L/28R in August 2022.	-	7%	Ongoing 31/12/2023
APO (By:12/2023)				
DUBLIN Airport Authority	Activity started. This Objective will be rolled out following introduction of the EIDW New Parallel Runway 10L/28R in August 2022.	-	8%	Ongoing 31/12/2023

FCM11.2	**AOP/NOP integration** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2027		**0%**	**Not yet planned**
EIDW - Dublin Airport				
This implementation objective will be addressed post introduction of the EIDW North Parallel Runway 10L/28R, scheduled for operations from August 2022.				-
ASP (By:12/2027)				
IAA-ATS Provider	This implementation objective will be addressed post introduction of the EIDW North Parallel Runway 10L/28R, scheduled for operations from August 2022.	-	0%	Not yet planned -
APO (By:12/2027)				
DUBLIN Airport Authority	This implementation objective will be addressed post introduction of the EIDW North Parallel Runway 10L/28R, scheduled for operations from August 2022.	-	0%	Not yet planned -

INF07	**Electronic Terrain and Obstacle Data (eTOD)** ***Timescales:*** Initial operational capability: 01/11/2014 Full operational capability: 31/12/2018		**100%**	**Completed**
-				
In 2010, the Irish Aviation Authority contracted Ordnance Survey Ireland (OSi) to carry out the required surveys to comply with the ICAO requirement of acquiring and maintaining electronic obstacle and terrain data (eTOD) and make it available to all relevant agencies, operators and individuals. The requirement was to provide eTOD data for ICAO Areas 1, 2 and 3 for eleven airports in the state. The airports were Dublin, Shannon, Cork, Waterford, Kerry, Galway, Connacht, Sligo, Donegal, Casement and Weston. **During the project the IAA carried out a two day audit to ensure that OSi was conforming to ICAO requirements and confirmed the organisation as an eTOD Data Originator. The project was completed and signed off early 2013.**			**31/03/2013**
REG (By:01/2019)				
IAA	-	-	100%	Completed 31/03/2013
ASP (By:01/2019)				
IAA-ATS Provider	-	-	100%	Completed 31/03/2013
APO (By:01/2019)				
All Airports	-	-	100%	Completed 31/03/2013

INF10.10	**Meteorological Information Exchange - Aerodrome Meteorological information Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**9%**	**Ongoing**
	-		
AMAP: Aviation Modernisation and Automation Project, is a project for updates to MET equipment at EIDW, EICK and EINN Airports and will feed into this Objective with a 2025 Completion recorded for the LSSIP 2021 Report. The 2022 report will update this objective based on progress with the referenced project. **The ANSP will interrogate new MET data formats as part of his objective as will daa.**			**31/12/2025**
ASP (By:12/2025)			
IAA-ATS Provider	AMAP: Aviation Modernisation and Automation Project, is a project for updates to MET equipment at EIDW, EICK and EINN Airports and will feed into this Objective with a 2025 Completion recorded for the LSSIP 2021 Report. The 2022 report will update this objective based on progress with the referenced project. The ANSP will interrogate new MET data formats as part of his objective as will daa.	-	3%	Ongoing 31/12/2025
APO (By:12/2025)			
DUBLIN Airport Authority	AMAP: Aviation Modernisation and Automation Project, is a project for updates to MET equipment at EIDW, EICK and EINN Airports and will feed into this Objective with a 2025 Completion recorded for the LSSIP 2021 Report. The 2022 report will update this objective based on progress with the referenced project. The ANSP will interrogate new MET data formats as part of his objective as will daa.	-	3%	Ongoing 31/12/2025
MET (By:12/2025)			
MET Provider - Irish Department of Transport	AMAP: Aviation Modernisation and Automation Project, is a project for updates to MET equipment at EIDW, EICK and EINN Airports and will feed into this Objective with a 2025 Completion recorded for the LSSIP 2021 Report. The 2022 report will update this objective based on progress with the referenced project. The ANSP will interrogate new MET data formats as part of his objective as will daa.	-	10%	Ongoing 31/12/2025

INF10.11	**Meteorological Information Exchange - En-Route and Approach Meteorological information service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**9%**	**Ongoing**
	-			
This new objective is recorded as "Ongoing" for the 2021 LSSIP Report based on ongoing interaction between MET Eireann and the IAA ANSP. More detail on progress will be included in the 2022 Report.				**31/12/2025**
ASP (By:12/2025)				
IAA-ATS Provider	This new objective is recorded as "Ongoing" for the 2021 LSSIP Report based on ongoing interaction between MET Eireann and the IAA ANSP. More detail on progress will be included in the 2022 Report.	-	3%	Ongoing 31/12/2025
MET (By:12/2025)				
MET Provider - Irish Department of Transport	This new objective is recorded as "Ongoing" for the 2021 LSSIP Report based on ongoing interaction between MET Eireann and the IAA ANSP. More detail on progress will be included in the 2022 Report. The MET SLoAs are recorded as ongoing based on work being completed on the Aviation Modernisation and Automation Project (AMAP).	-	10%	Ongoing 31/12/2025

INF10.12	**Meteorological Information Exchange - Network Meteorological Information** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**10%**	**Ongoing**
	-			
As this is a new objective, this will be recorded as "Ongoing" for the LSSIP 2021 Report. **There is initial work commenced and a more detailed update will be included in the 2022 LSSIP Report.**				**31/12/2025**
ASP (By:12/2025)				
IAA-ATS Provider	As this is a new objective, this will be recorded as "Ongoing" for the LSSIP 2021 Report. There is initial work commenced and a more detailed update will be included in the 2022 LSSIP Report.	-	10%	Ongoing 31/12/2025
MET (By:12/2025)				
MET Provider - Irish Department of Transport	As this is a new objective, this will be recorded as "Ongoing" for the LSSIP 2021 Report. There is initial work commenced and a more detailed update will be included in the 2022 LSSIP Report.	-	10%	Ongoing 31/12/2025

INF10.13	**Cooperative Network Information Exchange - ATFCM Tactical Updates Service (Airport Capacity and Enroute)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**0%**	**Not Applicable**
-				
Recorded as "Not Applicable" fort the 2021 LSSIP as the ANSP reported for Family 4.3.1 that NM tool will be used for Traffic Complexity Management (Deployment Milestone 3 Option A). .				-
ASP (By:12/2025)				
IAA-ATS Provider	-	-	0%	Not Applicable -

INF10.14	**Cooperative Network Information Exchange – Flight Management Service (Slots and NOP/AOP integration)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**25%**	**Ongoing**
-				
New objective. Recorded as "Ongoing" globally for the LSSIP 2021 Report, reflecting work done on related objectives. **This objective will be more closely addressed in reflecting other related objectives (AOP11.1 and AOP 11.2; FCM11.1 and FCM11.2). The ASP SLoAs for this objective are recorded as "Not Applicable" reflecting progress on the Family 4.3.1 FCM06.1 Objective - Traffic Complexity Management (Deployment Milestone 3 Option A).**				**31/12/2025**
ASP (By:12/2025)				
IAA-ATS Provider	-	-	0%	Not Applicable -
APO (By:12/2025)				
DUBLIN Airport Authority	New objective. Recorded as "Ongoing" globally for the LSSIP 2021 Report, reflecting work done on related objectives. This objective will be more closely addressed in reflecting other related objectives (AOP11.1 and AOP 11.2; FCM11.1 and FCM11.2).	-	25%	Ongoing 31/12/2025

INF10.15	**Cooperative Network Information Exchange – Measures Service (Traffic Regulation)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**0%**	**Not Applicable**
-				
Service Not Applicable to the ANSP. In Family 4.3.1 you reported that NM tool will be used for Traffic Complexity Management (Deployment Milestone 3 Option A). Therefore, all Services in Family 5.5.1 are Not Applicable for the ANSP. Please set the Stakeholder's and Deployment Milestones' status on "Not Applicable" for this Service.				-
ASP (By:12/2025)				
IAA-ATS Provider	-	-	0%	Not Applicable -

INF10.16	**Cooperative Network Information Exchange - Short Term ATFCM Measures services (MCDM, eHelpdesk, STAM measures)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Service Not Applicable to the ANSP. In Family 4.3.1 you reported that NM tool will be used for Traffic Complexity Management (Deployment Milestone 3 Option A). Therefore, all Services in Family 5.5.1 are Not Applicable for the ANSP. Please set the Stakeholder's and Deployment Milestones' status on "Not Applicable" for this Service.			-
ASP (By:12/2025)			
IAA-ATS Provider	-	-	0%	Not Applicable -

INF10.17	**Cooperative Network Information Exchange – Counts service (ATFCM Congestion Points)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Not Applicable**
-			
Service Not Applicable to the ANSP. In Family 4.3.1 you reported that NM tool will be used for Traffic Complexity Management (Deployment Milestone 3 Option A). Therefore, all Services in Family 5.5.1 are Not Applicable for the ANSP. Please set the Stakeholder's and Deployment Milestones' status on "Not Applicable" for this Service.			-
ASP (By:12/2025)			
IAA-ATS Provider	-	-	0%	Not Applicable -

INF10.19	**Flight Information Exchange (Yellow Profile) - Flight Data Request Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025	**0%**	**Planned**
-			
New Objective: Reflecting progress on INF08.1 from 2020's report, this new objective is recorded as "Planned" for the 2021 LSSIP Report.			**31/12/2025**
ASP (By:12/2025)			
IAA-ATS Provider	Reflecting progress on INF08.1 from 2020's report, this new objective is recorded as "Ongoing" for the 2021 LSSIP Report.	-	0%	Planned 31/12/2025

INF10.2	**Stakeholders' SWIM PKI and cyber security** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**8%**	**Ongoing**
-				
New Objective. Recorded as "Ongoing" for the 2021 LSSIP Report based on progress for the IAA ANSP and some progress for MET Eireann. **IAA ANSP: Security Management System (SeMS) in place driving SWIM PKI and cyber security requirements. Systems being developed to meet other regulatory requirements.** **MET Eireann: As an (EU) Reg.2027-373 certified entity, SWIM PKI and cyber security requirements.** **All Airports: At pre-planning stage for daa and SAA with a further update to be supplied for the 2022 LSSIP Report to be included the Regional Airports if applicable.**				**31/12/2025**
ASP (By:12/2025)				
IAA-ATS Provider	IAA ANSP: Security Management System (SeMS) in place driving SWIM PKI and cyber security requirements. Systems being developed to meet other regulatory requirements.	-	16%	Ongoing 31/12/2025
APO (By:12/2025)				
All Airports	At pre-planning stage for daa and SAA with a further update to be supplied for the 2022 LSSIP Report to included the Regional Airports if applicable.	-	3%	Ongoing 31/12/2025
MET (By:12/2025)				
MET Provider - Irish Department of Transport	MET Eireann: As an (EU) Reg.2027-373 certified entity, SWIM PKI and cyber security requirements	-	4%	Ongoing 31/12/2025

INF10.20	**Flight Information Exchange (Yellow Profile) - Notification Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**0%**	**Not yet planned**
-				
New Objective: It is noted that this objective is essentially to replace DEP and ARR messages. This objective is recorded as "Not yet planned" for the 2021 report. Development of other Aeronautical Information Exchange items will inform the update to this objective in the 2022 LSSIP Report.				-
ASP (By:12/2025)				
IAA-ATS Provider	New Objective: It is noted that this objective is essentially to replace DEP and ARR messages. This objective is recorded as "Not yet planned" for the 2021 report. Development of other Aeronautical Information Exchange items will inform the update to this objective in the 2022 LSSIP Report.	-	0%	Not yet planned -

INF10.21	**Flight Information Exchange (Yellow Profile) - Data Publication Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**0%**	**Planned**
	-			
Delivery expected in Q3 2022				**31/12/2024**
ASP (By:12/2025)				
AIS/AIM/ARO Ireland	Delivery expected in Q3 2022	-	0%	Planned 31/12/2024
IAA-ATS Provider	Delivery expected in Q3 2022	-	0%	Planned 31/12/2024

INF10.23	**Flight Information Exchange (Yellow Profile) - Extended AMAN SWIM Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**0%**	**Not yet planned**
	-			
New objective: Reflecting progress for ATC15.1; ATC15.2 (EIDW); ATC15.2bis and ATC19 (EIDW), this objective is recorded as "Not yet planned" for the 2021 LSSIP Report. A further update will be included in the 2022 Report.				-
ASP (By:12/2025)				
IAA-ATS Provider	New objective: Reflecting progress for ATC15.1; ATC15.2 (EIDW); ATC15.2bis and ATC19 (EIDW), this objective is recorded as "Not yet planned" for the 2021 LSSIP Report, to align with completion of these referenced objectives. A further update will be included in the 2022 Report.	-	0%	Not yet planned -

INF10.3	**Aeronautical Information Exchange - Airspace structure service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**25%**	**Ongoing**
	-			
New objective: Noted that this objective requires expansion of the B2B services between NM and the ANSP for ASM and FUA management. As there is technical alignment between systems, this objective is recorded as "Ongoing" for the 2021 LSSIP Report, with an further update expected in 2022.				**31/12/2025**
ASP (By:12/2025)				
IAA-ATS Provider	New objective: Noted that this objective requires expansion of the B2B services between NM and the ANSP for ASM and FUA management. As there is technical alignment between systems, this objective is recorded as "Ongoing" for the 2021 LSSIP Report, with an further update expected in 2022.	-	25%	Ongoing 31/12/2025

INF10.4	**Aeronautical Information Exchange - Airspace Availability Service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**40%**	**Ongoing**
	-			
New Objective: Recorded as "Ongoing" for this cycle with an update planned in 2022. ASM elements need also to be discussed between the IAA ANSP and NATS/NATS FMP in the context of rollout of the LARA solution.				**31/12/2025**
ASP (By:12/2025)				
IAA-ATS Provider	New Objective: Recorded as "Ongoing" for this cycle with an update planned in 2022. ASM elements need also to be discussed between the IAA ANSP and NATS/NATS FMP in the context of rollout of the LARA solution.	-	40%	Ongoing 31/12/2025

INF10.5	**Aeronautical Information Exchange - Airspace Reservation (ARES)** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**10%**	**Ongoing**
	-			
New Objective: This objective is recorded as "Ongoing" for the LSSIP 2021 Report and will be addressed further during 2022, based on work already completed in the previous LSSIP cycles.				**31/12/2025**
ASP (By:12/2025)				
IAA-ATS Provider	New Objective: This objective is recorded as "Ongoing" for the LSSIP 2021 Report and will be addressed further during 2022, based on work already completed in the previous LSSIP cycles.	-	10%	Ongoing 31/12/2025

INF10.6	**Aeronautical Information Exchange – Digital NOTAM service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**8%**	**Ongoing**
	-			
New Objective: Recorded as "Ongoing" as there is work being rolled out around the digitization of AIS/AIM Services during 2022.				**31/12/2024**
ASP (By:12/2025)				
DUBLIN Airport Authority	daa seeking more interaction on the rollout of this objective during 2022.	-	0%	Planned 31/12/2024
IAA-ATS Provider	Recorded as "Not yet planned" as there is work being rolled out around the digitization of AIS/AIM Services during 2022 to be addressed by the ATS element of the IAA ANSP.	-	0%	Not yet planned -
AIS (By:12/2025)				
AIS/AIM/ARO Ireland	Recorded as "Ongoing" as there is work being rolled out around the digitization of AIS/AIM (part of the IAA ANSP) Services during 2022.	-	10%	Ongoing 31/12/2024

INF10.7	**Aeronautical Information Exchange - Aerodrome mapping service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**10%**	**Ongoing**
	-			
New Objective: This is noted as an AIS/AIM deliverable and is recorded as "Ongoing" for this LSSIP cycle, based on work completed for previous LSSIP cycles. Further activity to address this item is expected during 2022 and the status will be updated for the 2022 LSSIP Report.				**31/12/2025**
AIS (By:12/2025)				
AIS/AIM/ARO Ireland	New Objective: This is noted as an AIS/AIM deliverable and is recorded as "Ongoing" for this LSSIP cycle, based on work completed for previous LSSIP cycles. Further activity to address this item is expected during 2022 and the status will be updated for the 2022 LSSIP Report.	-	10%	Ongoing 31/12/2025

INF10.8	**Aeronautical Information Exchange - Aeronautical Information Features service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**10%**	**Ongoing**
	-			
New Objective: Recorded as "Ongoing" for the 2021 LSSIP Cycle. The ANSP/ AIS-AIM-ARO is exploring possible aeronautical data solutions that could support this objective and the 2022 LSSIP Report will include an update on progress.				**31/12/2025**
ASP (By:12/2025)				
IAA-ATS Provider	Recorded as "Ongoing" for the 2021 LSSIP Cycle. The ANSP/ AIS-AIM-ARO is exploring possible aeronautical data solutions that could support this objective and the 2022 LSSIP Report will include an update on progress.	-	10%	Ongoing 31/12/2025
AIS (By:12/2025)				
AIS/AIM/ARO Ireland	Recorded as "Ongoing" for the 2021 LSSIP Cycle. The ANSP/ AIS-AIM-ARO is exploring possible aeronautical data solutions that could support this objective and the 2022 LSSIP Report will include an update on progress.	-	10%	Ongoing 31/12/2025

INF10.9	**Meteorological Information Exchange - Volcanic Ash Mass Concentration information service** ***Timescales:*** Initial Operational Capability: 01/01/2021 Full Operational Capability / Target Date: 31/12/2025		**0%**	**Planned**
	-			
New Objective: The IAA ANSP is acutely aware of potential issues with Volcanic Ash, given our geographical location and is an active participant in forums for assessing these phenomena. This objective is therefore recorded as Planned for the 2021 LSSIP Report.				**31/12/2024**
ASP (By:12/2025)				
IAA-ATS Provider	The IAA ANSP is acutely aware of potential issues with Volcanic Ash, given our geographical location and is an active participant in forums for assessing these phenomena. This objective is therefore recorded as Planned for the 2021 LSSIP Report.	-	0%	Planned 31/12/2024
MET (By:12/2025)				
MET Provider - Irish Department of Transport	MET Eireann are involved in the referenced Volcanic Ash forums but as yet are to plan for output of data covered in this objective.	-	0%	Not yet planned -

ITY-ACID	**Aircraft Identification** ***Timescales:*** Entry into force of the Regulation: 13/12/2011 System capability: 02/01/2020		**97%**	**Ongoing**
		-		
Enhanced MODE implemented on some IAA radar systems was completed Q4 2016. Full system upgraded in 2017 to fully comply with the requirements of Regulation (EU) No 1206/2011. In addition to this, DAPS was rolled out for operational use and staff were trained on its use. A Safety Case for this phase of implementation was submitted and approved by the competent authority. **2019: Mode S Downlinked Aircraft ID is available through the COOPANS System. Airspace where this is objective is implemented has yet to be declared with NM and therefore the Objective is recorded as late for the 2019 Ireland report.** **2020: From the IAA ANSP perspective, all required elements for this objective are in place. We await a co-ordinated implementation with our FAB partner, NATS, to record this objective as fully completed. This objective is reported as "Late" for the 2020 Report as, the airspace where this capability is deployed has yet to be declared to NM (for flight plan flagging).** **2021 Update: IAA ANSP have declared to NM that our systems are capable in meeting this objective but we are recording this objective Ongoing for this cycle as we are dependent on UK ATM system capability rollout to complete this objective.**			**31/12/2023**
ASP (By:01/2020)				
IAA-ATS Provider	Enhanced MODE implemented on three radar systems remaining will be completed by Q4 2016. Full system will be upgraded at a later stage to fully comply with the requirements of Regulation (EU) No 1206/2011. 2020: From the IAA ANSP perspective, all required elements for this objective are in place. We await a co-ordinated implementation with our FAB partner, NATS, to record this objective as fully completed. This objective is reported as "Late" for the 2020 Report as, the airspace where this capability is deployed has yet to be declared to NM (for flight plan flagging) 2021 Update: IAA ANSP have declared to NM that our systems are capable in meeting this objective but we are recording this objective Ongoing for this cycle as we are dependent on UK ATM system capability rollout to complete this objective.	-	97%	Ongoing 31/12/2023

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**
		-		
COOPANS system already has FANS 1/A capability and the IAA introduced a CPDLC service for oceanic customers in February 2013. The IAA implemented EU Regulation 29/2009 in March 2014. **2021: DLS/SDP AF6 report completed for 2021 Cycle.**				**31/03/2014**
REG (By:02/2018)				
IAA	Actions will be completed in line with ANSP plans.	-	100%	Completed 31/03/2014
ASP (By:02/2018)				
IAA-ATS Provider	COOPANS system already has FANS 1/A capability and the IAA will introduce a CPDLC service for oceanic customers in February 2013. The IAA implemented EU Regulation 29/2009 in March 2014.	-	100%	Completed 31/03/2014
MIL (By:01/2019)				
Mil. Authority	Ireland does not plan to equip any new transport type State aircraft with data link capability for the time being.	-	0%	Not Applicable -

ITY-AGVCS2	**8,33 kHz Air-Ground Voice Channel Spacing below FL195** ***Timescales:*** Entry into force: 07/12/2012 New and upgraded radio equipment: 17/11/2013 New or upgraded radios on State aircraft: 01/01/2014 Interim target for freq. conversions: 31/12/2014 All radio equipment: 31/12/2017 All frequencies converted: 31/12/2018 State aircraft equipped, except those notified to EC: 31/12/2018 State aircraft equipped, except those exempted [Art 9(11)]: 31/12/2020		**100%**	**Completed**
	-			
Full rollout of 8.33 kHz Spacing completed in November 2018 (Reference. AIC Nr. 13/18 08 Nov.2018) **Update 2020: All military (State Aircraft) have been equipped in 2020.**				**30/09/2020**
REG (By:12/2018)				
IAA	The State directed conversion of all (VHF) frequency assignments published in the Table COM2 of ICAO Doc 7754, except where derogations apply or the State grants local exceptions in accordance with the requirements of Regulation (EU) No 1079/2012.	-	100%	Completed 08/11/2018
ASP (By:12/2018)				
IAA-ATS Provider	-	-	100%	Completed 08/11/2018
MIL (By:12/2020)				
Mil. Authority	Military Authorities do not perform either regulatory or service provision functions in respect of civil flights. However, the military voice communication systems will be upgraded. State aircraft will be equipped in line with the requirements of Regulation (EU) No 1079/2012. Update 2020: All equipage completed.	-	100%	Completed 30/09/2020
APO (By:12/2018)				
All Airports	Airport operators will comply with the requirements of Regulation (EU) No 1079/2012. All State Airports now compliant.	-	100%	Completed 08/11/2018

<table>
<tr><td>ITY-FMTP</td><td colspan="2">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</td><td>100%</td><td>Completed</td></tr>
<tr><td colspan="5">-</td></tr>
<tr><td colspan="4">The IAA commissioned new FDPS systems at Shannon and Dublin in April and May of 2011, which support both FMTP and X25 for the "notification, coordination & transfer" data connections. The IAA progress on FMTP:
- On the Shannon-Dublin connection is installed and tested and operational;
- On the Shannon-London and Dublin-London connections complete; and
- On the Shannon-Brest connection complete</td><td>30/06/2016</td></tr>
<tr><td colspan="5">ASP (By:12/2014)</td></tr>
<tr><td rowspan="2">IAA-ATS Provider</td><td rowspan="2">The IAA commissioned new FDPS systems at Shannon and Dublin in April and May of 2011, which support both FMTP and X25 for the "notification, coordination & transfer" data connections. The IAA progress on FMTP:
- On the Shannon-Dublin connection is installed and tested and operational;
- On the Shannon-London and Dublin-London connections complete; and
- On the Shannon-Brest connection complete</td><td rowspan="2">FDP - COOPANS</td><td rowspan="2">100%</td><td>Completed</td></tr>
<tr><td>30/06/2016</td></tr>
<tr><td colspan="5">MIL (By:12/2014)</td></tr>
<tr><td rowspan="2">Mil. Authority</td><td rowspan="2">Military do not provide GAT services.</td><td rowspan="2">-</td><td rowspan="2">0%</td><td>Not Applicable</td></tr>
<tr><td>-</td></tr>
</table>

NAV03.1	**RNAV 1 in TMA Operations** ***Timescales:*** Initial operational capability: 01/01/2001 One SID and STAR per instrument RWY, where established: 25/01/2024 All SIDs and STARs per instrument RWY, where established: 06/06/2030	**100%**	**Completed**
-			
P-RNAV procedures have been implemented at Dublin, Shannon and Cork TMAs. **The ATM System has been adapted to display aircraft P-RNAV equipage to the CWPs.** **Point-Merge implemented in Dublin in 12/2012. RNAV1 updates for State Airports and Non-State (Regional) Airports planned for deployment in 2019-2020.** **All State Airports IFPs updated to RNAV 1, completed 06/12/2018.** **Regional Non-state Airports to be completed in 2021.**			**13/12/2020**
REG (By:06/2030)			
IAA	-	-	100% Completed 06/12/2018
ASP (By:06/2030)			
IAA-ATS Provider	-	-	100% Completed 06/12/2018
IAA	-	-	100% Completed 13/12/2020

NAV03.2	**RNP 1 in TMA Operations** ***Timescales:*** Start: 07/08/2018 One SID and STAR per instrument RWY, where established: 25/01/2024 All SIDs and STARs per instrument RWY, where established: 06/06/2030		**100%**	**Completed**
	-			
All published SIDs and STARs for the State Airports have been published as RNAV1. In addition, Regional Airports with the exception of EIWF and EIWT now have RNAV1 IFPs published or regulatory approved for publication. **2021: Recorded as "Completed" for this cycle. It is also intended to designate the Dublin, Cork and Shannon TMAs as NAVSPEC RNAV 1 during 2022.**				**31/12/2020**
REG (By:06/2030)				
IAA	PBN Policy and Transition Plan produced and published in 2019, following approval at EUROCONTROL NETOPS 28.	-	100%	Completed 30/08/2020
ASP (By:06/2030)				
IAA-ATS Provider	All published SIDs and STARs for the State Airports have been published as RNAV1. In addition, Regional Airports with the exception of EIWF and EIWT now have RNAV1 IFPs published or regulatory approved for publication. 2021: Recorded as "Completed" for this cycle. It is also intended to designate the Dublin, Cork and Shannon TMAs as NAVSPEC RNAV 1 during 2022.	-	100%	Completed 31/12/2020
IAA	All published SIDs and STARs for the State Airports have been published as RNAV1. In addition, Regional Airports with the exception of EIWF and EIWT now have RNAV1 IFPs published or regulatory approved for publication. 2021: Recorded as "Completed" for this cycle. It is also intended to designate the Dublin, Cork and Shannon TMAs as NAVSPEC RNAV 1 during 2022.	-	100%	Completed 01/12/2019

NAV10	**RNP Approach Procedures to instrument RWY** ***Timescales:*** Initial operational capability: 01/06/2011 Instrument RWY ends without precision approach in EU SES States.: 03/12/2020 Instrument RWY ends served by precision approach.: 25/01/2024		**97%**	**Ongoing**
	-			
6 APV/Baro procedures in Dublin TMA published in 2015. **EIKY and EIKN delivered APV procedures during 2016** **The ASAP driven AIRLA project, which received partial funding from GSA for implementation of LPV approaches at 21 Runway ends in Ireland, commenced in July 2017. Delivery of the LPV approaches will be aligned with inclusion of LNAV and LNAV/ VNAV procedures for these runway ends.** **This project is scheduled to run until Q2 2019.** **Update 2018: All State Airports RNP (LNAV/LNAV-VNAV and LPV) completed for eligible runways. Last completed 06/12/2018. Note: RWY 25 EICK not eligible due to obstacles on the approach, EIKN and EIKY have APV IAPs published.** **Update 2019: For NPA Runways, designs have been developed and await approval and publication.** **Update 2020: EIDW (PCP Airport): Fully implemented. However, RNP RWYs 16 and 34 temporarily withdrawn for re-design. Re-publication planned in 2021.** **EICK: All runways except RWY 25 (LNAV only IAP) have RNP IAPs** **EINN: RNP IAPs for RWYs 06 and 24 temporarily withdrawn for re-design. Re-publication planned in 2021.** **Non-State Regional Airports:** **EIKN and EIKY: APV IAPs in place. Third line of LPV minima planned for publication 2021** **EIDL, EISG and EIWF: RNP IAPs designed and planned for publication in 2021** **Military: EIME: Re-design of IAPs in progress. Publication TBC** **PBN Implementation Plan for Ireland approved at Eurocontrol NETOPS 28.** **2021: All Instrument RWYs in Ireland with the exception or EIWF (due to planned runway extension) and EIWT (due to temporary closure in 2020-2021 and re-development of IFPs ongoing) have RNP/GNSS IAPs published or approved for publication. Target date for full completion of this objective on track for 31/12/2024.**			**31/12/2023**
REG (By:01/2024)				
IAA	With the exception of EIWF and EIWT as referenced in general commentary, all activity required has been completed.	-	100%	Completed 31/12/2021

ASP (By:01/2024)				
IAA-ATS Provider	For IAA ANSP airports (EIDW, EINN and EICK), where the ANSP has responsibility for IFP development and maintenance, activity has been completed. IFPs for the new parallel runway at EIDW are being developed for an effective date of August 2022. This objective is recorded as "ongoing for the LSSIP cycle.	-	97%	Ongoing 31/12/2022
DUBLIN Airport Authority	All current IFPs published for EIDW have met this objective. IFPs for the new parallel runway at EIDW are being developed for an effective date of August 2022. This objective is recorded as "ongoing for the LSSIP cycle.	-	75%	Ongoing 11/08/2022
All Airports	All airports with the exception of EIWF and EIWT have met this objective for the 2021 LSSIP cycle. Remaining airports as detailed are expected to meet the target date for completion of 31/12/2024. This objective is recorded as "Ongoing" for the 2021 LSSIP Report.	-	88%	Ongoing 31/12/2023

NAV12	**ATS IFR Routes for Rotorcraft Operations** ***Timescales:*** Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes above FL150, where established.: 03/12/2020 One rotorcraft RNP0.3, RNP01 or RNAV1 SID and STAR per instrument RWY, where established.: 25/01/2024 Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes below FL150, where established.: 25/01/2024 All rotorcraft RNP0.3, RNP01 or RNAV1 SIDs and STARs per instrument RWY, where established.: 06/06/2030	**26%**	**Ongoing**
-			
This objective is being reviewed in line with the PBN Policy and associated implementation dates.			**31/12/2023**
REG (By:06/2030)			
ASP (By:06/2030)			
IAA	IAA Regulator is managing this process	-	19%	Ongoing 31/12/2023
IAA-ATS Provider	The ANSP has indicated that we do not support Helicopter routes and don't see a demand for these. If rolled out, we will address incorporation in our ATM systems at that point. This objective is being driven by the IAA REG.	-	0%	Not yet planned -

SAF11	**Improve Runway Safety by Preventing Runway Excursions** ***Timescales:*** Initial operational capability: 01/09/2013 Full operational capability: 31/01/2018		**100%**	**Completed**
-				
-				**31/12/2014**
REG (By:01/2018)				
IAA	Parts 3.6.1 to 3.6.9 of the Action Plan implemented. Implementation is monitored through the yearly audit programme.	-	100%	Completed 31/12/2014
ASP (By:12/2014)				
IAA-ATS Provider	Appropriate parts of sections 3.1, 3.2 and 3.3 of the Action Plan have been implemented. Reporting is done through the yearly audit programme.	-	100%	Completed 31/12/2014
APO (By:12/2014)				
DUBLIN Airport Authority	Implementation of appropriate sections of the Action Plan completed. Reporting is done through the yearly audit programme.	-	100%	Completed 31/12/2014

Additional Objectives for ICAO ASBU Monitoring

AOM21.1	**Direct Routing** ***Timescales:*** Initial Operational Capability: 01/01/2015 Full Operational Capability: 31/12/2017		**100%**	**Completed**
-				
Direct routeings were introduced in Ireland as part of the Free Route project implemented on the 17/12/2009				**17/12/2009**
ASP (By:12/2017)				
IAA-ATS Provider	See AOM21.2 - Implement Free Route Airspace	-	100%	Completed 17/12/2009

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**
-				
The IAA has implemented STCA - Level 2 in all ACCs, TMAs and TWR units, which provide radar services. Major system upgrade (COOPANS) was complete in 2011 incorporating all STCA Level 2 requirements. Upgrades to the STCA function have been conducted in line with the EUROCONTROL Specification and STCA parameters have been tuned to the operational environment according to it.				**31/12/2011**
ASP (By:01/2013)				
IAA-ATS Provider	The IAA has implemented STCA - Level 2 in all ACCs, TMAs and TWR units which provide radar services. Major system upgrade (COOPANS) was complete in 2011 incorporating all STCA Level 2 requirements. Upgrades to the STCA function have been conducted in line with the EUROCONTROL Specification and STCA parameters have been tuned to the operational environment according to it.	-	100%	Completed 31/12/2011

ATC02.9	**Short Term Conflict Alert (STCA) for TMAs** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 31/12/2020		**100%**	**Completed**
	-			
The IAA has implemented STCA - Level 2 in all ACCs, TMAs and TWR units which provide radar services. Major system upgrade (COOPANS) was complete in 2011 incorporating all STCA Level 2 requirements. Upgrades to the STCA function have been conducted in line with the EUROCONTROL Specification and STCA parameters have been tuned to the operational environment according to it. **This does not include Multi-Hypothesis STCA algorithm, as the ATM system STCA is based on system calculated 90 second warning, based on the system derived flight trajectory/profile.**				**31/12/2017**
ASP (By:12/2020)				
IAA-ATS Provider	The IAA has implemented STCA - Level 2 in all ACCs, TMAs and TWR units which provide radar services. Major system upgrade (COOPANS) was complete in 2011 incorporating all STCA Level 2 requirements. Upgrades to the STCA function have been conducted in line with the EUROCONTROL Specification and STCA parameters have been tuned to the operational environment according to it.	-	100%	Completed 31/12/2017

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**
	-			
Objective implemented according to EASA requirements. AIC No 02/15 published in February 2015 to provide guidance and/or awareness to AOC holders and general aviation stakeholders (as applicable) on the implementation of various Commission regulations, including Regulation (EU) No 1332/2011.				**31/12/2015**
REG (By:12/2015)				
IAA	Done according to EASA requirements	-	100%	Completed 31/12/2015
ASP (By:03/2012)				
IAA-ATS Provider	Done according to EASA requirements	-	100%	Completed 31/03/2012
MIL (By:12/2015)				
Mil. Authority	Done according to EASA requirements	-	100%	Completed 31/12/2015

FCM01	**Implement enhanced tactical flow management services** ***Timescales:*** Initial operational capability: 01/08/2001 Full operational capability: 31/12/2006		**100%**	**Completed**
	-			
All SLoAs implemented except supplying the CFMU with Departure Planning Information (DPI), which will be implemented as part of the Dublin CDM project.				**31/12/2011**
ASP (By:07/2014)				
IAA-ATS Provider	All SLoAs implemented except supplying the CFMU with Departure Planning Information (DPI) which will be implemented as part of the Dublin CDM project.	-	100%	Completed 31/12/2011
Mil. Authority	-	-	100%	Completed -

ITY-ADQ	**Ensure Quality of Aeronautical Data and Aeronautical Information** ***Timescales:*** Entry into force of the regulation: 16/02/2010 Article 5(4)(a), Article 5(4)(b) and Article 6 to 13 to be implemented by: 30/06/2013 Article 4, Article5(1) and Article 5(2), Article 5(3) and Article 5(4)(c) to be implemented by: 30/06/2014 All data requirements implemented by: 30/06/2017		**100%**	**Completed**
	-			
The ASSET tool has not been handed to IAA ATS provider and still remains under REG control. ASSET continues to be developed to assure compliance with ADQ requirements. The ASP applies its own ADQ requirements for Aeronautical data pending rollout of the ASSET tool. The (IAA) AIS is running the ADQ ASSET data in parallel to EAD updates to assure operational accuracy. **2019 Update: This system is still being developed through the AIS and through the IAA Operations Directorate. The IAA position is that 96% of requirements are met subject to correction of some system anomalies, NSA sign-off and assurance that all aeronautical data providers comply with requirements.** **2020 Update: A corporate IAA decision was made in 2020 to discontinue with development of ASSET. The AIS applies all requirements for ADQ through the EAD system. All aeronautical data is approved as compliant by the NSA. Further development of a solution to close out this objective is planned for 2021 and the LSSIP 2021 report will update on progress.** **A review of our ADQ processes and application against applicable Regulations EU Reg 2017/373 and EU Reg 2020/469 indicates a compliance level of c.80% with NSA verification of compliance of this data included.** **2021 Update: ADQ requirements are applied to all Aeronautical/AIP published data under the oversight of IAA SRD (REG). This objective is recorded as "Completed" for the 2021 LSSIP cycle.**			**31/12/2021**
REG (By:06/2017)				
IAA	ADQ requirements are applied to all Aeronautical/AIP published data under the oversight of IAA SRD (REG). This objective is recorded as "Completed" for the 2021 LSSIP cycle.	-	100%	Completed 31/12/2021
ASP (By:06/2017)				
IAA-ATS Provider	All aeronautical data sponsored or produced by the IAA ANSP complies with ADQ requirements.	-	100%	Completed 31/12/2021
APO (By:06/2017)				
DUBLIN Airport Authority	Recorded as completed for the 2021 LSSIP cycle.	-	100%	Completed 31/12/2021

ITY-COTR	**Implementation of ground-ground automated co-ordination processes** ***Timescales:*** Entry into force of Regulation: 27/07/2006 For putting into service of EATMN systems in respect of notification and initial coordination processes: 27/07/2006 For putting into service of EATMN systems in respect of Revision of Coordination, Abrogation of Coordination, Basic Flight Data and Change to Basic Flight Data: 01/01/2009 To all EATMN systems in operation by 12/2012: 31/12/2012		**100%**	**Completed**
	-			
Notification, Initial Coordination, Basic Flight Data & Change to Basic Flight Data processes implemented as per Commission Regulation (EC) No 1032/2006. System also capable of Revision of Coordination and Abrogation of Coordination process, however awaiting UK system to be ready for operational implementation. Logon Forward and Next Authority Notified processes were implemented in the latest COOPANS upgrade as per Commission Regulation (EC) No 30/2009 in Q1/2014.				**31/12/2011**
ASP (By:12/2012)				
IAA-ATS Provider	Notification, Initial Coordination, Basic Flight Data & Change to Basic Flight Data processes implemented as per Commission Regulation (EC) No 1032/2006. System also capable of Revision of Coordination and Abrogation of Coordination process, however awaiting UK system to be ready for operational implementation. Logon Forward and Next Authority Notified processes were implemented in the latest COOPANS upgrade as per Commission Regulation (EC) No 30/2009 in Q1/2014.	-	100%	Completed 31/12/2011
MIL (By:12/2012)				
Mil. Authority	Civil and Military share the same system.	-	100%	Completed 31/12/2011

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*	0%	Ongoing
EICK - CORK			
A trial of Remote Tower technology for both Cork Airport (EICK) and Shannon Airport (EINN), where ATS services are provided by the IAA, has been completed. This trial involved provision of an ATS service to both airports simultaneously. Operational rollout is now being progressed and a further update will be included in the 2018 LSSIP Report . Update 2020: The rollout of Remote Tower services has been postponed for now. A new set of project priorities will be examined in 2021 in the context of cost reductions as a result of COVID 19. Update 2021: No further developments to report for this LSSIP cycle.			31/12/2023

AOP14	Remote Tower Services *Applicability and timescale: Local*	0%	Ongoing
EINN - SHANNON			
A trial of Remote Tower technology for both Cork Airport (EICK) and Shannon Airport (EINN), where ATS services are provided by the IAA, has been completed. This trial involved provision of an ATS service to both airports simultaneously. Operational rollout is now being progressed and a further update will be included in the 2018 LSSIP Report. Update 2020: The rollout of Remote Tower services has been postponed for now. A new set of project priorities will be examined in 2021 in the context of cost reductions as a result of COVID 19. Update 2021: No further progress to report for 2021 LSSIP cycle.			30/06/2023

AOP15	Enhanced traffic situational awareness and airport safety nets for the vehicle drivers *Applicability and timescale: Local*	0%	Not yet planned
EIDW - Dublin Airport			
To be addressed after EIDW North Runway (new parallel runway 10L/28R) becomes operational August 2022 and in alignment with the AOP12.1 objective.			30/12/2025

AOP16	Guidance assistance through airfield ground lighting *Applicability and timescale: Local*	0%	Not yet planned
EIDW - Dublin Airport			
To be addressed after EIDW North Runway becomes operational.			30/12/2025

AOP17	Provision/integration of departure planning information to NMOC *Applicability and timescale: Local*	0%	Not yet planned
EICK - CORK			
EICK falls into this category. No update for 2020 due to COVID19 delaying progress. 2021 update: under review in alignment with AOP19 (EIDW) objective.			30/12/2025

AOP18	Runway Status Lights (RWSL) *Applicability and timescale: Local*	0%	Not yet planned
EIDW - Dublin Airport			
EIDW currently the only airport where A-SMGCS is implemented. EICK under consideration for installation of A-SMGCS. Update 2020: No progress to report as COVID19 has delayed progress on this item. Update 2021: No update for 2021 LSSIP cycle. Update will be provided for 2022 report and post operational implementation of new parallel runway 10L/28R.			30/12/2025

ATC18	Multi-Sector Planning En-route - 1P2T *Applicability and timescale: Local*	50%	Ongoing
-			
The Shannon En-route ACC has commenced operations of Single Person Sectors. These are shoulder sectors with lower traffic demand and traffic is monitored centrally by a centre co-ordinator(s). This is seen as a step towards 1P2T configuration (at least partially). A similar arrangement is in place for the Dublin ATCC, with single ATCO sectors managed and planned for by a centre co-ordinator. Progress continues on this project. Staffing and Sector arrangements during COVID19 resulted in the utilisation of multi sector planners co-ordinationg at a distance from socially distance sector ATCOs. Project is also being progressed through the "NM Excellence Programme."			31/12/2022

ATC20	Enhanced STCA with down-linked parameters via Mode S EHS *Applicability and timescale: Local*	0%	Not yet planned
-			
Not yet planned.			31/12/2025

ENV02	Airport Collaborative Environmental Management *Applicability and timescale: Local*	100%	Completed
EIDW - Dublin Airport			
Dublin airport has a consultation process with all core stakeholders and consults on noise abatement procedures, emission reduction, CDA/CDOs and noise-track adherence. Noise monitoring equipment is in place. The Airport Sustainability Report is published annually. Facilities for recovering de-icing fluid are in place. All relevant staff are trained in the environmental impact of aircraft operation.			31/12/2012

ENV03	Continuous Climb Operations (CCO) *Applicability and timescale: Local*	75%	Ongoing
EICK - CORK			
PBN (RNAV) SIDs and STARs have been in place for EICK since 2008. 95% of air traffic departing receives a continuous climb on these SIDs, despite an ATC altitude restriction to ensure separation. As part of development of RNP IFPs for all runways at EICK, these SIDs will be reviewed to better serve the CCO requirements of traffic. The IAA as the originator of instrument Flight Procedures for EICK works closely with the airport authority, daa to maximise CCO and CDO operations. Through monthly operations meetings (IAA ANSP, daa, AOCs), AOCs are updated on any development of flight procedures. Update 2020: Although the EICK IFPs were updated with an effective date of 26/04/2018, further development work in support of CCO continues. As part of the FIR airspace re-organisation project, a CCO deliverable is expected. 2021 Update: Further development of IFPs for EICK that fully support CDO/CCO planned for completion by end 2022.			31/12/2022

ENV03	Continuous Climb Operations (CCO) *Applicability and timescale: Local*	100%	Completed
EIDW - Dublin Airport			
With the introduction of the Point Merge System for arriving traffic to RWYs 10 and 28 at EIDW, PBN SIDs have been developed to facilitate CCO operations. There are some ATC restrictions for climbing traffic but approximately 95% of departures are issued continuous climb. The location of EIDW adjacent to the UK IOM Sector can impact on higher levels being attained. This is under continuous review. With the development of the North Runway for EIDW, flight procedures will be integrated to maintain this facility and improve where possible. A report on developments will be included in future LSSIP and ABSU reports. The IAA as the originator of instrument Flight Procedures for EIDW works closely with the airport authority, DAA to maximise CCO and CDO operations. The majority of AOCs at EIDW are based at EIDW. Through monthly operations meetings (IAA ANSP, daa, AOCs), AOCs are updated on any development of flight procedures.			31/12/2015

ENV03	Continuous Climb Operations (CCO) *Applicability and timescale: Local*	75%	Ongoing
EINN - SHANNON			
PBN (RNAV) SIDs and STARs have been in place for EINN since 2010. 95% of air traffic departing receives a continuous on these SIDs, despite an ATC altitude restriction to ensure separation. As part of development of RNP IFPs for all runways at EINN, these SIDs will be reviewed to better serve the CCO requirements of traffic. The IAA as the originator of instrument Flight Procedures for EINN works closely with the Shannon Airport Authority (SAA) to maximise CCO and CDO operations. Through monthly operations meetings (IAA ANSP, SAA, AOCs), AOCs are updated on any development of flight procedures. Update 2020: Although the EINN IFPs were updated with an effective date of 08/11/2018, further development work in support of CCO is being developed. As part of the FIR airspace re-organisation project, a CCO deliverable is expected. Update 2021: Further development of EINN IFPs that fully support CCO/CDO planned by end of 2022.			31/12/2022

6. Annexes

A. Specialists involved in the ATM implementation reporting for Ireland

LSSIP Co-ordination

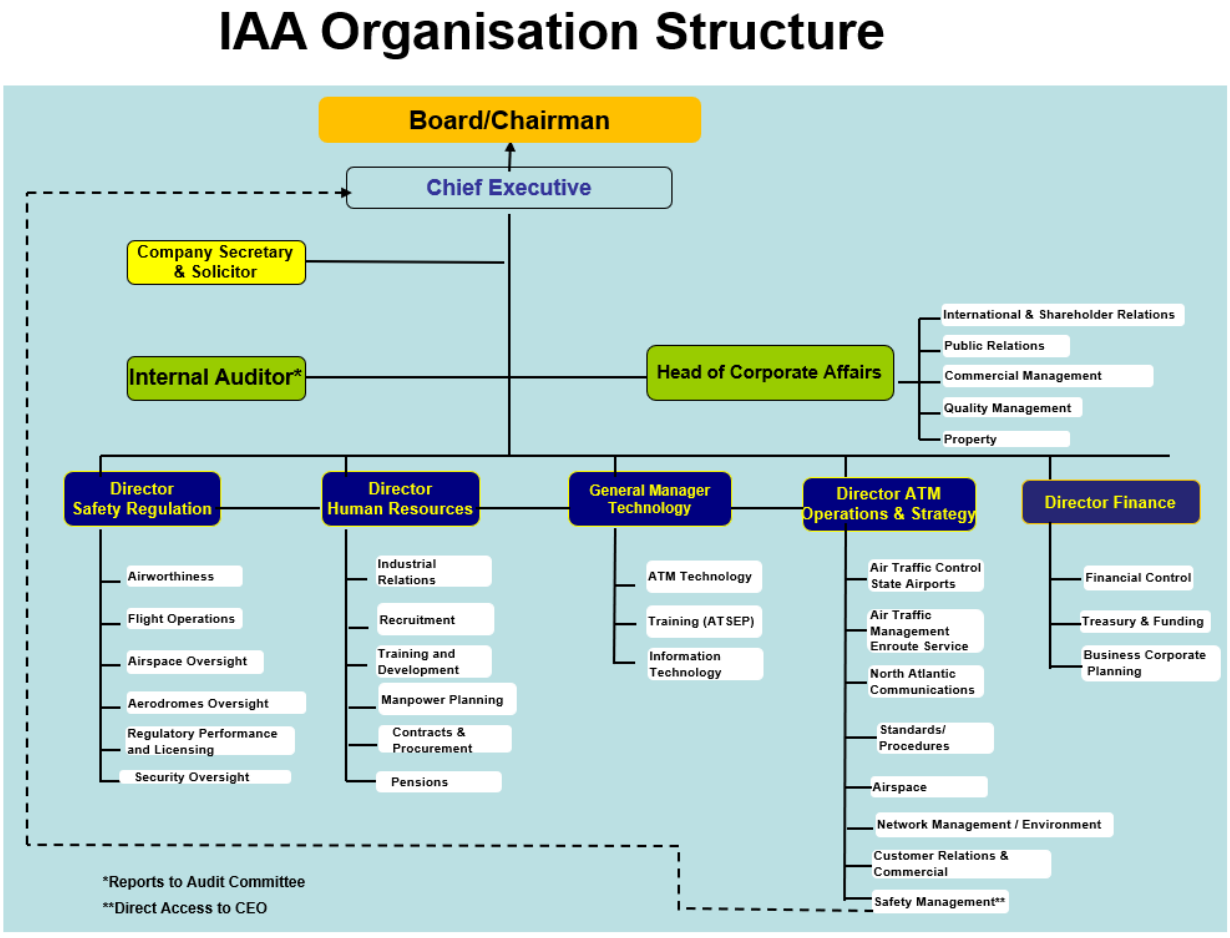
LSSIP Focal Points	Organisation	Name
LSSIP National Focal Point	IAA	Cathal MAC CRIOSTAIL
LSSIP Focal Point for NSA/CAA	IAA	Paul KENNEDY
LSSIP Focal Point for ANSP	IAA	Cathal MAC CRIOSTAIL
LSSIP Focal Point for Airport	daa	Mary HERBERT/ Paul O'DOHERTY
LSSIP Focal Point for Military	IAC	Lt. Col. Ray MARTIN (Chief Air Traffic Services Officer)
LSSIP Focal point for MET	MET	Tony TIGHE

Other Focal Points	Organisation	Name
Focal Point for OLDI	IAA ANSP	Kieran FOX
Focal Point for NETSYS	IAA ANSP	Joe RYAN
Focal Point for SUR	IAA ANSP	Charlie O LOUGHLIN
Focal Point for SDP/CP1	IAA ANSP	Cathal MAC CRIOSTAIL

B. National stakeholders organisation charts

The Irish Organisation to manage related EATM matters is as follows:

Responsible Ministry	Civil Aviation Authority/Administration	Provider of Civil Air Traffic Services
Department of Transport	IRISH AVIATION AUTHORITY PC: P. Kearney, Chief Executive IAA ANSP PC: W. Hann, Director ATM Operations & Strategy PC: Gerald Caffrey, General Manager Technology FP: Cathal MAC CRIOSTAIL, IAA Manager Airspace & Navigation	



Note: *See Section 1.2-The ANSP and the Competent Authority* Civil Aviation Authority *(Civil Aviation Authority) roles remain currently all part of the IAA, with separation of the two entities expected to be completed in 2022. The 2022 LSSSIP Report will reflect these new organisational structures, with new organograms accordingly for the "New" IAA (Aviation Regulator) and the "New" ANSP (AirNav Ireland). The above organogram is included for the 2021 LSSIP Report as it reflects current arrangements while the organisation transitions from one entity to two.*

C. Implementation Objectives' links with other plans

The table below (extracted from the MPL3 Plan 2021) shows for each implementation objective, the mapping of the L3 implementation Objectives to the corresponding SESAR Essential Operational Changes, the SESAR Solutions, the Deployment Program families, the ICAO ASBU, the EASA EPAS, the Network Strategy Plan, the Airspace Architecture Study Transition Plan (AAS TP) Milestones and the SESAR Key Features.

EOC	Level 3 Implementation Objectives	SESAR Sol.	DP Family	ICAO ASBUs	EPAS	NSP	AAS TP	KF
CNS	ATC21 – Composite surveillance ADS-B/WAM	#114	-	ASUR-B0/1 ASUR-B0/2	RMT.0679 RMT.0519	SO8/3 SO8/4	AM-1.17	EAI
	COM10.1 – Migration from AFTN to AMHS (Basic service)	-	-	COMI B0/7	-	SO7/4	-	-
	COM10.2 – Extended AMHS	-	-	COMI B0/7	-	SO7/4	-	-
	COM11.1 – Voice over Internet Protocol (VoIP) in En-Route	-	-	COMI B2/1	-	SO8/4	AM-1.3	EAI
	COM11.2 – Voice over Internet Protocol (VoIP) in Airport/Terminal	-	-	COMI B2/1	-	SO8/4	-	EAI
	ITY-ACID – Aircraft identification	-	-	-	-	SO8/2	-	EAI
	ITY-AGDL – Initial ATC air-ground data link services	-	-	COMI B0/4 COMI B1/2	RMT.0524	SO4/1 SO8/3	AM-1.1	EAI
	ITY-AGVCS2 – 8.33 kHz Air-Ground Voice Channel Spacing below FL195	-	-	-	-	SO8/1	-	EAI
	NAV10 – RNP Approach Procedures to instrument RWY	#103	-	APTA B0/1 APTA B1/1 NAVS B0/2	RMT.0445 RMT.0643	SO6/5	-	AATS
	NAV11 – Precision Approach using GBAS CAT II/III based on GPS L1	#55	-	NAVS B1/1	RMT.0682 RMT.0379	-	-	HPAO
iN	AOM13.1 – Harmonise OAT and GAT handling	-	-	-	-	SO6/2	-	OANS
	AOP11.1 – Initial Airport Operations Plan	#21	2.2.1	ACDM-B1/1	-	SO6/2	-	HPAO
	AOP11.2 – Extended Airport Operations Plan	#21	2.2.2	ACDM-B1/1	-	SO5/2	-	HPAO
	AOP17 – Provision/integration of DPI to NMOC	#61	-	NOPS B0/4	-	-	-	HPAO

EOC	Level 3 Implementation Objectives	SESAR Sol.	DP Family	ICAO ASBUs	EPAS	NSP	AAS TP	KF
	COM12 – NewPENS	-	-	COMI B1/1	-	SO2/3 SO2/4 SO8/3 SO8/4	-	EAI
	FCM03 – Collaborative flight planning	-	-	NOPS B0/2	-	SO4/3	AM-1.14	OANS
	FCM04.2 – Enhanced Short Term ATFCM Measures	#17	4.1.1	NOPS B1/1	-	SO4/5	AM-1.11	OANS
	FCM06.1 – Automated Support for Traffic Complexity Assessment and Flight Planning interfaces	#19	4.3.1	NOPS B0/2, NOPS B1/4	-	SO4/3, SO4/5	AM-1.13	OANS
	FCM09 – Enhanced ATFM Slot swapping	#56	-	NOPS B1/7	-	SO6/1	-	OANS
	FCM10 – Interactive rolling NOP	#18 #20	4.2.1	NOPS B1/2	-	SO2/2 SO4/2 SO4/5	AM-1.9 AM-1.12	OANS
	FCM11.1 – Initial AOP/NOP Information Sharing	#20 #21	4.2.2	NOPS-B0/4	-	SO4/4 SO4/5 SO5/2	AM-1.12	OANS
	FCM11.2 – AOP/NOP integration	#18 #20 #21	4.4.1	NOPS-B1/3	-	SO4/4 SO4/5 SO5/2	AM-1.12	OANS
	INF10.2 – Stakeholders' SWIM PKI and cyber security	#46	5.2.1	SWIM-B2/3	RMT.0720	SO2/4	AM-1.5	EAI
	INF10.3 – Aeronautical Information Exchange - Airspace structure service	#46	5.3.1	-	-	SO2/4	AM-1.5	EAI
	INF10.4 – Aeronautical Information Exchange - Airspace availability service	#46	5.3.1	-	-	SO2/4	AM-1.5	EAI
	INF10.5 – Aeronautical Information Exchange - Airspace Reservation (ARES) service	#46	5.3.1	-	-	SO2/4	AM-1.5	EAI
	INF10.6 – Aeronautical Information Exchange - Digital NOTAM service	#34 #46	5.3.1	-	-	SO2/4	AM-1.5	EAI
	INF10.7 – Aeronautical Information Exchange - Aerodrome Mapping information exchange service	#34 #46	5.3.1	-	-	SO2/4	AM-1.5	EAI

EOC	Level 3 Implementation Objectives	SESAR Sol.	DP Family	ICAO ASBUs	EPAS	NSP	AAS TP	KF
	INF10.8 – Aeronautical Information Exchange - Aeronautical Information Features service	#34 #46	5.3.1	-	-	SO2/4	AM-1.5	EAI
	INF10.9 – Meteorological Information Exchange - Volcanic ash concentration service	#34 #35 #46	5.4.1	-	-	SO2/4	AM-1.5	EAI
	INF10.10 – Meteorological Information Exchange - Aerodrome Meteorological information Service	#34 #35 #46	5.4.1	-	-	SO2/4	AM-1.5	EAI
	INF10.11 – Meteorological Information Exchange - En-Route and Approach Meteorological information service	#34 #35 #46	5.4.1	-	-	SO2/4	AM-1.5	EAI
	INF10.12 – Meteorological Information Exchange - Network Manager Meteorological Information	#34 #35 #46	5.4.1	-	-	SO2/4	AM-1.5	EAI
	INF10.13 – Cooperative Network Information Exchange - ATFCM Tactical Updates Service	#46	5.5.1	-	-	SO2/4	AM-1.5	EAI
	INF10.14 – Cooperative Network Information Exchange - Flight Management Service	#46	5.5.1	-	-	SO2/4, SO5/2	AM-1.5	EAI
	INF10.15 – Cooperative Network Information Exchange - Measures Service	#46	5.5.1	-	-	SO2/4, SO4/5	AM-1.5	EAI
	INF10.16 – Cooperative Network Information Exchange - Short Term ATFCM Measures services	#46	5.5.1	-	-	SO2/4, SO4/5	AM-1.5	EAI
	INF10.17 – Cooperative Network Information Exchange - Counts service	#46	5.5.1	-	-	SO2/4	AM-1.5	EAI

EOC	Level 3 Implementation Objectives	SESAR Sol.	DP Family	ICAO ASBUs	EPAS	NSP	AAS TP	KF
	INF10.18 – Flight Information Exchange - Filing Service	#46	5.6.1	FICE-B2/2	-	SO2/4	AM-1.5	EAI
	INF10.19 – Flight Information Exchange - Flight Data Request Service	#46	5.6.1	FICE-B2/4	-	SO2/4	AM-1.5	EAI
	INF10.20 – Flight Information Exchange - Notification Service	#46	5.6.1	FICE-B2/5	-	SO2/4	AM-1.5	EAI
	INF10.21 – Flight Information Exchange - Publication Service	#46	5.6.1	FICE-B2/6	-	SO2/4	AM-1.5	EAI
	INF10.22 – Flight Information Exchange - Trial Service	#46	5.6.1	FICE-B2/3	-	SO2/4	AM-1.5	EAI
	INF10.23 – Flight Information Exchange - Extended AMAN SWIM Service	#46	5.6.1	DAIM-B2/1 SWIM-B3/1	-	SO2/4	AM-1.5	EAI
dS	INF07 – Electronic Terrain and Obstacle Data (e-TOD)	-	-	DAIM B1/3 DAIM B1/4	RMT.0703 RMT.0722	SO2/5	-	EAI
U-s	-	-	-	-	-	-	-	-
vS	AOP14 – Remote Tower Services	#12 #13 #52 #71	-	RATS B1/1	RMT.0624	SO6/5	-	HPAO
	AOP04.1 – A-SMGCS Surveillance (former Level 1)	#70	-	SURF B0/2	MST.0029	SO6/6	-	HPAO
	AOP04.2 – A-SMGCS RMCA (former Level 2)	-	-	SURF B0/3	MST.0029	SO6/6	-	HPAO
ATp	AOP05 – Airport CDM	-	-	ACDM B0/1 ACDM B0/2 NOPS B0/4	-	SO6/4	-	HPAO
	AOP10 – Time Based Separation	#64	-	WAKE B2/7	-	SO6/5	-	HPAO
	AOP12.1 – Airport Safety Nets	#02	2.3.1	SURF B1/3	MST.0029	SP6/6	-	HPAO
	AOP13 – Automated assistance to Controller for Surface Movement planning and routing	#22 #53	-	SURF B1/4	MST.0029	SO6/6	-	HPAO

EOC	Level 3 Implementation Objectives	SESAR Sol.	DP Family	ICAO ASBUs	EPAS	NSP	AAS TP	KF
	AOP15 – Safety Nets for vehicle drivers	#04	-	SURF B2/2	MST.0029	-	-	HPAO
	AOP16 – Guidance assistance through airfield lighting	#47	-	SURF B1/1	MST.0029	-	-	HPAO
	AOP18 – Runway Status Lights	#01	-	-	MST.0029	-	-	HPAO
	AOP19 – Departure Management Synchronised with Pre-departure sequencing	#53 #106	2.1.1	RSEQ-B0/2	-		-	HPAO
	AOP20 – Wake Turbulence Separations for Departures based on Static Aircraft Characteristics (S-PWS-D)	PJ.02-01-06	-	WAKE-B2/4	RMT.0476		-	HPAO
	AOP21 – Wake Turbulence Separations for Arrivals based on Static Aircraft Characteristics (S-PWS-A)	PJ.02-01-04	-	WAKE-B2/4	RMT.0476		-	HPAO
	AOP22 – Minimum pair separations based on SRP	PJ.02-03	-	-	-		-	HPAO
	AOP23 – Integrated runway sequence for full traffic optimization on single and multiple runway airports	PJ.02-08-01	-	RSEQ – B2/1	-		-	HPAO
	AOP24 – Optimised use of runway configuration for multiple runway airports	PJ.02-08-02	-	RSEQ-B3/3	-		-	HPAO
	ATC07.1 – Arrival management tools	-	-	RSEQ B0/1	-	SO4/1	-	AATS
	ATC19 – Enhanced AMAN-DMAN integration	#54	1.2.1	RSEQ B2/1	-	SO6/5 SO4/1	-	AATS
	ENV01 – Continuous Descent Operations	#11	-	APTA B0/4 APTA-B1/4	-	SO6/5	-	AATS
	ENV02 – Airport Collaborative Environmental Management	-	-	-	-	-	-	HPAO
	ENV03 – Continuous Climb Operations	-	-	APTA B0/5 APTA-B1/5	-	SO6/5	-	AATS

EOC	Level 3 Implementation Objectives	SESAR Sol.	DP Family	ICAO ASBUs	EPAS	NSP	AAS TP	KF
	NAV03.1 – RNAV1 in TMA Operations	#62	-	APTA B0/2	RMT.0445	SO6/5	-	AATS
	NAV03.2 – RNP1 in TMA Operations	#09, #51	-	APTA B1/2	RMT.0445	SO6/5	-	AATS
	SAF11 – Improve runway safety by preventing runway excursions	-	-	-	MST.0028 RMT.0570 RMT.0703	-	-	HPAO
dA	AOM19.4 – Management of Pre-defined Airspace Configurations	#31 #66	3.1.2	NOPS B1/6 FRTO B1/4	-	SO3/2 SO3/3	AM-1.10 AM-1.8-	OANS
	AOM19.5 – ASM and A-FUA	#31 #66	3.1.1	NOPS B1/5, NOPS B0/1, FRTO B1/3, FRTO B0/2	-	SO3/2, SO3/3	AM-1.10 AM-1.8	OANS
	AOM21.2 – Initial Free Route Airspace	#32 #33 #66	3.2.1	FRTO B1/1	-	SO3/1 SO3/4	AM-1.10 AM-5.1	AATS
	AOM21.3 – Enhanced Free Route Airspace Operations	PJ.06-01	3.2.2	FRTO B2/3	-	SO3/1 SO3/4	AM-1.6 AM-1.7	AATS
	ATC12.1 – MONA, TCT and MTCD	#27 #104	3.2.1	FRTO B0/4 FRTO B1/5	-	SO3/1 SO4/1	AM-1.15 AM-5.1	AATS
	ATC15.1 – Initial Extension of AMAN to En-route	-	-	-	-	SO4/1	-	AATS
	ATC15.2 – Arrival Management Extended to En-route Airspace	#05	1.1.1	RSEQ B1/1 NOPS B1/8	-	SO4/1	AM-1.3	AATS
	ATC18 – Multi Sector Planning En-route – 1P2T	#63	-	FRTO B1/6	-	SO4/1	AM-4.3 AM-5.1	AATS
	ITY-FMTP – Apply a common flight message transfer protocol (FMTP)	-	-	-	-	SO8/3	AM-1.3	EAI
TBO	ATC02.8 – Ground based safety nets	-	3.2.1	SNET B0/1 SNET B0/2 SNET B0/3 SNET B0/4	-	SO4/1	-	AATS
	ATC20 – Enhanced STCA with DAP via Mode S EHS	#69	-	SNET B1/1	MST.0030	SO7/2	-	AATS
	ATC22 – Initial Air-Ground Trajectory	#115	6.1.1	-	RMT.0682	SO4/5	AM-1.2	EAI

EOC	Level 3 Implementation Objectives	SESAR Sol.	DP Family	ICAO ASBUs	EPAS	NSP	AAS TP	KF
	Information Sharing (Airborne Domain)							
	ATC23 – Initial Air-Ground Trajectory Information Sharing (Ground Domain)	#115 PJ.18-06b1	6.1.2	-	RMT.0682	SO4/5	AM-1.2	EAI
	ATC24 – Network Manager Trajectory Information Enhancement	PJ.18-06b1	6.2.1	-	RMT.0682	SO4/5	-	EAI
	ATC25 – Initial Trajectory Information Sharing ground distribution	#115	6.3.1	-	MST.0031		AM-1.2	EAI
M3	NAV12 – ATS IFR Routes for Rotorcraft Operations	#113	-	APTA B0/6	MST.0031	SO6/5	-	AATS

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

These SESAR Solutions are not included yet in the ATM MP L3 Plan.

EUROCONTROL is tasked by the SJU to identify the implementation progress of functionalities corresponding to validated SESAR Solutions published in the SJU Solutions Catalogue (https://www.sesarju.eu/newsroom/brochures-publications/sesar-solutions-catalogue), for which there is no implementation Objective (yet) in the ATM MP L3 Plan. This will allow to identify early movers and to gauge the interest generated by some of these functionalities, with the view of potentially addressing them with new Implementation Objectives in the ATM MPL3 Plan.

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

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

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
		CNS infrastructure and services				
#55	Precision approach using GBAS Category II/III https://www.sesarju.eu/sesar-solutions/precision-approaches-using-gbas-cat-iiiii	GBAS has limited (GBAS Local Object Consideration Areas) or no protection areas, usually located outside aircraft movement areas. This allows the reduction of runway occupancy times in LVP, reducing spacing between arrival aircraft. Use of GBAS Cat II/III eliminates ILS critical zones, enables flexible approaches, offers PA where ILS cannot due to geography and signal stability (immune to signal bends inherent in ILS), complements ILS at airports with multiple RWYs during LVP, the rationalization of some ILS thus reducing operation and maintenance costs and optimizing spectrum; offers PA at aerodromes without SBAS coverage or where PA performances cannot be achieved with SBAS. GBAS CATII/II improves resilience of airport capacity with fewer flight cancellations due to LVP in force. GBAS CATII/III will enable runway ends that are not ILS CATII/III equipped to be used for CATII/III operations as long as the runway is CATII/III qualified.	Dublin Airport EIDW	Planned	12/31/30	A full assessment of the potential rollout of GBAS (at Dublin Airport) was undertaken, involving multiple stakeholders, including Boeing and Honeywell and Indra. A decision to proceed will be taken once a business case and CAPEX funding can be completed and may be incorporated within RP4 deliverables.
#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		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	https://www.sesarju.eu/index.php/sesar-solutions/aeronautical-mobile-airport-communication-system-aeromacs	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 harmonised and available capabilities according to ICAO Global Air Navigation Plan (GANP).				
#109	Air traffic services (ATS) datalink using Iris Precursor https://www.sesarju.eu/index.php/sesar-solutions/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.		Not Planned		
#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		Ongoing	12/31/22	As part of ANSP Surveillance Domain activity

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	https://www.sesarju.eu/sesar-solutions/ads-b-surveillance-aircraft-flight-and-surface	techniques against deliberate spoofing of the ground system by outside agents. These techniques can also be used to cope with malfunctioning of avionics equipment. SESAR has contributed to the relevant standards, such as EUROCAE technical specifications, incorporating new functionalities developed for the ADS-B ground station, ASTERIX interface specifications as well as to the SDPD specifications.				
#114	Composite Surveillance ADS-B / WAM https://www.sesarju.eu/sesar-solutions/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.		Not Planned		
PJ.14-02-06	AeroMACs integrated with ATN,	The SESAR Solution PJ14.02.06 (“AeroMACS integrated with ATN, Digital Voice and		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	Digital Voice and Multilink https://www.sesarju.eu/sesar-solutions/aeromacs-integrated-atn-digital-voice-and-multilink	Multilink") builds upon Solution #102 (AeroMACS) published in the SESAR 1 catalogue. AeroMACS is part of the Future Communication Infrastructure supporting the Airport Surface Component and is reflected within the ICAO Global Air Navigation Plan (GANP) and the ICAO Communication Roadmap in the GANP.				
PJ.14-03-04	RNP1 reversion based on DME-DME https://www.sesarju.eu/index.php/sesar-solutions/rnp1-reversion-based-dmedme	Alternative-Position, Navigation and Timing (A-PNT) is the technological enabler related with the need to introduce ground and airborne systems that can support currently defined and standardized PBN and other CNS-based operations and provide a backup with the required level of performance in case of degradation and absence/loss of GNSS. According to the existing regulations, RNP1 navigation integrity requires the use of GNSS positioning. Therefore, the GNSS loss may become a critical issue for the design of TMA airspace complying with PBN-IR.		Not Planned		
PJ.16-04-01	Multi-touch inputs (MTI) for the human machine interface	Providing the human machine interface (HMI) of the controller working position (CWP) with advanced technologies can help to minimise the workload and mental strain on controllers in area control centres and towers. This is		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	(HMI) of the controller working position (CWP) https://www.sesarju.eu/sesar-solutions/multi-touch-inputs-mti-human-machine-interface-hmi-controller-working-position-cwp	especially true when managing high density traffic or complex operations. SESAR 1 research found multi-touch functionality including handheld or tablet devices are technically mature enough to be used in the ATC/ATM environment. In addition to providing faster input methods such as 'one-touch' cleared flights, the technology supports complex tools such as map manipulation and gestures recognition to enhance usability and controller productivity.				

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
						
#57	User-driven prioritisation process (UDPP) departure https://www.sesarju.eu/sesar-solutions/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.		Not Planned		
#67	AOC data increasing trajectory prediction accuracy https://www.sesarju.eu/sesar-solutions/aoc-data-	Europe's vision to achieve high-performing aviation by 2035 builds on the idea of trajectory-based operations – meaning that aircraft can fly their preferred trajectory while minimising constraints due to airspace and service configurations. SESAR has introduced an early version, which makes use of flight planning data sourced from airline operational control (AOC) to help controllers optimise aircraft flight paths. This solution represents an		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	increasing-trajectory-prediction-accuracy	initial step towards the extended flight plan solution and flight and flow information for a collaborative environment (FF-ICE).				
PJ.09-03-02	AOP/NOP departure information integrated in EFPL https://www.sesarju.eu/sesar-solutions/aop nop-departure-information-integrated-efpl	Some elements of AOP/NOP information are important to consider in AU flight planning in order to better align AU and NM trajectories, improve AU fuel prediction and support target times management. These elements are: • The departure taxi time • The planned departure runways • The planned SID. With the implementation of airport CDM procedures, NM receives from most of the major airports up-to-date and reliable information in DPI messages and updates much more dynamically than the FOC this information in its planned trajectory thanks to live information received from airports. Therefore, this solution defines new information flows for AUs to consider same information as NM related to the departure phase of the flight.	Dublin airport EIDW	Planned		Dublin airport - daa
PJ.15-01	Sub-regional Demand Capacity Balancing Service https://www.	The purpose of the Sub-regional Demand Capacity Balancing (DCB) Service (Supporting the DCB capability within the ICAO Global Concept) is to facilitate an improved usage of the airspace at the sub-regional level, through enhanced planning and consequently more		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	sesarju.eu/index.php/sesar-solutions/sub-regional-demand-capacity-balancing-common-service	appropriate tactical intervention in support of AU and AO operations.				
PJ.17-01	SWIM TI purple profile for airground advisory information sharing https://www.sesarju.eu/index.php/sesar-solutions/swim-t1-purple-profile-airground-advisory-information-sharing	The SWIM-TI Purple Profile (PP) consists of open standards based on reliable and secure SWIM technical infrastructure enabling the integration of the aircraft into the SWIM network, thus giving it access to air/ground SWIM services (e.g. uplink and downlink of meteorological and aeronautical information). It will enable operational applications to uplink meteorological and aeronautical information using SWIM, as well as downlink (e.g. aircraft provided meteorological observations) of information using SWIM.		Planned		
PJ.18-02b	Flight object interoperability https://www.sesarju.eu/ind	An essential component of the future system is ground-to-ground interoperability (IOP), a solution designed to enable the swift and seamless exchange of flight trajectory information in real time between Europe's				

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	ex.php/sesar-solutions/flight-object-interoperability	network of air traffic control centres.				

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
						
PJ.15-10	The common service for aeronautical information management https://www.sesarju.eu/index.php/sesar-solutions/common-service-aeronautical-information-management	The Common Service for Aeronautical Information Management significantly reduces the overall cost of providing AIM services by using a common, managed service instead of operating numerous individual national systems. Instead of duplicating aeronautical information and manually updating the aeronautical information in different Ground Systems, the Common Service for Aeronautical Information Management offers a means of maintaining and validating the aeronautical information once and centrally. The ground systems will have to replace their legacy data storage by an interface based on SWIM allowing		Not Planned		Being addressed internally by the ANSP in the provision of AIS services

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
		direct access to quality assured and consistent aeronautical information.				
PJ.15-11	Aeronautical digital map common service https://www.sesarju.eu/index.php/sesar-solutions/aeronautical-digital-map-common-service	The Aeronautical Digital Map Common Service (COSER) provides users the capability to retrieve graphical representation of aeronautical data/information. The output is a standardized/harmonised graphic information that can be retrieved by individual requests demanding specific geographical areas. The retrieval can be performed using regular internet protocols or through SWIM services. Instead of having to perform the rendering of aeronautical information as a visualisation in a GIS viewer or aeronautical map over and over again for different systems, generating tremendous development efforts and potentially diverging and unharmonized representations that could potentially lead to safety risks, a harmonized visualisation for different use-cases can be provided centrally.		Not Planned		Being addressed internally by the IAA Aviation Regulator
PJ.18-04a	Aeronautical dataset service https://www.sesarju.eu/index.php/sesar-solutions/aeronautical-dataset-service	The Aeronautical Dataset Service supports the provision of the aeronautical information product digital data set as defined by ICAO Annex 15: AIP data set, Obstacle data set, Terrain data set, Airport mapping data set, Instrument flight procedure data set. Providing dataset in digital format will improve the consistency and quality of the data and enhance the exchange of information. The Aeronautical Dataset Service will also help		Not Planned		Being addressed internally by the ANSP in the provision of AIS services

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
		service providers meet the requirements for the provision of digital dataset information required by ICAO. The service is created fully in line with the requirements and guidelines defined in the EUROCONTROL SWIM Specifications.				
PJ.18-04b-01	Ground weather management system (GWMS) https://www.sesarju.eu/sesar-solutions/ground-weather-management-system-gwms	This solution addresses the provision of local MET information to airports and considers the use of existing sensors and MET capabilities for the measurement and generation of MET data. The Glide Wind Profile has been developed as the provider of glide wind data to the Ground Weather Management System (GWMS) using mature sources like Radar and Lidar sensors. The purpose is to enhance separation procedures based on the collected wind data. The METForTAM is an information service that provides enhanced local MET information (e.g. METEO forecasts and observations) to a specific airport (airport operational centre, APOC). The developed capability and information service aim at enhancing MET data provision capabilities in order to improve the accuracy and timely delivery of expected Meteorological conditions at an airport.		Completed		Being addressed by MET Eireann (an Reg. (EU) 2017-3737 certified entity)
PJ.18-04b-02	Improved MET information services https://www.	Cb-global capability uses data from geostationary satellites to detect, track, and nowcast thunderstorms in order to provide pilots an overview of the current weather hazard situation beyond the limited view of the		Completed		Being addressed by MET Eireann (an Reg. (EU) 2017-3737 certified entity)

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	sesarju.eu/sesar-solutions/improved-met-information-services	on-board radar. It is relevant for the upper airspace en-route and enables a pilot to strategically plan a safe and smart flight route around the thunderstorms well ahead in time instead of flying tactical manoeuvres and searching for gaps between the thunder cells.				

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
		ATp Airport and TMA performance				
#11	Continuous descent operations (CDO) using point merge https://www.sesarju.eu/sesar-solutions/continuous-descent-operations-cdo-using-	Progressive implementation of procedures for Continuous Descent Operations (CDO) and Continuous Climb Operations (CCO) in higher density traffic or to higher levels, optimised for each airport arrival/departure procedure		Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	point-merge					
#23	D-TAXI service for controller-pilot datalink communications (CPDLC) application https://www.sesarju.eu/sesar-solutions/d-taxi-service-controller-pilot-datalink-communications-cpdlc-application	Use of data link communications between the Tower Controllers and the flight crew during surface movement. It is based on the D-TAXI service from the CPDLC application, as standardised by RTCA SC214/EUROCAE WG78 (DO-350 & DO-351). It also includes the access to this service for end users, through the Tower CWP for the ATCO and through the aircraft DCDU for the flight crew.		Not Planned		
#26	Manual taxi routing function	Presenting a graphical display of the taxi route instructions received from air traffic control provides another means for the flight crew to check they are following the right route. The on-board moving map of the airfield can be overlaid with the taxi route so the pilot can see exactly where the aircraft is in relation to the cleared route. If the taxi clearance is sent via datalink, through the D-TAXI service, the corresponding message is interpreted and translated as a graphical path by the on-board moving map database. If the taxi clearance is sent via voice, the flight crew can enter it		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
		manually into the airport moving map.				
#48	Virtual block control in low visibility procedures (LVPs) https://www.sesarju.eu/sesar-solutions/virtual-block-control-low-visibility-procedures-lvps	In low visibility conditions, the tower controller working positions are provided with Virtual Stop Bars (VSB) to improve low visibility operations and enhance controllers' situational awareness. Virtual Stop Bars can be used by the controller to reduce block-sizes once procedural control applies. Additional controller safety nets will be available to indicate violations of Stop Bars (including Virtual Stop Bars) and to monitor aircraft for any kind of unauthorised movement (Watch Dog).				
#107	Point merge in complex terminal airspace https://www.sesarju.eu/sesar-solutions/point-merge-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).		Completed		
#116	De-icing management tool	The solution increases the accuracy of information related to when the procedure is		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	https://www.sesarju.eu/sesar-solutions/de-icing-management-tool	going to take place, how long it will take and when the aircraft will be ready to taxi for departure, which is currently calculated by predetermined estimates. The solution means that air traffic controllers no longer need to work without situational awareness of de-icing activities and needing to make their own estimates of when aircraft are ready for departure. The solution envisages that de-icing operations are no longer characterised by the A-CDM concept as 'adverse conditions', i.e. a state that is in need of collaborative recovery procedures, but rather a part of normal operations in the winter period. The DIMT allows for the scheduling and monitoring of de-icing operations. It is an internet browser-based tool that addresses three distinct procedures for de-icing:- Remote de-icing, which occurs at a specific location on the airport away from the parking stand;- On-stand de-icing, which occurs just before the aircraft leaves its stand; and- After-push de-icing, which occurs after the aircraft has pushed back from the stand and is positioned to start taxiing after de-icing.				
#117	Reducing Landing Minima in Low Visibility Conditions using Enhanced Flight Vision	The SESAR Solution "Reducing landing minima in low visibility conditions using enhanced Flight vision systems (EFVS)" is intended for flight crews, and corresponds to the use of EFVS visual based technologies displayed in HUD or an equivalent display system. The objective is to provide operational credit in approach as		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	Systems (EFVS) https://www.sesarju.eu/sesar-solutions/reducing-landing-minima-low-visibility-conditions-using-enhanced-flight-vision	permitted per EASA EU 965/2012 and its coming amendments (NPA 2018-06 AWO) to face to Low visibility conditions. Enabling EFVS operations with operational credits provides a greater availability of suitable destination and alternate aerodromes during periods of reduced visibility. This effectively reduces the number of weather-related delays, cancellations or diversions of flights to CAT II/III aerodromes, permits shorter routings and reduced fuel costs, a faster return to scheduled operations, and less passenger inconveniences. A unique advantage of the EFVS on board solution is that it is mainly supported by the aircraft system instead of airports and the need of complex and costly ground infrastructures as those implemented in CATII/III airports. From a global ATM network standpoint, the EFVS operation allows to retain traffic at most of secondary aerodromes by providing operational credit at most of runway ends with precision or non-precision landing minima (LPV, LNAV/ VNAV, ILS CAT1, etc.). The operational credit provided by EFVS is particularly important regarding secondary aerodromes because they usually have CAT1 or higher than CAT 1 RVR - DA/DH minima and are therefore potentially more frequently impacted by adverse weather conditions. In addition, EFVS capability is a key operational advantage more especially for the business aviation community that is mainly composed of small/ medium				

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
		operators with limited resources and operating frequently at small/ medium airports. Beyond operational credit, the Vision Systems such as the EFVS improves situational awareness in all weather conditions for all operators at all airports contributing supporting decision-making and increasing safety margin all the time.				
PJ.02-01-01	Optimised Runway Delivery on Final Approach https://www.sesarju.eu/sesar-solutions/optimised-runway-delivery-final-approach	Optimised Runway Delivery (ORD) tool is the ATC support tool to enable safe, consistent and efficient delivery of the required separation or spacing between arrival pairs on final approach to the runway-landing threshold. The ORD tool can be used to support the application of Distance Based and Time Based wake separation rules e.g. ICAO, RECAT-EU, PWS-A and WDS-A wake separation schemes, and aims at consistently and efficiently managing the spacing compression that occurs on short final from the lead aircraft crossing the deceleration fix.		Not Planned		
PJ.02-01-02	Optimised Separation Delivery for Departure https://www.sesarju.eu/sesar-solutions/optimised-	"Optimised Separation Delivery for Departure" (OSD) is the ATC support to enable safe, consistent and efficient delivery of the required separation or spacing between departure pairs from the follower aircraft becoming airborne. Different variants of the tool have been developed in SESAR 2020 Wave 1. These variants include an automatic wake count down timer and a distance indicator displayed on the		Not Planned		

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	separation-delivery-departure	tower controller's radar screen. The OSD tools can be used to support the tower controllers in the delivery of time or distance separations. This includes the departure wake separations of ICAO, RECAT-EU, PWS-D and WDS-D as well as departure route separations such as the SID separations and MDIs and ADIs. In airports that require support for both TB and DB separation and spacing rules a combined TBS / DBS variant of the OSD tool may be necessary.				
PJ.02-01-03	Weather-Dependent Reductions of Wake Turbulence Separations for Departures https://www.sesarju.eu/sesar-solutions/weather-dependent-reductions-wake-turbulence-separations-departures	Weather Dependent Separations (WDS) for departures is the conditional reduction or suspension of wake separation minima on path of departures over the straight-out initial departure path, applicable under pre-defined wind conditions, so as, to enable runway throughput increase compared to the applicable standard weather independent wake separation minima. This is on the basis that under the pre-defined wind conditions the wake turbulence generated by the lead aircraft is either wind transported out of the path of the follower aircraft on final approach or has decayed sufficiently to be acceptable to be encountered by the follower aircraft. The solution covers WDS cross wind concept for departures in segregated mode runway operations.		Not Planned		
PJ.02-01-04	Wake Turbulence	Static PairWise Separation for arrivals (S-PWS-		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	Separations (for Arrivals) based on Static Aircraft Characteristics https://www.sesarju.eu/sesar-solutions/wake-turbulence-separations-arrivals-based-static-aircraft-characteristics	A) is the efficient aircraft type pairwise wake separation rules for final approach consisting of both the 96 x 96 aircraft type based wake separation minima (for the most common aircraft in ECAC area) and the twenty wake category (20-CAT) based wake separation minima for arrival pairs involving all the remaining aircraft types. The S-PWS are applied using a separation delivery tool; the pairwise separations will be used as input into the separation delivery tool.				
PJ.02-01-05	Weather-Dependent Reductions of Wake Turbulence Separations for Final Approach https://www.sesarju.eu/sesar-solutions/weather-	"Weather-Dependent Reductions of Wake Turbulence Separations for Final Approach" aims at the optimisation of the ICAO wake turbulence separation by use of weather-dependent separation minima on arrivals (WDS-A), applicable under given wind conditions. This allows conditional reduction or suspension of separation minima for most aircraft pairs, enabling runway throughput increase compared to ICAO scheme, whilst maintaining acceptable levels of safety. This is on the basis that under the pre-defined wind conditions the wake turbulence generated by		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	dependent-reductions-wake-turbulence-separations-final-approach	the lead aircraft is either wind transported out of the path of the follower aircraft on final approach or has decayed sufficiently to be acceptable to be encountered by the follower aircraft.				
PJ.02-01-06	Wake Turbulence Separations (for Arrivals) based on Static Aircraft Characteristics https://www.sesarju.eu/sesar-solutions/wake-turbulence-separations-arrivals-based-static-aircraft-characteristics	The Static PairWise Separation for Departures (S-PWS-D) concept optimises wake separations between departures on the initial departure path by moving from schemes defined by a small number of wake categories (4 to 7 wake categories) to a scheme defined between aircraft type pairs for the 96 aircraft types frequently at European major airports, together with a scheme defined by a larger number of wake categories (20-CAT (6-CAT + 14-CAT)) for other aircraft type combinations. S-PWS for departures are applied using the OSD tool; the pairwise separations will be used as input into the OSD tool.		Not Planned		
PJ.02-01-07	Wake Vortex Decay Enhancing Devices	PJ.02-01-07 is a technological solution reducing the Wake Turbulence Risk via positioning of decay enhancing devices that accelerate the Wake Vortex Decay in Ground Proximity. Wake		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	https://www.sesarju.eu/sesar-solutions/wake-decay-enhancing-devices	Vortex Decay Enhancing Devices, so-called plate lines, can be installed at any major European airport in order to increase safety by reducing the risk of low-altitude wake encounters.				
PJ.02-03	Minimum-pair separations based on required surveillance performance (RSP) https://www.sesarju.eu/sesar-solutions/minimum-pair-separations-based-required-surveillance-performance-rsp	This solution has a technical aspect and an operational aspect. On the technical aspect, the solution has validated to V3 that the application of 2NM minimum radar separation (MRS) between two aircraft established on the final approach course to the same runway sufficiently mitigates the risk of collision between them, provided the required surveillance performance (RSP) are complied with. In addition to the MRS, runway occupancy time and wake separation constraints need to be considered when determining the minimum separation or spacing required to be applied between two aircraft (the largest of the constraints will need to be applied). The routine application of the 2NM minimum on final approach may require an increased consistency and accuracy in the separation delivery service on final approach. More specifically, the maximum acceptable rate of under-separated pairs on final approach may be lower if the minimum radar separation that is applied is 2NM than if it were to be 2.5 NM, because the consequences of an under-separation event are		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
		potentially more severe. For ATC facilities with a separation monitoring function (SMF) that alerts the supervisor, and also possibly the final approach controller, of a significant separation infringement on final approach, where there is currently a spacing minimum margin of 0.5 NM before the alert is triggered, consideration should be given to reducing this margin, e.g. to 0.2NM.				
PJ.02-08-01	Integrated Runway Sequence for full traffic Optimization on Single and Multiple Runway Airports https://www.sesarju.eu/sesar-solutions/integrated-runway-sequence-full-traffic-optimisation-single-and-multiple-runway	Trajectory based Integrated RWY Sequence function establishes an integrated arrival and departure sequence by providing accurate Target Take off Times (TTOTs) and Target Landing Times (TLDTs), including dynamic balancing of arrivals and departures while optimising the runway throughput. It supports TWR and APP ATCOs. The look ahead Time Horizon is the time at which flights become eligible for the integrated sequence. The Stable Sequence Time Horizon is the time horizon within which no automatic swapping of flights in the sequence will occur, but landing and departure time will still be updated. The value of these time horizons is determined by the local implementation and they are not necessarily the same for arrivals and departures. The Integrated Runway Sequence is planned before Arrival flights top of decent and linked with Airport CDM procedures for departures.		Not Planned		Being addressed by the IAA ANSP
PJ.02-08-02	Optimised use			Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	of runway configuration for multiple runway airports https://www.sesarju.eu/sesar-solutions/optimised-use-runway-configuration-multiple-runway-airports	Runway Manager (RMAN), is a support tool for the Tower Supervisor to determine the optimal runway configuration and distribution of demand according to capacity and local constraints. During the Planning Phase, the RMAN checks the intentional demand versus the available capacity and it is capable of forecasting imbalances, raising alarms and alerts based on the indicators provided. In the Execution Phase, the RMAN monitors departure, arrival and overall delay and punctuality, in addition to the capacity shortage proposing changes if necessary. RMAN continuously computes the optimal runway configuration and the associated Forecasted Landing (FLDT) and Take Off (FTOT) Times of arrival and departures flights that maximises the runway throughput. The Forecasted Times calculated by the RMAN are provided to the Integrated Runway Sequence using them to calculate the final Target Times. As a conclusion TLDT and TTOT calculated by the Integrated Sequence, follow the Runway DCB Plan allowing the feedback to the RMAN to monitor the status of the Runway and to detect possible imbalances.				
PJ.02-08-03	Reduced separation based on local runway occupancy time	The intention is to reduce the in-trail separation on final approach by taking into account the Runway Occupancy Time (ROT). A new separation minimum is computed based on the prediction of the ROT, the MRS and WTC	Dublin airport EIDW	Completed		Dublin Airport (daa)

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	characterisation https://www.sesarju.eu/sesar-solutions/reduced-separation-based-local-runway-occupancy-time-characterisation-rocat	separation. ROCAT defines separation sub-categories based on ROT, wake minima from RECAT and reduced radar separation based on ICAO approved minima. The solution consists on developing the runway occupancy minima through big data analytics to identify a ROT per aircraft type using machine learning techniques and historical data. A change in the separation minima used by ATCO for the aircraft on final approach is supported by decision support tool called LORD (Leading Optimised Runway Delivery). ROCAT can increase runway throughput where the traffic is predominantly medium aircraft, especially where RECAT is inefficient due to the lack of wide-body aircraft types.				
PJ.03a-04	Enhanced visual operations https://www.sesarju.eu/sesar-solutions/enhanced-visual-operations	"Enhanced Visual Operations" are enabled by enhanced vision systems (EVS), synthetic vision systems (SVS), which make more aircraft capable of LVC operations and enable more efficient approach, landing and taxi and operations in LVC. This is applicable to all platforms, even if the main airline platforms have auto land capabilities to facilitate approaches in LVC. The solution consists of 3 activities focusing on:• HMD fitted with taxi routing and traffic information for easing taxi operation in degraded weather conditions.• HMD equipment as an alternative to HUD equipment for EFVS operations using legacy EFVS sensors.•		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
		Use of active sensor with improved performance to overcome the observed limitation of EVS legacy sensors. The Vision based System is an on board alternative solution to heavy and expensive ground infrastructures for approach in LVC.				
PJ.03b-05	Traffic alerts for pilots for airport operations https://www.sesarju.eu/sesar-solutions/traffic-alerts-pilots-airport-operations	Although TCAS has been in use since long time ago, there is currently no aircraft system to prevent runway collisions. “Traffic alerts for pilots for airport operations” improves safety during airport operations. The flight crew is provided with alert when the on-board system detects a risk of collision with an aircraft on runway or taxiways. The improvement is further split into 2 implementations:• The mainline aircraft implementation consists of an on-board system, which detects risk of collision with other traffic during runway operations and provides the Flight Crew with aural alerts (mostly ‘warning’ alert level). • The business aircraft implementation consists of an on-board system, which detects potential and actual risk of collision with other traffic during runway and taxiway operations and provides the Flight Crew with visual and aural alerts (indication, caution and warning alert levels).		Not Planned		
PJ.15-02	E-AMAN Service https://www.sesarju.eu/ses	The E-AMAN Common Service provides functions necessary to operate Arrival Management with an extended horizon in an environment where multiple actors are		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	ar-solutions/e-aman-common-service	involved e.g. multiple Airports, AMANs, ACCs, UACs and other interested parties, e.g. NM (i.e. Cross Boarder Arrival Management).The capability provided by the E-AMAN Federation Common Service is the capability of harmonising the output of local E-AMAN technical capabilities on different geographic or organisational levels (ECAC, FAB, however any other scaling could be considered in principle). The output of the Common Service is delivered to the end-users (e.g. adjacent ACCs / UACs). By this, relocation of functions between stakeholders is performed.				
#108	Arrival Management (AMAN) and Point Merge https://www.sesarju.eu/sesar-solutions/arrival-management-aman-and-point-merge	Point Merge in high density environment and complex Extended TMA (E-TMA) sectors replaces radar vectoring with a more efficient and simplified traffic synchronisation mechanism that reduces communication workload and increases collective traffic predictability.		Not Planned		Being addressed by IAA ANSP

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
						
#10	Optimised route network using advanced RNP https://www.sesarju.eu/sesar-solutions/optimised-route-network-using-advanced-rnp	Based on Advanced-RNP navigation specification, design of optimised routes e.g. spaced parallel routes, Fixed Radius Transition (FRT) and Tactical Parallel Offset (TPO) further enhanced by onboard performance monitoring and alerting and the execution of more predictable aircraft behaviour		Not Planned		Being addressed by IAA ANSP and Aviation Regulator
#118	Basic EAP (Extended ATC Planning) function https://www.sesarju.eu/sesar-solutions/basic-extended-atc-planning-beap	The basic Extended ATC Planner aims at bridging the gap between Air Traffic Flow and Capacity Management (ATFCM) and Air Traffic Control (ATC) providing real-time and fine-tuning measures to solve ATFCM hotspots, and to perform early measures to alleviate complexity closest to ATC activities. The solution consists of an automated tool and associated procedures supporting the basic communication between the Local DCB position and the Controllers'Work Positions allowing the EAP and the ATC team in identifying, assessing		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
		and resolving local complexity situations. The basic EAP relies on a real time integrated process for managing the complexity of the traffic with capability to reduce traffic peaks through early implementation of fine-tuned solutions to solve workload imbalances at the local level, compatible with the short-term timeframe of execution phase of the flights.				
PJ.06-01	Optimised traffic management to enable free routing in high and very high complexity environments https://www.sesarju.eu/index.php/sesar-solutions/optimised-traffic-management-enable-free-routing-high-and-very-high-complexity	"Optimized traffic management to enable Free Routing in high and very high complexity environment" supports the implementation of FRA across ACC/FIR borders by contributing to the improvement of ATM at local level. More precisely, it focuses on the improvement of Separation Provision to enable Free Routing operations within high and very high complexity cross-border environments in Upper En-Route airspace. The Solution is not targeting unrestricted free routing operations, but aims at enabling safe and efficient operations in FRA with minimum structural limits to manage airspace and demand complexity. The Solution also relies on the Network Management (NM) function to cope with any Demand and Capacity imbalances created from changes in dominant traffic flows in FRA through the monitoring of the traffic complexity levels together with the level of the traffic demand.		Not Planned		
PJ.10-01a1	High Productivity Controller	"High Productivity Controller Team Organisation in En-Route (including eTMA)"	Shannon FIR/UIR	Ongoing		Already partially implemented in Shannon FIR/UIR

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	Team Organisation in En-Route (including eTMA) https://www.sesarju.eu/sesar-solutions/high-productivity-controller-team-organisation-en-route-including-etma	consists of developing new concepts of operation and identifying the nature of system support required for operating in team structures that are not the usual Planner/Executive (1PC – 1EC) two-person ATC sector team. In particular, the Multi-Sector Planner (MSP) where a Planner Controller has responsibility for the airspace under the executive control of two independent Executive Controllers (1PC – 2ECs). The SESAR Solution "High Productivity Controller Team Organisation in En-Route (including eTMA)" focused on the typical one Planner Controller to 2 Executive Controllers MSP organization and team organisation in eTMA (lower En-Route sectors) as well as in En-Route.				(Enroute) as recorded in the 2020 Report

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
TBO Trajectory -based operations						
#06	Controlled time of arrival (CTA) in medium-density/medium-complexity environments https://www.sesarju.eu/sesar-solutions/controlled-time-arrival-cta-medium-densitymedium-complexity-environment	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.		Not Planned		
#08	Arrival management into multiple airports	The system provides support to coordination of traffic flows into multiple airports to enable a smooth delivery to the runways. The 'Center Manager' (CMAN) which accompanies the		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	https://www.sesarju.eu/sesar-solutions/arrival-management-multiple-airports	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.				
#100	ACAS Ground Monitoring and Presentation System https://www.sesarju.eu/index.php/sesar-solutions/acas-ground-monitoring-and-presentation-system	The ACAS provides resolution advisories (RAs) to pilots in order to avoid collisions. Controllers rely on pilots to report RAs by radio as they occur in accordance with ICAO regulations. However these reports can come late, incomplete or are, absent in some instances. This solution consists of a set of monitoring stations and a server system, which enable the continuous monitoring and analysis of ACAS RAs and coordination messages between airborne units from the ground.		Not Planned		
#101	Extended hybrid surveillance https://www.sesarju.eu/ind	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		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	ex.php/sesar-solutions/extended-hybrid-surveillance	to significantly reduce the usage of the 1090 MHz frequency.				
PJ.07-01-01	Reactive flight delay criticality indicator (FDCI) https://www.sesarju.eu/sesar-solutions/reactive-flight-delay-criticality-indicator-fdci	The Flight Delay Criticality Indicator (FDCI) information, for a flight having an ATFCM delay, is provided by the Airspace User to both NM and FMPs to indicate that the concerned flight is critical for his business and that he requested that the flight progresses and arrives as much as possible on time. • The resolution of an FDCI request is NMOC driven upon the reception of the FDCI improvement request and when more than one regulation is affecting the flight, alternatively in the case there is only one regulation affecting the flight the local FMP can requests the resolution to NMOC. • The resolution is mostly a regulation exclusion or delay reduction (force slot) by NMOC. In this, the focus is put on reactive FDCI that means the FDC flight has an ATFCM delay and slot issued.		Not Planned		
PJ.10-02a1	Improved performance in the provision of separation without use of ADS-C/p data https://www.	Integrated tactical and medium conflict detection & resolution (CD&R) services and conformance monitoring tools for En-Route and TMA aims at improving the separation (tactical layer) in the En-Route and TMA (but not APP) operational environments through improved ground trajectory prediction. This is achieved using existing information on lateral and vertical clearances that are known by the		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	sesarju.eu/sesar-solutions/improved-performance-provision-separation-without-use-ads-cepp-data	ground system and airborne information such as Mode S data. This solution is built on SESAR 1 Sol. #27. New features and enhancement brought by PJ10.02a1 are : • Extension of TCT to all environments : TMA & ER • Improvement of the MTCD to handle level segments • Enhanced resolution features for MTCD & TCT including what-if and what-else probes. • Conformance monitoring tool, based on improved ground trajectory prediction and enriched with additional alerts, such as rate monitoring.				
PJ.18-02c	eFPL supporting SBT transition to RBT https://www.sesarju.eu/index.php/sesar-solutions/efpl-supporting-sbt-transition-rbt	This solution addresses the technical enablers supporting the distribution of eFPL information to ATC systems in order to improve the ATC prediction with additional information to better assess the expected sector load and to reduce the number of false conflict detections, as well as to provide the ATCO with better knowledge of airline intentions thanks to a more accurate profile and additional elements such as ToC or ToD. The main actors are the Network Manager that provides the eFPL distribution service, and the ATS service providers that integrate and use the information in the ATC systems.		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
VS Virtualisation of service provision						
PJ.05-02	Multiple remote tower module https://www.sesarju.eu/sesar-solutions/multiple-remote-tower-module	The main driver for MRTM (multiple remote tower module) is increased cost efficiency. The objective is to implement a MRTM that allows the ATCO to maintain situational awareness for 2 or 3 airports simultaneously (including traffic mix of IFR and VFR, as well as aerodrome vehicles). MRTM requires advanced features of the visual reproduction as well as additional voice services. It is assumed that an ATCO can hold endorsements for up to 3 (single) different airports. There is a fixed allocation of airports to a set of MRTMs. However, in case of high workload, due to e.g. emergency, high traffic volumes or degraded mode, the ATCO can split one airport into a spare MRTM if required. The prerequisite for multiple remote tower operations is the single remote tower operations.	Cork airport EICK	Completed		Cork airport
PJ.05-02	Multiple remote tower module https://www.sesarju.eu/sesar-solutions/mul	The main driver for MRTM (multiple remote tower module) is increased cost efficiency. The objective is to implement a MRTM that allows the ATCO to maintain situational awareness for 2 or 3 airports simultaneously (including traffic mix of IFR and VFR, as well as aerodrome	Shannon airport EINN	Not Applicable		Shannon Airport/ Cork Airport already applied as a Local Objective for LSSIP.

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
	tiple-remote-tower-module	vehicles). MRTM requires advanced features of the visual reproduction as well as additional voice services. It is assumed that an ATCO can hold endorsements for up to 3 (single) different airports. There is a fixed allocation of airports to a set of MRTMs. However, in case of high workload, due to e.g. emergency, high traffic volumes or degraded mode, the ATCO can split one airport into a spare MRTM if required. The prerequisite for multiple remote tower operations is the single remote tower operations.				
PJ.16-03	Enabling rationalisation of infrastructure using virtual centre based technology https://www.sesarju.eu/index.php/sesar-solutions/enabling-rationalisation-infrastructure-using-virtual-centre-based-technology	This solution enables the separation of the data centre where the data is produced (the ATM Data Service Provider - ADSP) from the ATCOs location (the Virtual Centre ATSU). Virtual Centre is a grouping of Air Traffic Service Units (ATSU), possibly geographically separated, sharing ATC operations amongst themselves using data services provided by one or more ADSPs through interfaces defined in Service Level Agreements, in a safe and secure manner. This decoupling delivers the flexibility and performance aspects of the services to ensure the ability of the virtual centre solution to at least support or to improve the operational performance.		Not Planned		

SESAR Solution Code	SESAR Solution Title(hyper link)	Solution Description	Location	Status	(Planned) Date of implementation	Comment
						
PJ.02-05	Independent rotorcraft operations at the airports https://www.sesarju.eu/sesar-solutions/independent-rotorcraft-operations-airports	This solution refers to simultaneous and non-interfering operations through SBAS (and GBAS as an optional enabler) approach/departure procedures independent from the main runway and dedicated only to rotorcraft operations. The aim is to move rotorcraft operations from the active runway to facilitate fixed wing aircraft. Specific PBN RNP0.3 IFR procedures to/from an existing VFR FATO shall be deployed to reach a point-in-space (PinS) to access FATO. The solution targets, in particular, relatively large and very large airports and high complexity airspaces.		Not Planned		Being addressed by IAA Aviation Regulator in the context of introducing PinS approaches at various locations including EISG (Sligo Airport) which supports SAR based Helicopter
PJ.01-06	Enhanced rotorcraft operations in the TMA https://www.sesarju.eu/sesar-solutions/enhanced-rotorcraft-operations-tma	"Enhanced Rotorcraft operations in the TMA" integrate pilot support of both EVS (enhanced vision systems) including visual segments and automated flight path following by autopilot system. Advanced Point-In-Space RNP approaches and departures to/from FATO are based on SBAS navigation. The corresponding rotorcraft specific contingency procedures in case of loss of communication are defined. The pilot is supported during these operations by dedicated symbology presented on a Head Mounted Display system.		Not Planned		

E. Surveillance (SUR)

European ATM Surveillance data are captured to enable Network performance improvements and ensure global interoperability.
This Annex includes Surveillance implementation information related to projects, sensors and data integration.
The objective for the inclusion of this information in LSSIP is to consolidate the data collection process and increase efficiency by avoiding parallel surveys.
The corresponding tables have been prefilled with information already available from recent surveys within the surveillance area.

For practical reasons to harmonise the reporting, since the LSSIP 2021 cycle the questionnaire is included in the LSSIP Annex.

Surveillance Projects

This section includes Surveillance system projects covering the full chain from Sensor to Surveillance data integration into SDPS and CWP.

Activity Description Area / Airspace	System Description (for new system, replacement/upgrade or decommissioning)	Expected contribution to the Key Performance Areas	Schedule
Area/Name: ADS-B **Activity type:** **Relationship with other projects:** **Objective:** Coverage **Airspace**: ENR - NOTA / SOTA TMA – Dublin **Service**: Augmenting Surveillance coverage	**Type:** Space Based ADS-B. The Space based ADS-B ASTERIX Cat 21 data has been delivered to an existing IAA Surveillance validation platform in Shannon ATCC. The Space based ADS-B data is integrated into ARTAS V8B4 with all our secondary surveillance Radar data, and terrestrial ADS-B sensors, in order to carry out quantitative ESASSP SPI/IR analysis of the performance of IAA ARTAS augmented with Space based ADS-B versus ARTAS with Radar only, and versus ARTAS with terrestrial ADS-B and Radars, for the three defined Airspace volumes. **Number of sites**: 2 **Provider**: ARINC/SITA **Coverage:** FIR	**Capacity:** Yes **Operational-Efficiency:** **Safety:** Improved surveillance coverage, especially low level coverage. Improved resilience to localised surveillance infrastructure failures due to RF interference, power or data-communications failures as a result of severe weather. **Security:** Yes **Environment:** No 1030Mhz transmission. No mountain top infrastructure required. **RF/Spectrum:** Yes **Cost-Efficiency:** Following the validation program and the European ADS-B equipage mandate, rationalisation of number of IAA radars to be replaced at EOL will be considered. No IAA maintenance of the Space based ADS-B system is required	**Sensor installation date:** Schedule: 2016-2021 **Operational date:** **ADS-B operational integration date (ATCO CWP) where applicable:** ADS-B Evaluation in 2020 delayed due to Covid19 related impacts on Air Traffic and IAA staff. Estimate operational use of ADS-B in Ireland by Q2 2023. **Estimated End of Life: 2035**

Activity Description Area / Airspace	System Description (for new system, replacement/upgrade or decommissioning)	Expected contribution to the Key Performance Areas	Schedule
Area/Name: ADS-B Alerting Service – Aireon ALERT **Activity type:** **Relationship with other projects:** **Objective:** **Airspace**: Global **Service**: Global Alerting Service	**Type:** Global Alerting Service: Through a 24/7 communications facility operated by the Irish Aviation Authority at its North Atlantic Communications Centre in Ballygirreen, Ireland, the Aireon ALERT service has made it possible to precisely query the location and flight track of any ADS-B equipped aircraft flying beyond the reach of existing surveillance. **Number of sites**: N/A-Sattellite **Provider**: AIREON **Coverage:** Global	**Capacity:** NIL **Operational-Efficiency:** **Safety:** The Aireon ALERT service tracks any ADS-B equipped aircraft that is in an apparent alert or distress phase providing airlines, Air Navigation Service Providers (ANSP) and search-and-rescue authorities with precise GPS-based location updates. **Security:** N/A **Environment:** No 1030Mhz transmission. **RF/Spectrum:** N/A **Cost-Efficiency:** AIREON ALERT service is free for all organizations that register.	**Sensor installation date:** **Operational date:** July 2019 **ADS-B operational integration date (ATCO CWP) where applicable:** **Estimated End of Life: 2035**

Activity Description Area / Airspace	System Description (for new system, replacement/upgrade or decommissioning)	Expected contribution to the Key Performance Areas	Schedule
Area/Name: Mode-S Radar - ADD **Activity type:** **Relationship with other projects:** **Objective:** ADD **Airspace**: ENR - IAA FIR / NOTA / SOTA TMA - Dublin/ Cork / Shannon **Service**: Radar	**Type:** Mode S **Number of sites**: Dublin 3, Woodcock Hill, Mt Gabriel Head 1 and Forrest Little. **Provider**: Thales (RSM970S).The Following DAPs are used operationally by IAA ATC in Shannon and Dublin; 1. Selected Flight Level 2. Indicated Air Speed 3. Mach Number 4. Magnetic Heading 5. Barometric Vertical Rate. The IAA'S COOPANS system automatically provides the controllers with a warning if the airborne selected Altitude does not match the Cleared Flight Level (CFL), by displaying the CFL in the radar label in yellow. **Coverage:** IAA FIR and TMAs	**Capacity:** Yes **Operational-Efficiency:** **Safety:** The CFL comparison to selected Altitude functionality greatly reduces the risk of loss of separation caused by wrongly spoken or misheard Flight Levels on the part of either the pilot or the controller. **Security:** NIL **Environment:** NIL **RF/Spectrum:** NIL **Cost-Efficiency:** NIL	**Sensor installation date:** **Operational date:** IAA Radar ADD (DAPS) Operational since March 2015. **ADS-B operational integration date (ATCO CWP) where applicable:** **Estimated End of Life: 2025-2028**

Activity Description Area / Airspace	System Description (for new system, replacement/upgrade or decommissioning)	Expected contribution to the Key Performance Areas	Schedule
Area/Name: ADS-B **Activity type:** **Relationship with other projects:** **Objective:** Coverage **Airspace**: ENR - IAA FIR APP - Kerry / Knock **Service**: Augmenting Surveillance coverage	**Type:** ADS-B **Number of sites**: 2 **Provider**: The IAA installed two ADS-B sensors at Regional Airports in Kerry and Knock. The ADS-B ASTERIX Cat 21 data is currently delivered to an IAA Surveillance Validation Platform in Shannon ATCC. ADS-B is under evaluation to augment our secondary surveillance radar coverage and to provide cover in areas of poor radar coverage such as the regional Airports in Kerry and IWAK. **Coverage:** Shannon FIR-EIKN and EIKY	**Capacity:** Yes **Operational-Efficiency:** **Safety:** Improved surveillance coverage. **Security:** Yes **Environment:** No 1030Mhz transmission. **RF/Spectrum:** **Cost-Efficiency:** Surveillance Coverage of Regional Airports can be delivered without the cost of new radar installations. Following the validation program and the European ADS-B equipage mandate, rationalisation of number of IAA radars to be replaced at EOL will be considered.	**Sensor installation date:** Installation Completed Q4 2015 – Evaluation Ongoing **Operational date:** **ADS-B operational integration date (ATCO CWP) where applicable:** ADS-B Evaluation in 2020 delayed due to Covid19 related impacts on Air Traffic and IAA staff. Estimate operational use of ADS-B in Ireland by Q2 2023. **Estimated End of Life: 2030**

Activity Description Area / Airspace	System Description (for new system, replacement/upgrade or decommissioning)	Expected contribution to the Key Performance Areas	Schedule
Area/Name: ADS-B **Activity type:** **Relationship with other projects:** **Objective:** Coverage **Airspace**: ENR - NOTA / SOTA TMA – Dublin **Service**: Augmenting Surveillance coverage	**Type:** ADS-B **Number of sites**: 3 **Provider**: ED-129B compliant ADS-B sensors at IAA sites Glencolmbkille, Mt Gabriel and Dublin to deliver coverage of the NOTA and SOTA delegated Oceanic Airspace volumes, and the Dublin TMA. The ADS-B ASTERIX Cat 21 data is delivered to an existing IAA Surveillance validation platform in Shannon ATCC. The ADS-B data has been integrated into ARTAS V8B4 with all our secondary surveillance radar data in order to carry out quantitative ESASSP SPI/IR analysis of the performance of IAA ARTAS augmented with ADS-B versus ARTAS with Radar only, for the three defined Airspace volumes. **Coverage:** ENR - NOTA / SOTA TMA – Dublin	**Capacity:** Yes **Operational-Efficiency:** **Safety:** Improved surveillance coverage. **Security:** Yes **Environment:** No 1030Mhz transmission. Minimal mountain top infrastructure required. **RF/Spectrum:** **Cost-Efficiency:** Following the validation program and the European ADS-B equipage mandate, rationalisation of number of IAA radars to be replaced at EOL will be considered. Minimal IAA maintenance of ADS-B systems is required.	**Sensor installation date:** Schedule: 2018-2021 **Operational date:** **ADS-B operational integration date (ATCO CWP) where applicable:** ADS-B Evaluation in 2020 delayed due to Covid19 related impacts on Air Traffic and IAA staff. Estimate operational use of ADS-B in Ireland by Q2 2023. **Estimated End of Life: 2030**

Surveillance sensors (just numbers, no technical/ops details)

This section summarises the number of Surveillance sensors per state. This covers all current and planned sensors intended for operational use.

Note: Please only count each sensor once even if it is part of combined systems. A combined PSR and Mode S SSR is only counted once in the row for CMB PSR Mode S (and consequently not counted in the PSR nor in the Mode S rows). Similarly, for a multilateration system, providing coverage both on the airport surface and in the CTR or TMA the individual sensor can be allocated to one or the other but each sensor must only be counted once, either in one of the MLAT/WAM rows or in one of the Airport MLAT/LAM rows.

Sensor Type	2021	2022	2023	2024	2025	2026
WAM Systems/Clustors						
WAM Sensors (Rx, Tx, Rx/Tx)	0	0	0	0	0	
Mode S	4	6	6	6	6	
Airport MLAT Systems/Clustors						
Airport MLAT Sensors (Rx, Tx, Rx/Tx)	28	28	28	28	28	
ADS-B equipped Vehicles	5 IAA, 94 daa	5 IAA, 94 daa	5 IAA, 94 daa	5 IAA, 94 daa	5 IAA, 94 daa	
Mode A/C	2	0	0	0	0	
Space-based ADS-B	2	2	2	2	2	
Surface Movement Radar (SMR)	3	3	3	3	3	
ADS-B receivers (not part of MLAT/WAM)	5	5	5	5	5	
CMB PSR Mode A/C	3	2	1	1	1	
CMB PSR Mode S	1	2	3	3	3	
PSR stand alone	0	0	0	0	0	

Surveillance Data Use

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

ADD/DAP data usage

ATCO, System, Tools (which tool)

ADD/DAP data item	Usage of DAP/ADD			
	Indicate if and how the data is used by ATCOs: - not used - Displayed for information - Part of operational procedure - Other (please indicate) **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Indicate if and how the data is used by TOOLS:** - Please indicate tools and status per tool (e.g. operational, evaluation, other) **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Indicate if and how the data is used by the Tracker:** - Operational usage - Evaluation - Other **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Other**
Selected Altitude	ATCO 2020 Part of Operational Procedures	Operational	Operational Usage	
Barometric pressure setting	Not Used			
Roll angle	Not Used			
True track angle	ATCO 2020 Part of Operational Procedure	Operational	Operational Usage	
Ground speed	ATCO 2020 Part of Operational Procedures	Operational	Operational Usage	
Track angle rate	Not Used			
Magnetic heading	ATCO 2020 Part of Operational Procedures	Operational	Operational Usage	

ADD/DAP data item	Usage of DAP/ADD			
	Indicate if and how the data is used by ATCOs: - not used - Displayed for information - Part of operational procedure - Other (please indicate) **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Indicate if and how the data is used by TOOLS:** - Please indicate tools and status per tool (e.g. operational, evaluation, other) **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Indicate if and how the data is used by the Tracker:** - Operational usage - Evaluation - Other **Indicate Initial operational date or planned ops date** **Indicate source(s) (Mode S, ADS-B, WAM)**	**Other**
Indicated airspeed	ATCO 2020 Part of Operational Procedures	Operational	Operational Usage	
Mach No	ATCO 2020 Part of Operational Procedures	Operational	Operational Usage	
Vertical rate (Baro, Inertial)	ATCO 2020 Part of Operational Procedures	Operational	Operational Usage	
True Airspeed	ATCO 2020 Part of Operational Procedures	Operational	Operational Usage	
Other data items	ATCO 2020 Part of Operational Procedures	Operational	Operational Usage	

ADS-B integration

ADS-B use case and integration date	Operational or planned ops date	Sites
ACC ATC integration ENR	2023	
ACC ATC integration TMA	2023	
ATC integration TWR CTR/TMA	TBC	
Flight Information Service	TBC	
ATCO Traffic Awareness	TBC	
Traffic planning e.g. Arrival Manager	Not Planned	
Conflict Alerting, e.g. STCA	Not Planned	
Airport surveillance e.g. Traffic awareness, Target identification support	Not Planned	
Other:	Alerting system: Operational	

F. Glossary of abbreviations

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

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

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

Term	Description
AF	ATM Functionality
AIS/AIM/ARO	Aeronautical Information System/Aeronautical Information Management/ Air Traffic Services Reporting Office
APW	Area Proximity Warning
ARTAS	Advanced Radar Tracker and Server
CNS	Communication, Navigation and Surveillance
CTA	Control Area
DMAN	Departure Management
DoT	Irish Department of Transport
ESARR	EUROCONTROL Safety Regulatory Requirements
FANS	Future Air Navigation System
FMG	Frequency management group
FMP	Flow Management Position
FT	Fast Track
IAA	Irish Aviation Authority
MET	MET Eireann (Ireland Meteorological Service)
MSAW	Minimum Safe Altitude Warning
MSSR	Monopulse Secondary Surveillance Radar
MTCD	Medium Term Conflict Detection
NPA	Non precision approach
NSA	National Supervisory Authority
PSR	Primary Surveillance Radar
SARPs	Standard Agreements and Recommended Practices
SRD	Safety Regulation Division of the Irish Aviation Authority