EUROCONTROL

LSSIP 2020 - IRELAND
LOCAL SINGLE SKY IMPLEMENTATION

Level 1 - Implementation Overview

FOREWORD

We as the EUROCONTROL Network Manager have a major task to support aviation and all our partners; this is particularly true during these complex times of COVID 19 pandemic. We work with all the operational stakeholders to manage a seamless European airspace, linking together the elements of the European air traffic management 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. In particular, in these difficult times, we are paving the way for a rapid and agile recovery committed to bring back better aviation.

For more than 27 years, 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, also known as the European Single Sky ImPlementation (ESSIP) process.

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

In addition, EUROCONTROL is promoting practices to avoid unnecessary duplication of reporting. We are cooperating with the SESAR Deployment Manager, the SESAR Joint Undertaking, the European Defence Agency and NATO to ensure the optimisation of the reporting mechanisms bringing all the processes into a single value chain.

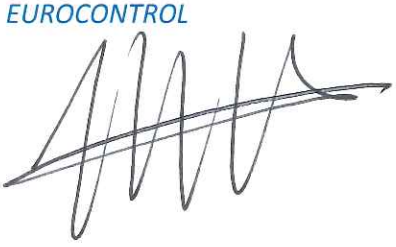
The reliability and quality of the data provided by the national stakeholders allowed, for the sixth consecutive year, the information in the LSSIP documents to constitute the sole source of information for the development of ICAO's Aviation System Block Upgrades (ASBUs) Implementation Monitoring Report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

We believe now is the time to build back better aviation. The exceptional situation we are living in shows the importance of a robust planning and monitoring process for the European ATM implementation in our evolving environment. In preparation of the next cycle of LSSIP documents ("LSSIP2021"), we therefore are working jointly and in close collaboration with the operational stakeholders towards a single Network Manager Planning Process integrating the Network Operations Plan (NOP), the LSSIP and the Operational Excellence Programme (OEP). We are working together with the SESAR Deployment Manager to streamline the reporting processes of LSSIP and PCP/CP1 in order to ensure a single reporting mechanism for all stakeholders.

I would like to thank, once again, all our stakeholders for their engagement and substantial effort spent in contributing 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 ATM community!

Enjoy the reading!

Iacopo PRISSINOTTI
Director NM – Network Manager
EUROCONTROL



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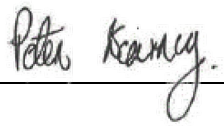
Master Plan Level 3 – Report Year 2020	https://www.eurocontrol.int/publication/european-atm-master-plan-implementation-report-level-3
European ATM Portal	https://www.atmmasterplan.eu/
STATFOR Forecasts	https://www.eurocontrol.int/statfor
National AIP	http://iaip.iaa.ie/iaip/IAIP_Frame_CD.htm

APPROVAL SHEET

The following authorities have approved all parts of the LSSIP Year 2020 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 2020.

Stakeholder / Organisation	Name	Position	Signature and date
Irish Aviation Authority- ANSP	Peter Kearney	Chief Executive	
Irish Aviation Authority- Safety Regulatory Division (NSA)	Diarmuid Ó Conghaile	Aviation Regulator/ CEO Designate	
Irish Aviation Authority- ANSP	Billy Hann	Director ATM Operations and Strategy	

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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 Division entrusted for provision of air navigation services
- The Dublin Airport Authority, for Dublin and Cork Airports (EIDW and EICK)
- The Shannon Airport Authority,
- The Department of Defence.
- Irish Air Corps
- Regional Non-State Airports

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

Traffic and Capacity

For Dublin and Shannon ACCs

The UK-Ireland FAB

Number of national projects: 5
Number of FAB projects: 1
Number of multinational projects: 5

Summary of 2020 developments:

Overall Progress on completion of Implementation Objectives for Ireland is positive.

The Ireland 2020 Report records three Implementation Objectives as "Late": AOP05(EIDW) (Airport Collaborative Decision Making (A-CDM); AOP11(EIDW) (Initial Airport Operations Plan); ITY-ACID (Aircraft Identification) and ITY-ADQ (Ensure Quality of Aeronautical Data and Aeronautical Information). These objectives were previously reported as completed and these updates reflects further developments required during 2020 and into 2021.

In reflecting the PBN Implementation Plan for Ireland approved in 2020 at NETOPS 28, local Airspace projects have commenced to re-organise airspace to support PBN and deliver environmental as well as operational benefits.

Significantly in 2020, the functionally separate provision of Air Traffic Services (ATS) and Safety Regulation within the IAA, are planned to have full Organizational separation in 2021, creating two distinct entities with separate Chief Executives for both "new" organisations. The ANSP will have a new name 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

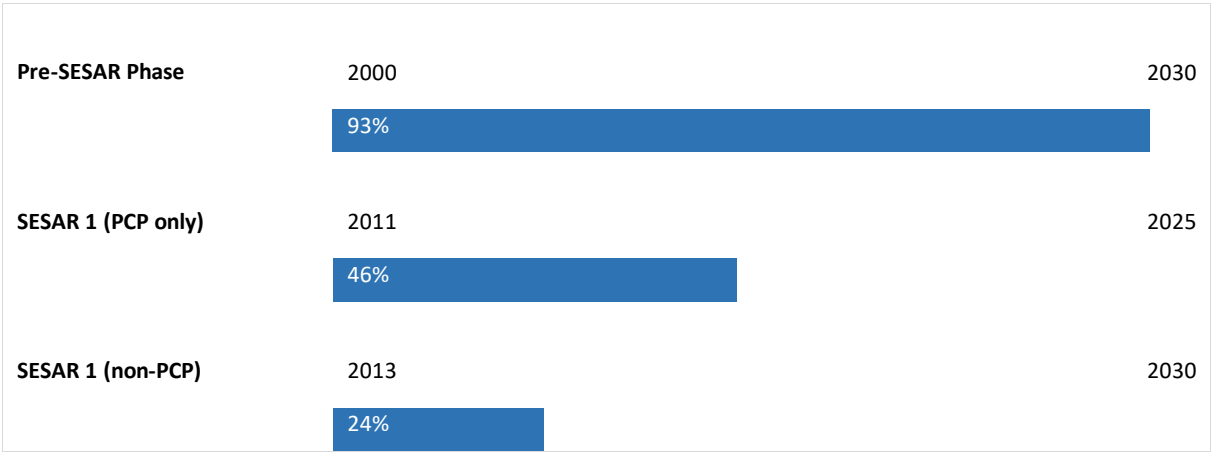
The figure below shows the progress made so far in the implementation of the SESAR baseline (Pre-SESAR and SESAR1 non-PCP) and the PCP elements.

It shows the average implementation progress for all objectives grouped by SESAR Phases, excluding those for which the State is outside the applicability area as defined on a yearly basis in the European ATM Master Plan (Level 3) 2020, i.e. disregarding the declared "NOT APPLICABLE" LSSIP progress status.

The SESAR 1 (non-PCP) progress in the graphics below for Ireland is based on the following objectives (2020 Update):

AOP14 (Remote Tower Services) – Ongoing; AOP15 (Enhanced traffic situational awareness and airport safety nets for the vehicle drivers) - Not Yet Planned; AOP16 (Guidance assistance through airfield ground lighting)– Not Yet Planned; AOP17 (Provision/integration of departure planning) – Not Yet Planned; AOP18 (Runway Status Lights (RWSL) – Not Yet Planned.

- ATC02.9(Short Term Conflict Alert (STCA) for TMAs) - Completed
- ATC18 (Multi-Sector Planning En-route - 1P2T) – Ongoing; ATC19 (Enhanced AMAN-DMAN integration) – Ongoing; ATC20 (Enhanced STCA with down-linked parameters via Mode S EHS)– Not Yet Planned.
- NAV12 (ATS IFR Routes for Rotorcraft Operations)– Ongoing with 10% of objective completed for 2020.
- COM11.2(Voice over Internet Protocol (VoIP) in Airport/Terminal) – Ongoing 83% completion for 2020.

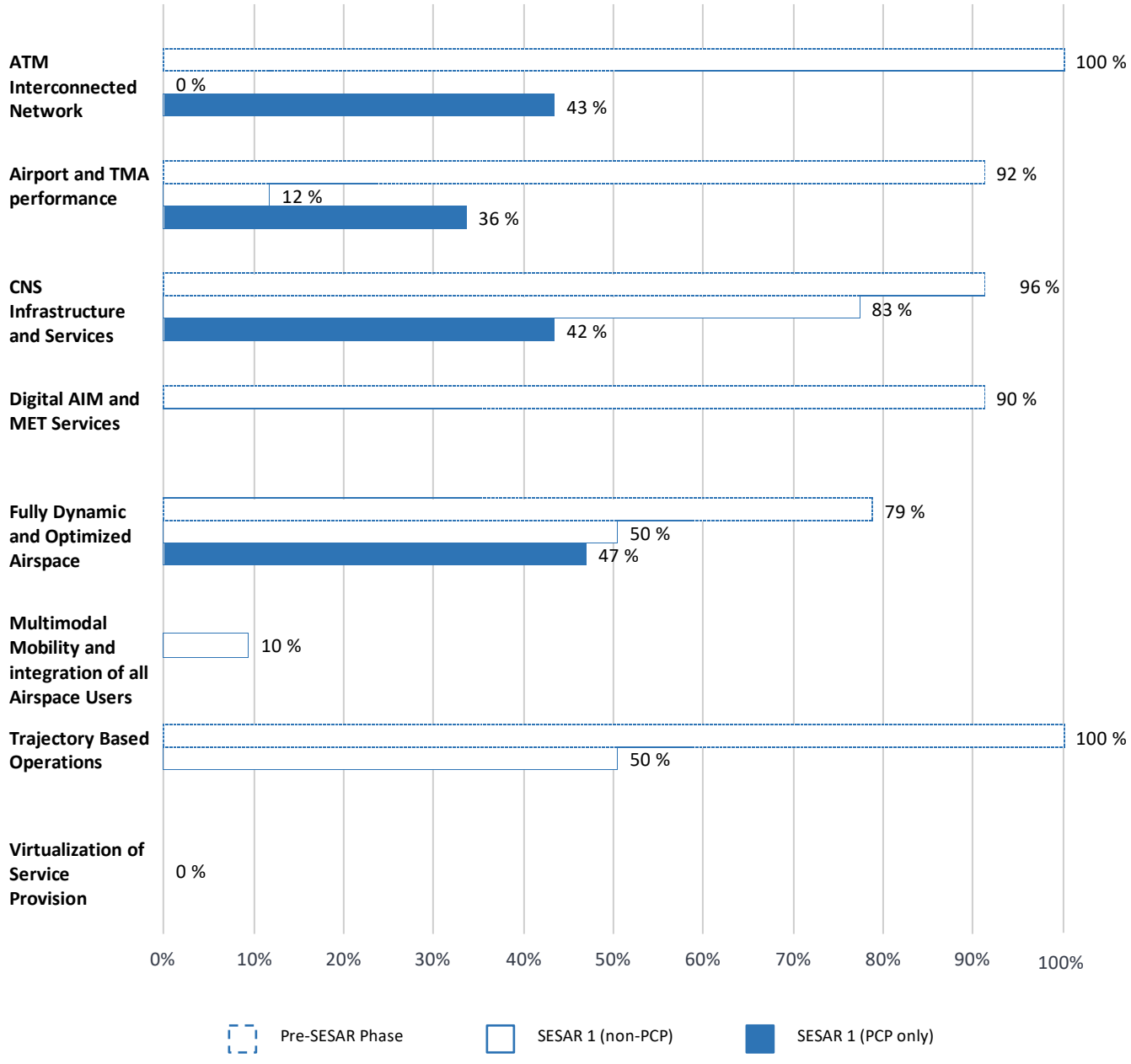


Progress per SESAR Essential Operational Changes and Phase

The figure below shows the progress made so far, per SESAR Essential Operational Changes, in the implementation of the SESAR baseline and the PCP elements. The percentages are calculated as an average, per Essential Operational Change (EOC), of the same objectives as in the previous paragraph.

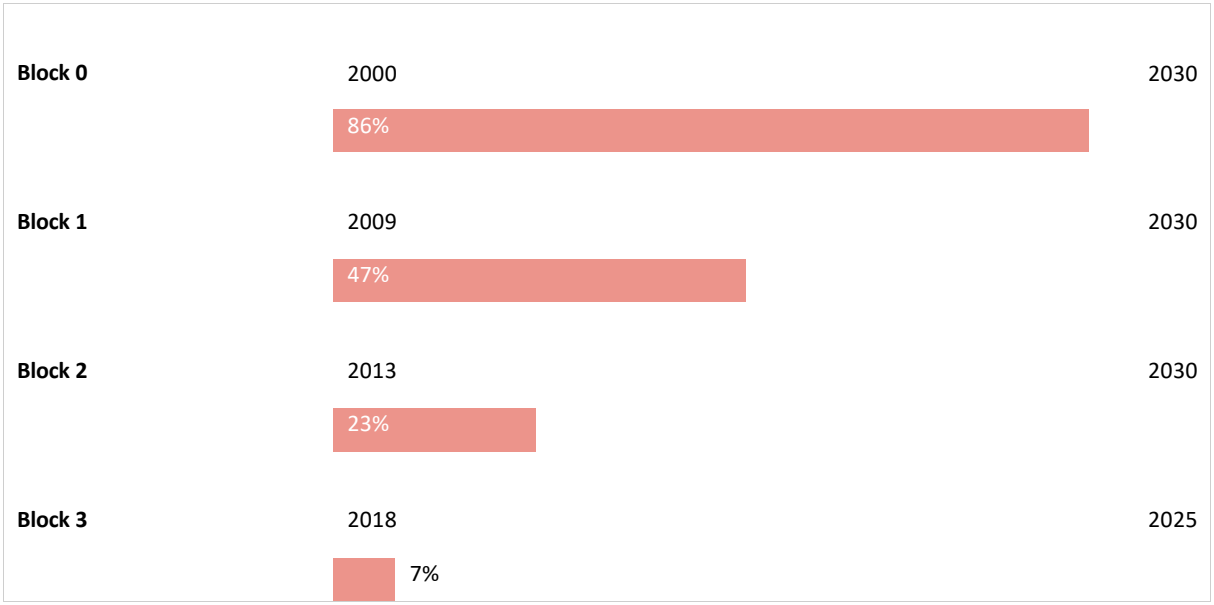
All projects related to items detailed in the table below are under active progress.

Note: CNS Infrastructure and Services and Fully Dynamic and Optimised Airspace EOC items are well progressed as outlined below.



ICAO ASBUs Progress Implementation

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



ATM Deployment Outlook

State Objectives

✓ **Deployed in 2019 - 2020**	**- 8,33 kHz Air-Ground Voice Channel Spacing below FL195** ITY-AGVCS2 - 100 % progress **- RNAV 1 in TMA Operations** NAV03.1 - 100 % progress **- Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling** AOM13.1 - 100 % progress **- New Pan-European Network Service (NewPENS)** COM12 - 100 % progress

By 2021	By 2022	By 2023	By 2024+
- Traffic Complexity Assessment FCM06 - 50 % progress **- RNP 1 in TMA Operations** NAV03.2 - 20 % progress **- RNP Approach Procedures to instrument RWY** NAV10 - 82 % progress **- Voice over Internet Protocol (VoIP) in En-Route** COM11.1 - 42 % progress **- Voice over Internet Protocol (VoIP) in Airport/Terminal** COM11.2 - 83 % progress **- Multi-Sector Planning En-route - 1P2T** ATC18 - 50 % progress **- Short Term ATFCM Measures (STAM) - Phase 2** FCM04.2 - 10 % progress **- Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer** ATC17 - 38 % progress **- Ensure Quality of Aeronautical Data and Aeronautical Information**		**- Enhanced AMAN-DMAN integration** ATC19 - 50 % progress	**- ATS IFR Routes for Rotorcraft Operations** NAV12 - 10 % progress **- Information Exchanges using the SWIM Yellow TI Profile** INF08.1 - 07 % progress

ITY-ADQ - 81 % progress **- ASM Management of Real-Time Airspace Data** AOM19.2 - 07 % progress **- Interactive Rolling NOP** FCM05 - 56 % progress **- Aircraft Identification** ITY-ACID - 92 % progress **- ASM Support Tools to Support Advanced FUA (AFUA)** AOM19.1 - 39 % progress **- Full Rolling ASM/ATFCM Process and ASM Information Sharing** AOM19.3 - 25 % progress **- Management of Pre-defined Airspace Configurations** AOM19.4 - 58 % progress			

Airport Objectives - Dublin Airport

✓ **Deployed in 2019 - 2020**

- Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)
AOP12 - 100 % progress

By 2021	By 2022	By 2023	By 2024+
- Airport Collaborative Decision Making (A-CDM) AOP05 - 98 % progress **- Time-Based Separation** AOP10 - 24 % progress	**- Continuous Descent Operations (CDO)** ENV01 - 62 % progress **- Initial Airport Operations Plan** AOP11 - 36 % progress		

Airport Objectives - SHANNON

✓ **Deployed in 2019 - 2020** None

By 2021	By 2022	By 2023	By 2024+
	- Continuous Climb Operations (CCO) ENV03 - 75 % progress	**- Remote Tower Services** AOP14 - 00 % progress	

Airport Objectives - CORK

✓ **Deployed in 2019 - 2020** None

By 2021	By 2022	By 2023	By 2024+
- Continuous Climb Operations (CCO) ENV03 - 75 % progress		**- Remote Tower Services** AOP14 - 00 % progress	

Overall situation of Implementation Objectives

Main Objectives	Topic	Progress at the end of 2020	Status	2020		2021		2022		2023		2024		2025		>2025
AOM13.1	Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling	100%	Completed													
AOM19.1	ASM Support Tools to Support Advanced FUA (AFUA)	39%	Ongoing					*								
AOM19.2	ASM Management of Real-Time Airspace Data	7%	Ongoing					*								
AOM19.3	Full Rolling ASM/ATFCM Process and ASM Information Sharing	25%	Ongoing					*								
AOM19.4	Management of Pre-defined Airspace Configurations	75%	Ongoing					*								
AOM21.1	Direct Routing	100%	Completed													
AOM21.2	Free Route Airspace	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)	98%	Late			*										
AOP10(EIDW)	Time-Based Separation	24%	Ongoing									*				
AOP11(EIDW)	Initial Airport Operations Plan	36%	Late			*										
AOP12(EIDW)	Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)	100%	Completed			*										
AOP13(EIDW)	Automated Assistance to Controller for Surface Movement Planning and Routing	0%	Not yet 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	0%	Not yet													2030

Main Objectives	Topic	Progress at the end of 2020	Status	2020		2021		2022		2023		2024		2025		>2025
	information to NMOC		planned													
AOP18(EIDW)	Runway Status Lights (RWSL)	0%	Not yet planned													2030
ATC02.2	Implement ground based safety nets - Short Term Conflict Alert (STCA) - level 2 for en-route operations	100%	Completed													
ATC02.8	Ground-Based Safety Nets	100%	Completed					*								
ATC02.9	Short Term Conflict Alert (STCA) for TMAs	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	Arrival Management Extended to En-route Airspace	0%	Not yet planned									*				
ATC16	Implement ACAS II compliant with TCAS II change 7.1	100%	Completed													
ATC17	Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer	38%	Ongoing					*								
ATC18	Multi-Sector Planning En-route - 1P2T	50%	Ongoing													2030
ATC19	Enhanced AMAN-DMAN integration	50%	Ongoing													2030
ATC20	Enhanced STCA with down-linked parameters via Mode S EHS	0%	Not yet planned													2030
COM10	Migrate from AFTN to AMHS	100%	Completed													
COM11.1	Voice over Internet Protocol (VoIP) in En-Route	42%	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)	62%	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
FCM01	Implement enhanced tactical flow management services	100%	Completed													

Main Objectives	Topic	Progress at the end of 2020	Status	2020		2021		2022		2023		2024		2025		>2025
FCM03	Collaborative Flight Planning	100%	Completed					*								
FCM04.2	Short Term ATFCM Measures (STAM) - Phase 2	10%	Ongoing					*								
FCM05	Interactive Rolling NOP	56%	Ongoing					*								
FCM06	Traffic Complexity Assessment	50%	Ongoing					*								
INF07	Electronic Terrain and Obstacle Data (eTOD)	100%	Completed													
INF08.1	Information Exchanges using the SWIM Yellow TI Profile	7%	Ongoing											*		
ITY-ACID	Aircraft Identification	92%	Late	*												
ITY-ADQ	Ensure Quality of Aeronautical Data and Aeronautical Information	81%	Late													
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-COTR	Implementation of ground-ground automated co-ordination processes	100%	Completed													
ITY-FMTP	Common Flight Message Transfer Protocol (FMTP)	100%	Completed													
ITY-SPI	Surveillance Performance and Interoperability	100%	Completed		*											
NAV03.1	RNAV 1 in TMA Operations	100%	Completed													2030
NAV03.2	RNP 1 in TMA Operations	20%	Ongoing									*				
NAV10	RNP Approach Procedures to instrument RWY	82%	Ongoing									*				
NAV12	ATS IFR Routes for Rotorcraft Operations	10%	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 2020, 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 planned projects assumed to offer the required capacity, 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 Level 1 document covers a high-level list of the projects showing the applicable links. All other details like description, timescale, progress made and expected contribution to the ATM Key Performance Areas provided by the State per each project are available in the Level 2 document;

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

Chapter 5 contains aggregated information at State level covering the overall level of implementation, implementation per SESAR 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 Level 1 document is completed with a separate document called LSSIP Level 2. This document consists of a set of tables organised in line with the list of Implementation Objectives. Each table contains all the actions planned by the four national stakeholders (REG, ASP, MIL and APO) to achieve their respective Stakeholder Lines of Action (SLoAs) as established in the European ATM Master Plan L3 Implementation Plan Edition 2020. In addition, it covers a detailed description of the Implementation Projects for the State as extracted from the LSSIP DataBase.

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

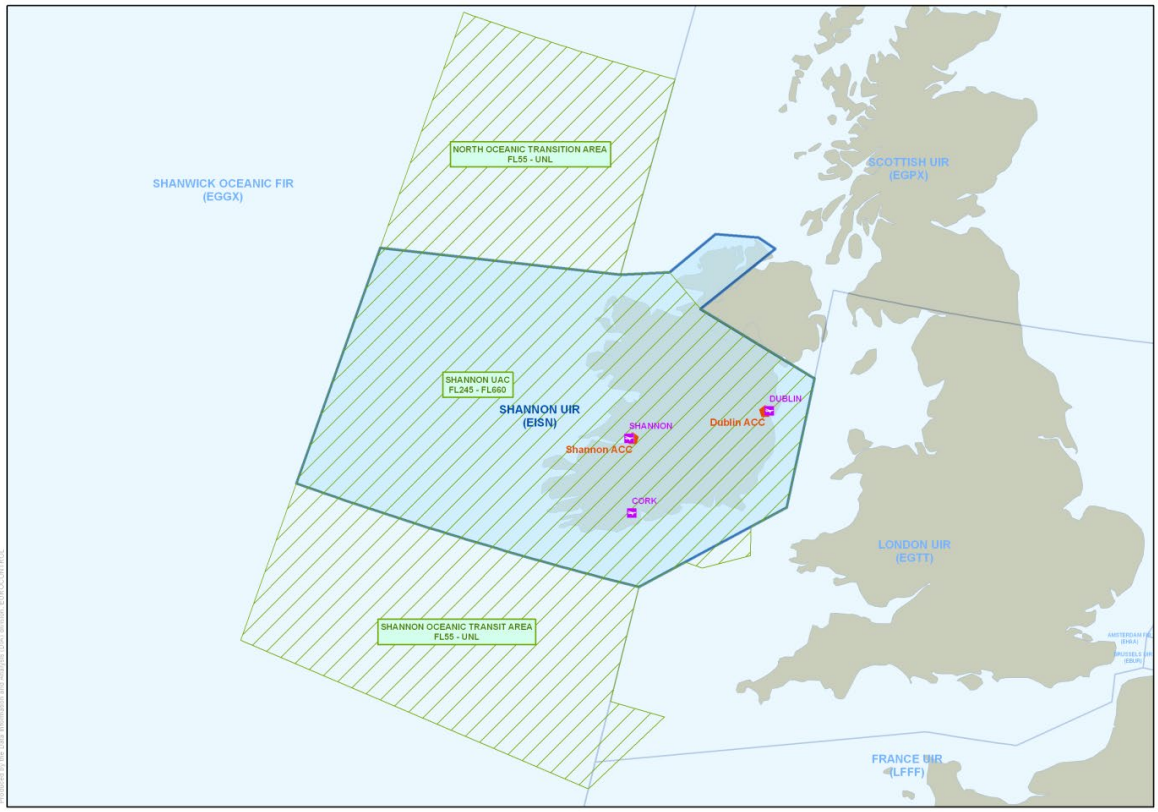
Geographical description of the FIR(s)

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:

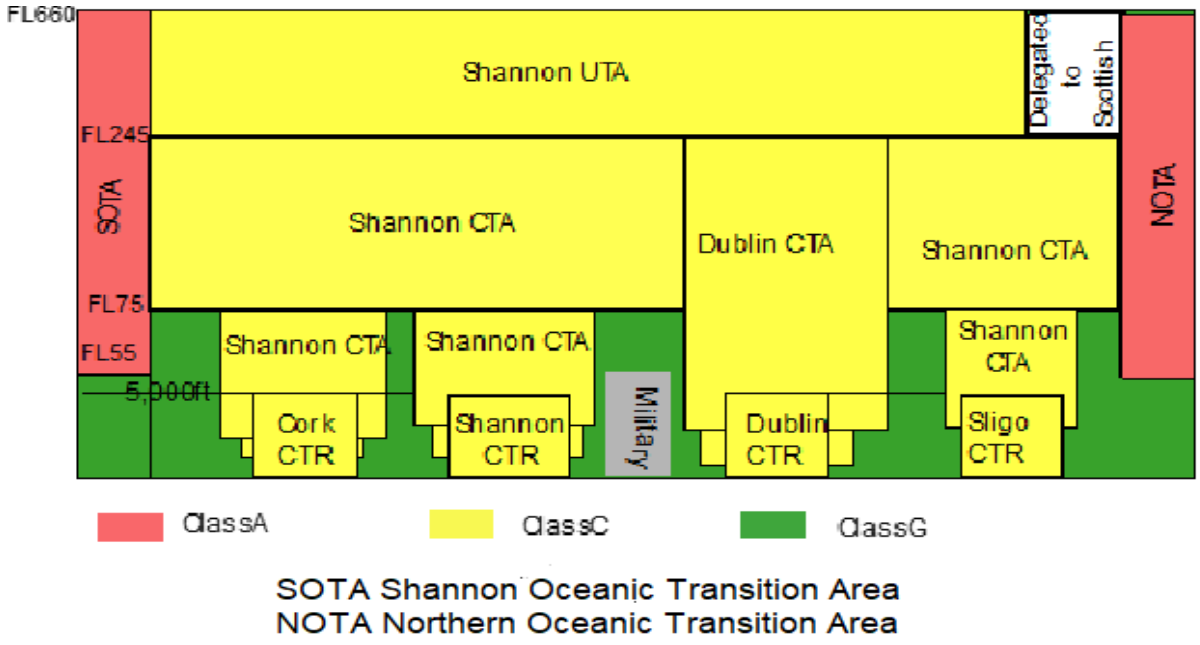
- Shannon CTA (upper limit FL 245);
- Dublin CTA/TMA (upper limit FL 245);
- Shannon UIR/UTA (FL 245 to FL 660).

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.

ATC Units

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

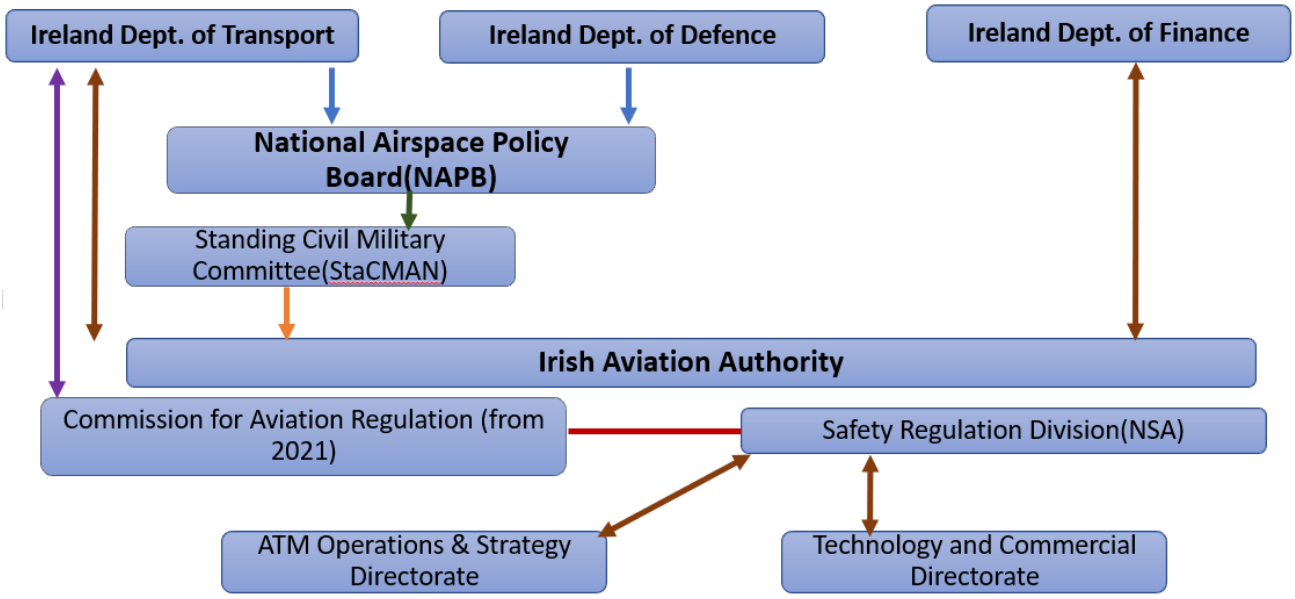
ATC Unit	Number of sectors		Associated FIR(s)	Remarks
	En-route	TMA		
Shannon	12	2	London FIR, Scottish FIR, Brest FIR and Shanwick FIR	TWR and Approach service co-located at Shannon Airport as part of IAA Terminal Services Business Unit
Dublin	4	2	London Scottish and Shannon	TWR for Dublin Airport
Cork	0	2	Shannon	TWR and Approach service co-located at Cork Airport as part of IAA Terminal Services Business Unit
Baldonnel Military Air Base		1	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

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, for completion and formal establishment during 2021.

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 Chargesare 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.

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) 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 TransportDoTDoT)/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 is responsible for ATM safety regulation for Ireland, which is applied to civil ATM only and not extended to military operations.

Within the Authority, provision of Air Traffic Services (ATS) and Safety Regulation are functionally separate (for the 2020 LSSIP Report). However, it is planned to have full organisational separation in 2021, 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 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:	2019	2019 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	Y		
CNS	Y		
MET	N	MET Eireann	
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 – Major upgrade 2019
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 – Major upgrade planned in 2019 has been delayed to align the ATM System build with the COOPANS partners. Build 3.6 planned for application in 2021
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 2013 and 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 2020 – 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 PCP airport covered in this LSSIP.

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

Cork Airport (CRK) is 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: *Shannon Airport and 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 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

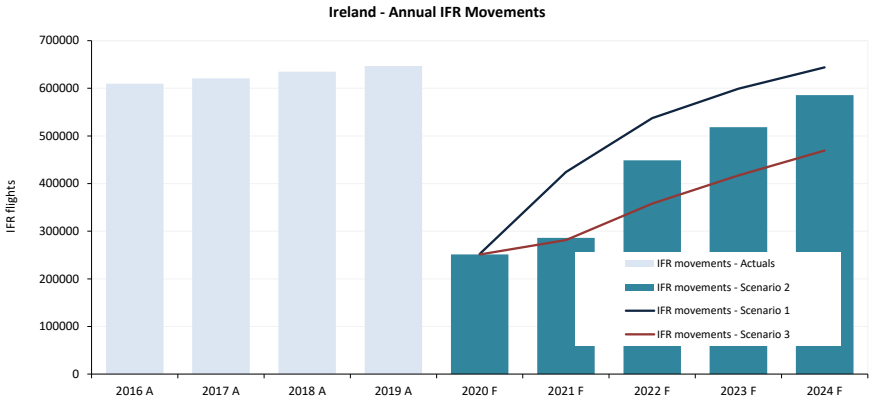
If Military fly GAT-IFR inside controlled airspace, specify existing special arrangements:								
No special arrangements				Y	Exemption from Route Charges			Y
Exemption from flow and capacity (ATFCM) measures				N	Provision of ATC in UHF			N
CNS exemptions:	RVSM	N	8.33	N	Mode S	N	ACAS	N
Others:	N/A							

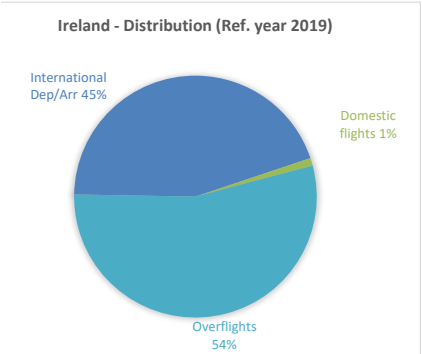
Flexible Use of Airspace (FUA)

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





A = Actual

F = Forecast

EUROCONTROL Five-Year Forecast 2020-2024									
IFR flights yearly growth		2017 A	2018 A	2019 A	2020 F	2021 F	2022 F	2023 F	2024 F
Ireland	Sc1				-61.0%	68.3%	26.7%	11.5%	7.5%
	Sc2	1.8%	2.3%	1.8%	-61.1%	13.8%	56.9%	15.6%	13.0%
	Sc3				-61.2%	12.1%	27.2%	16.5%	12.5%
ECAC	Sc1				-55.1%	61.9%	21.9%	8.9%	6.8%
	Sc2	4.0%	3.8%	0.8%	-56.4%	16.6%	41.9%	14.1%	12.2%
	Sc3				-56.6%	14.5%	17.5%	14.8%	11.6%

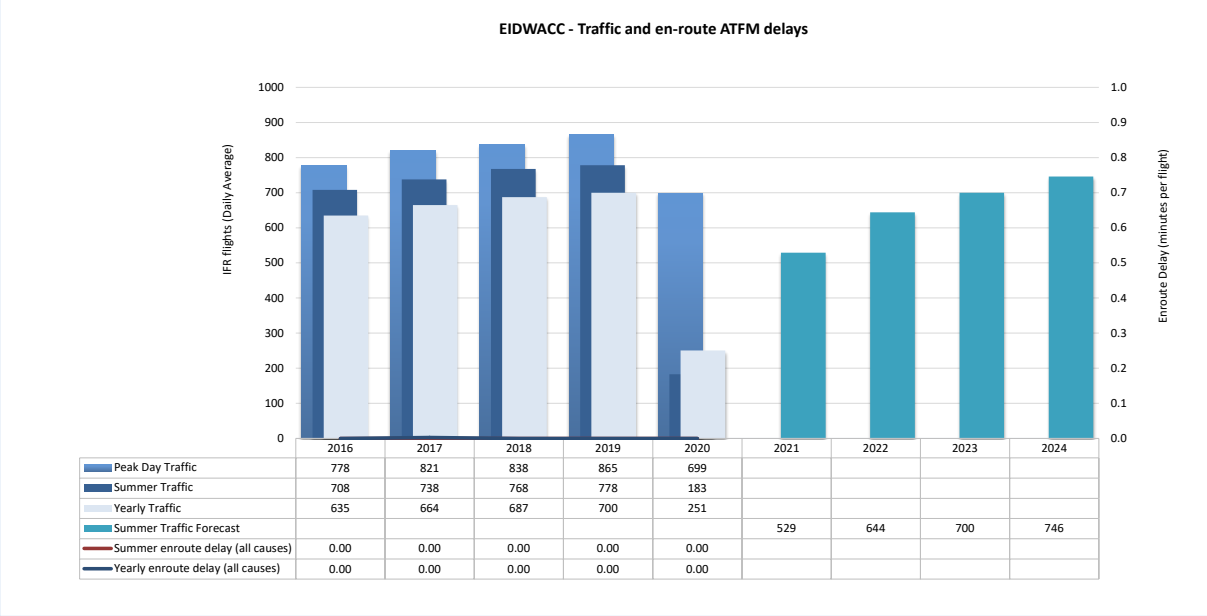
Note: 2020 forecast compared to 2019 pre-COVID figures

2020

Traffic in Ireland decreased by 59% in 2020 compared to 2019.

2.2. Dublin ACC

Traffic and en-route ATFM delays 2016-2024



	2016	2017	2018	2019	2020	2021	2022	2023	2024
Peak Day Traffic	778	821	838	865	699				
Summer Traffic	708	738	768	778	183				
Yearly Traffic	635	664	687	700	251				
Summer Traffic Forecast						529	644	700	746
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				

2020 performance

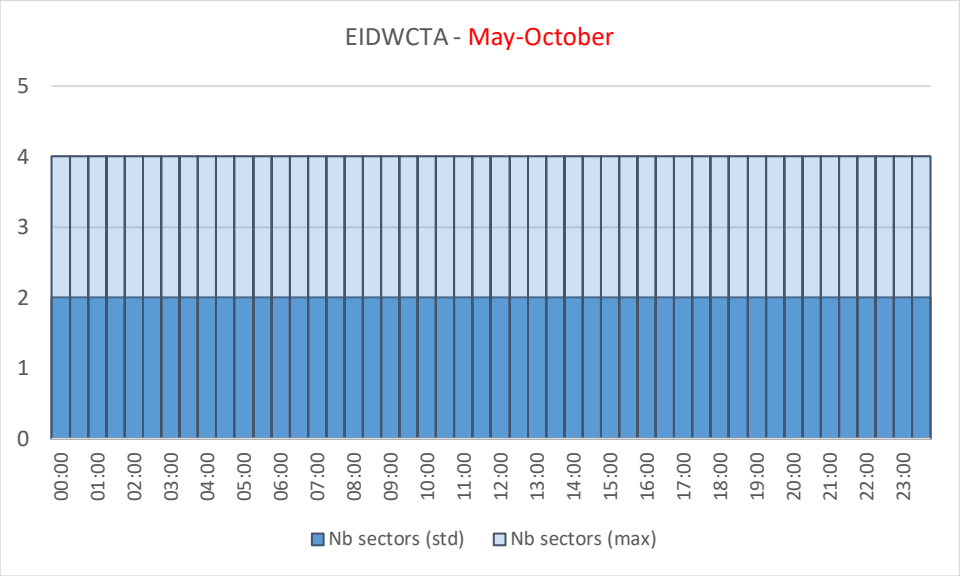
Dublin ACC	Traffic evolution (2020 vs 2019)	En-route Delay (min. per flight)
	Actual Traffic	All reasons
Year	-64%	0.00
Summer	-76%	0.00

Summer 2020 performance assessment
The average delay per flight was zero in Summer 2020.

Operational actions	Achieved	Comments
Improved ATFCM, including STAM	Yes	
UK / Ireland FAB initiatives	Yes	
On-going recruitment to maintain staff levels	Yes	
Cross rating training	Yes	
Upgrade of the ATM system	Yes	

Planning Period – Summer 2021

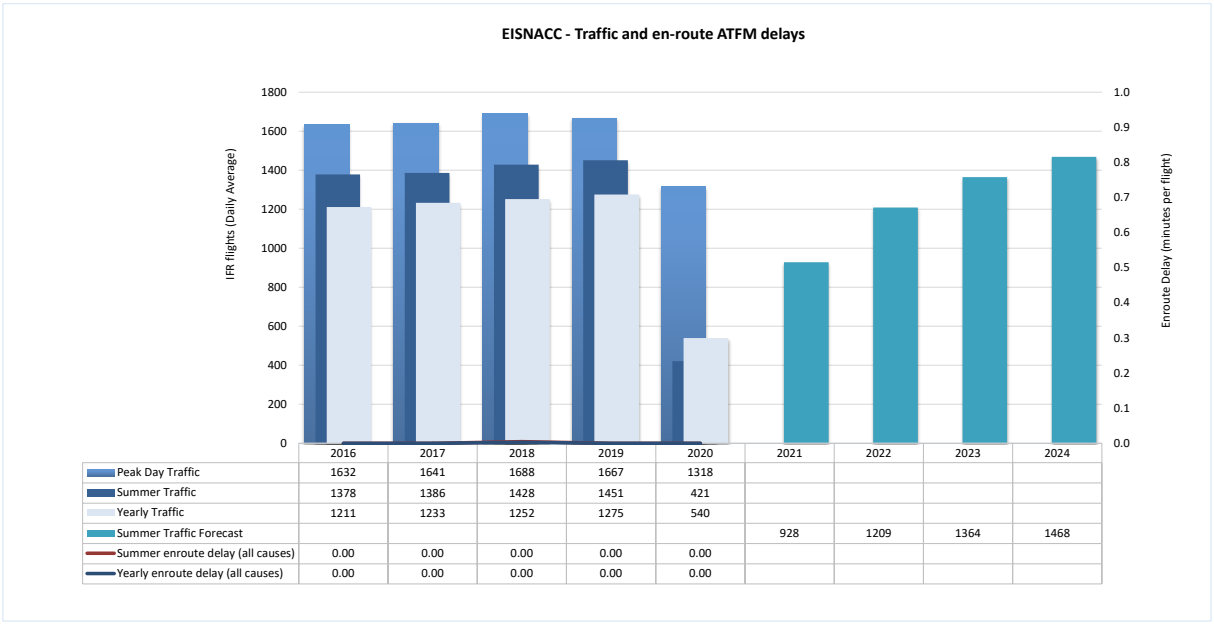
2021 Summer Capacity Plan	
Free Route Airspace	Applied in Enroute and Shannon CTA
Airspace Management Advanced FUA	In co-ordination with IAC and NATS
Airport & TMA Network Integration	Through co-ordination with State Airports
Cooperative Traffic Management	Improved ATFCM, including STAM
Airspace	UK / Ireland FAB initiatives
Procedures	
Staffing	On-going recruitment to maintain staff levels
	Cross rating training
Technical	
Capacity	Re-evaluation of sector capacities (CAPAN)
Significant Events	New Tower Operational Q1 2021
Additional information	10L/28R Operational Q2 2022



Summer 2021 Outlook
No capacity issues are foreseen for Dublin ACC in Summer 2021.

2.3. Shannon ACC

Traffic and en-route ATFM delays 2016-2024



	2016	2017	2018	2019	2020	2021	2022	2023	2024
Peak Day Traffic	1632	1641	1688	1667	1318				
Summer Traffic	1378	1386	1428	1451	421				
Yearly Traffic	1211	1233	1252	1275	540				
Summer Traffic Forecast						928	1209	1364	1468
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				

2020 performance

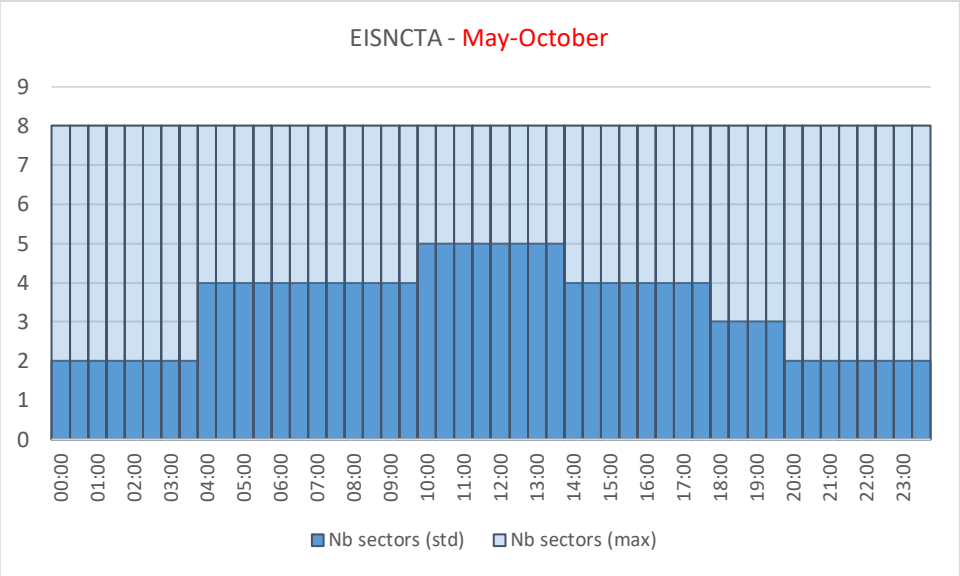
Shannon ACC	Traffic evolution (2020 vs 2019)	En-route Delay (min. per flight)
	Actual Traffic	All reasons
Year	-58%	0.00
Summer	-71%	0.00

Summer 2020 performance assessment
The average delay per flight was zero in Summer 2020.

Operational actions	Achieved	Comments
Improved ATFCM, including STAM	Yes	
UK / Ireland FAB initiatives	Yes	
CPDLC (FANS and ATN)	Yes	
Developing Queue Management programme	Yes	
On-going recruitment to maintain staff levels	Yes	
EU ADS-B Mandate	Yes	
Dynamic sectorisation available	Yes	

Planning Period – Summer 2021

2021 Summer Capacity Plan	
Free Route Airspace	Applied in Enroute and Shannon CTA
Airspace Management Advanced FUA	In co-ordination with IAC and NATS
Airport & TMA Network Integration	Through co-ordination with State Airports
Cooperative Traffic Management	Improved ATFCM, including STAM
Airspace	UK / Ireland FAB initiatives
	Low level airspace reorganisation
Procedures	CPDLC (FANS and ATN)
	Developing Queue Management programme
Staffing	On-going recruitment to maintain staff levels (suspended during 2020 due to COVID-19)
Technical	Dynamic sectorisation available
Capacity	Re-evaluation of sector capacities (CAPAN) – low sectors
Significant Events	Operational rollout of CEROC Contingency Centre
Additional information	



Summer 2021 Outlook
No capacity issues are foreseen for Shannon ACC in Summer 2021.

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 Chapter 2 of the Level 2 - Detailed Implementation Status document.

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)	2015-2021	The project to migrate to Voice Over Internet Protocol (VOIP) and develop System Wide Information Management (SWIM) capabilities is required to meet SESAR requirements. Ongoing. System update completed in 2018. 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.	L3: COM11.1

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Contingency	IAA-ATS Provider (IE)	Operational date planned for Q2 2021	Operational testing completed 2020 and certified for operational use in December 2020, with operational rollout following Regulatory approval, Q2-2021.	-
FDP - COOPANS	IAA-ATS Provider (IE)	Continuous upgrades (Yearly rollout release). Next major upgrade planned during 2021(Build 3.6 scheduled for Q2 2021 followed by Build 3.7 in Q4 2021.	Ongoing	L3: ITY-FMTP, FCM03, ATC12.1
Surveillance & Navigation - ILS programme	IAA-ATS Provider (IE)	Updated and under continuous review.	ILS replacement programme on track for completion in 2018 with new ILS systems being developed for parallel runway under development at EIDW. Completion 2020 for operations during 2021. Note: New parallel runway at EIDW planned for operations 2022. New ILS systems being installed during 2021.	-

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Surveillance & Navigation - Radar replacement	IAA-ATS Provider (IE)	2017-2021	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 has now come to end of life and is to be replaced with two Mode-S capable Radars, from 2017-2019. WAM cannot provide the Irish Sea coverage required and ADS-B equipage is not mandated in the airspace until 2020. Further works to be completed in 2021.	L3: ITY-SPI

3.2. FAB projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Introduction of NATS Prestwick and Swanwick FRA	Borealis Alliance, IAA-ATS Provider (IE), NATS	2020 Update: Delivery delayed for Prestwick. Swanwick deliverable TBC. 2021 LSSIP report to give update.	Ongoing.	-

3.3. Multinational projects

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Borealis ASM	Borealis Alliance, IAA-ATS Provider (IE), NM Eurocontrol	Delivery of multi-FAB FRA with various milestones	Ongoing across Borealis Alliance (9 ANSPs)	-
Borealis Cross Border Dynamic Sectorisation (CBDS)	ANS Finland (FI), AVINOR AS (NO), EANS (EE), 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)	ANS Finland (FI), AVINOR AS (NO), EANS (EE), IAA-ATS Provider (IE), LFV (SE), LGS (LV), NATS (UK), Naviair (DK)	2016 - 2021	Ongoing-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 intends to implement FRA in the Scottish FIR in December 2021.	L3: AOM21.2 DP: 2015_227_AF3_A and 2015_227_AF3_B; Family 3.2.4
Borealis U-Space/UTM Co-ordination Group	Borealis Alliance, IAA-ATS Provider (IE)	Application of U-Space / UTM services with delivery to reflect EASA regulation (2021-2025)	Ongoing.	-

Name of project:	Organisation(s):	Schedule:	Progress Description:	Links:
Harmonisation of Technical ATM Platform in 5 ANSP including support of free Route Airspace and preparation of PCP program (COOPANS B3.3 , B3.4 and B4.1) (2015_207_AF3_A; 2015_207_AF3_B)	Austrocontrol (AT), CCL Service Provider (HR), IAA-ATS Provider (IE), LFV (SE), Naviair (DK)	01/01/2016 - 31/12/2021	Reflected in planned COOPANS Builds 2021 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.

2020 Update

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. There are no specific projects to report on for LSSIP 2020 report, reflecting activity around Brexit during 2020.

There is good progress to report on the introduction of FRA for the Scottish FIR/UIR under the FAB, as recorded above.

Separately, NATS, the IAA and DSNA are working collaboratively to implement FRA in delegated airspace: "TAKAS Box and PEMAK Triangle[3]

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

[3] TAKAS Box

In this part of the London UIR, Shannon will provide Air Traffic Services to all aircraft. Procedures and communications will be as if this airspace were an integral part of the Shannon UIR.

This area is bounded by arcs of Great Circles joining in succession the following points:

493500N 0080000W - 493323N 0065617W - 485542N 0073430W - 485000N 0080000W - 493500N 0080000W

Vertical Limits: FL245 – FL660

PEMAK Triangle

Lateral Limits: 493323N 0065617W - 485542N 0073430W - 482841N 0045513W – 493323N 0065617W.

Vertical Limits: FL245 – FL660

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 intends to implement FRA in the Scottish FIR in December 2021.

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.

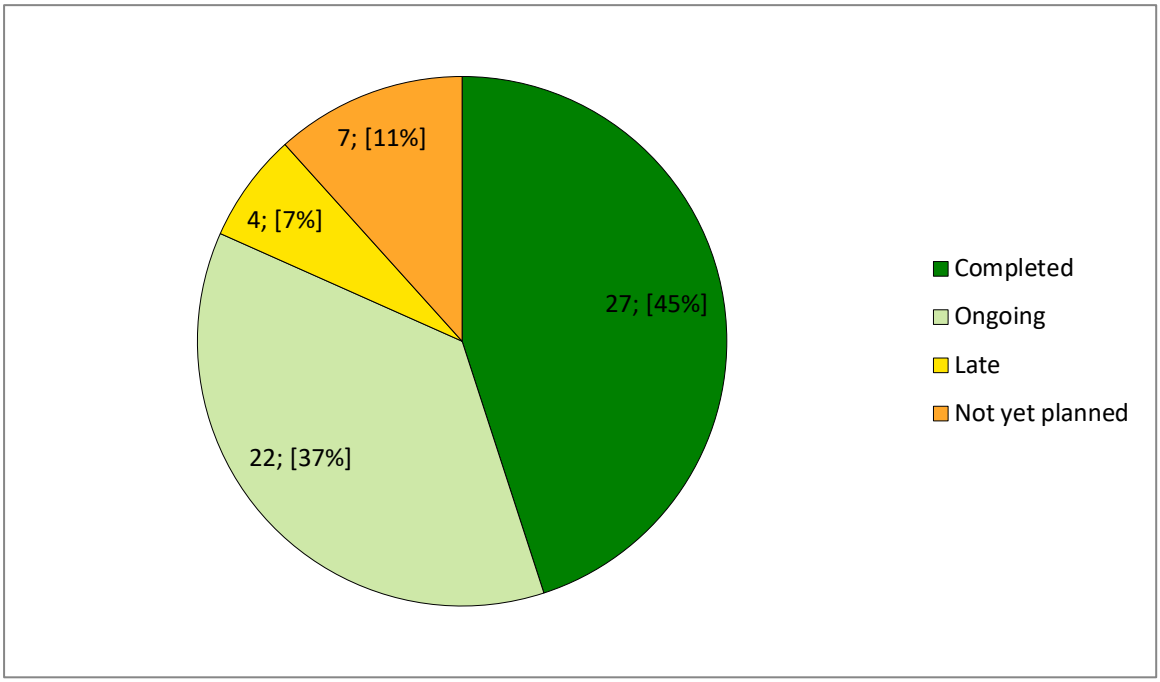
The COOPANS agreement caters for any essential requirements necessitated by the SES and SESAR initiatives. It also demonstrates the intent of the three ANSPs to collaborate in a way, which will bring real benefits to airlines whilst embracing the spirit of the Single European Sky move towards common 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 3.6 scheduled for 2021 followed by Build 3.7 in Q4 2021.

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)



Summary of the implementation of the objectives

Overall progress in meeting Implementation Objectives for Ireland is positive with a significant number completed or ongoing and all objectives stable. Some Objectives are recorded as "not yet planned," being new objectives or that associated deliverables have not commenced.

2020 Update

- **AOM13.1: Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling**

  This objective was recorded as completed in 2020 through coordination between the IAA ANSP, Military and Regulatory stakeholders under the auspices of the National Airspace Policy Body (NAPB). This Objective was previously recorded as completed for the 2019 Report. However, some additional work was required subsequently in 2020 and this objective is now fully closed.

Ireland has reported as "Late" Implementing Objective(s): AOP05, AOP11 and ITY-ADQ.

- **AOP05: Airport Collaborative Decision Making (A-CDM)**

  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.

- **AOP 11: Initial Airport Operations Plan**

  Implementation will be separately addressed following full implementation of ACDM. 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

- **ITY-ACID: Aircraft Identification**

  Reported as completed in 2019. 2020 Update: 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) This objective is recorded as 92% complete.

- **ITY-ADQ: Ensure Quality of Aeronautical Data and Aeronautical Information**

  The LSSIP report does not fully reflect the progress of this objective. Ireland are close to full compliance, for 2020 calculating an 81% completion internally with robust processes in place to meet this objective. NSA sign-off on affected processes ensures that aeronautical data quality is assured. A review of our ADQ processes and application against applicable Regulations EU REG. 2017/373 and EU REG. 2020/469 supports this compliance level with NSA's verification of compliance of this data. This update reflects the IAA's corporate decision to discontinue use of ASSET as a vehicle for ADQ.

Notable Objectives include:

- **AOM19.4 Management of pre-defined Airspace Configurations**

  Dynamic Sectorisation has been in place in the Shannon FIR since 2004 with ongoing development supporting FRA(AOM21.2) in 2009. 2020 Update: Full FAB ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application.

- **ITY-AGVCS2 8,33 Air-ground Channel Spacing**

  Air-ground Channel Spacing below FL195 is fully completed.

- **NAV10: RNP Approach Procedures with Vertical Guidance**

  This Objective was completed ahead of schedule. Further enhancements with inclusion of LPV minima at all applicable runway ends was completed during 2019 and further updates at non-State Aerodromes is scheduled for 2021.

Currently Planned/Not planned Objectives with Deliverables in 2020-2021:

- **AOP 13: Automated Assistance to Controller for Surface Movement Planning and Routing**

  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.

- **ATC15.2: Arrival Management Extended to Enroute**

  While there is no specific plan commenced, the IAA has responsibility for the delivery of traffic from the en-route airspace to state airports in Ireland: EIDW, EICK, EINN and Regional, non-state airports: EIDL, EISG, EIKN, EIKY and EIWF. This task is managed internally with the IAA ATM system for state airports and more manually for non-state airports.

In line with the ATC 15.1 objective, it is the position of the IAA that there is no need for further development in this area, when the geographical location of IAA controlled en-route airspace and the interfaces with this airspace are considered. However, a project has commenced to look at a re-organisation of enroute airspace (FIR) to rationalise service delivery to all aerodromes in Ireland (excluding EIDW) and this objective will be considered as part of this project if appropriate and required.

Local Objectives:

- **ENV02: Airport Collaborative Environmental Management**

  Recorded as completed with robust co-ordination procedures in place between the daa Dublin Airport, the ANSP and affected stakeholders and as evidenced through A-CDM.

- **ENV03(EIDW/EICK/EINN): Continuous Climb Operations (CCO)**

  Recorded as Completed.

5.2. Objective Progress per SESAR Essential Operational Changes

Legend:

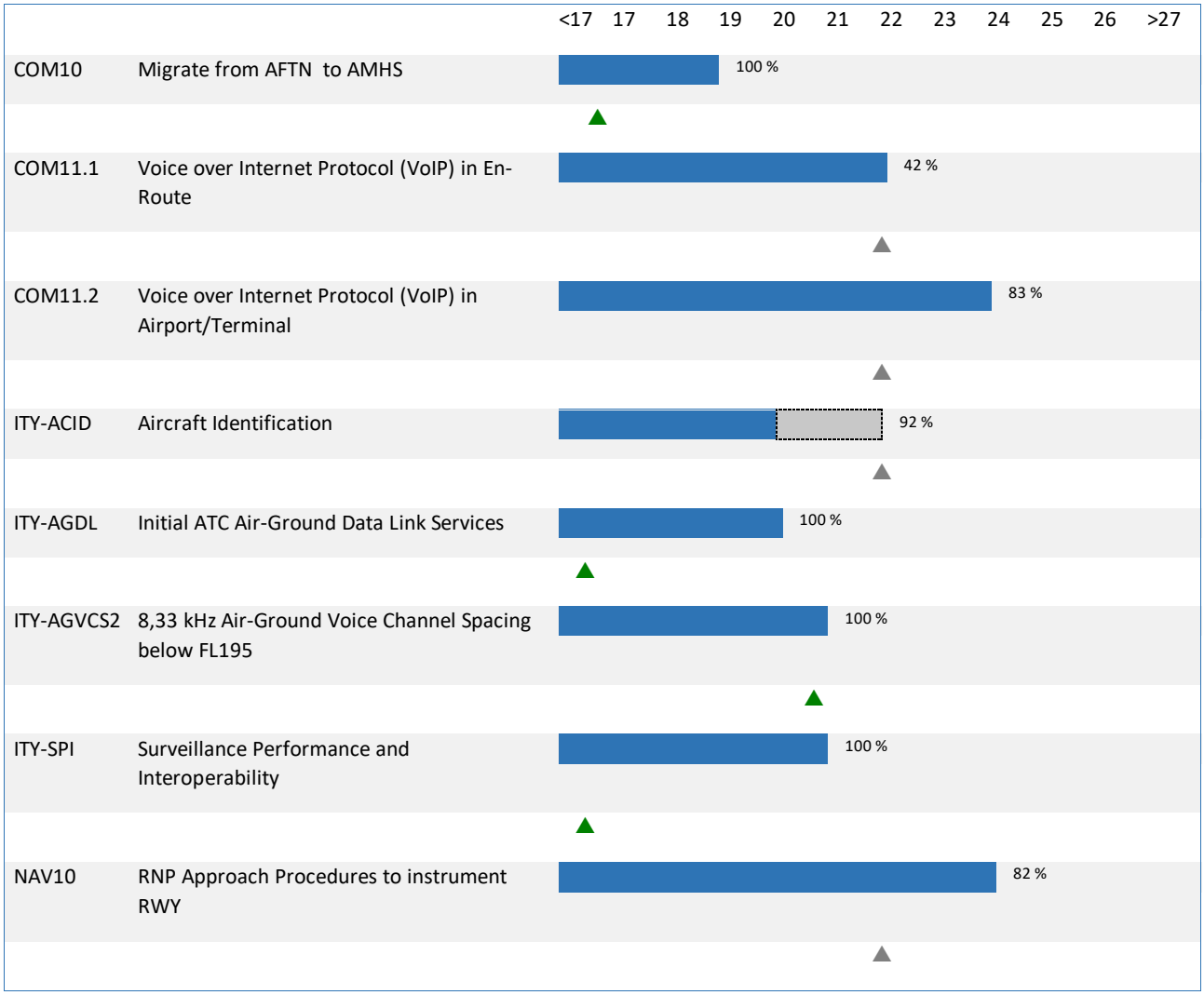
▲ 100% = Objective completed

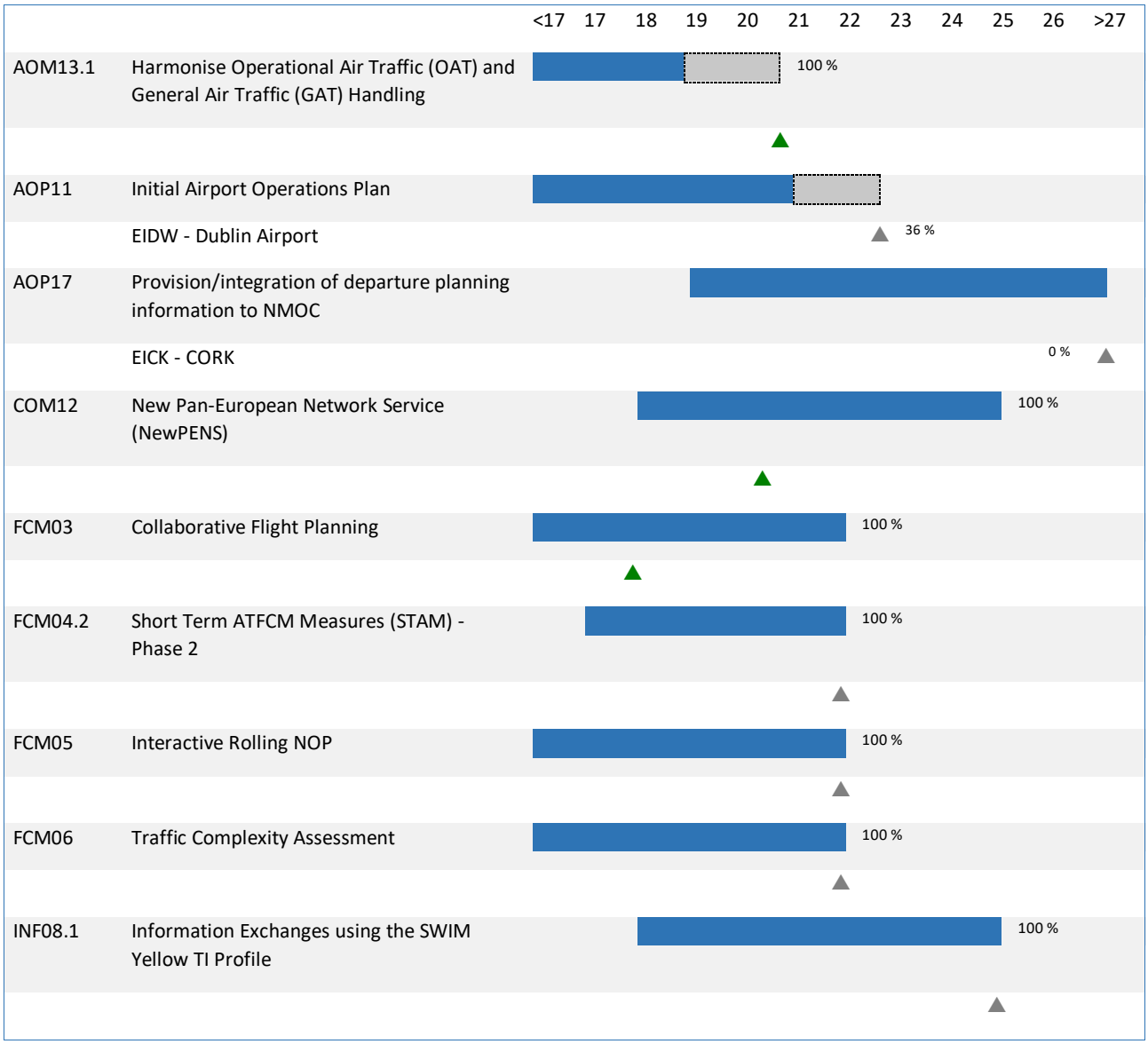
▲ ## % = Expected completion / % Progress

= Implementation Objective timeline (to FOC date)

= Completion beyond Implementation Objective timeline

CNS infrastructure and services




<17
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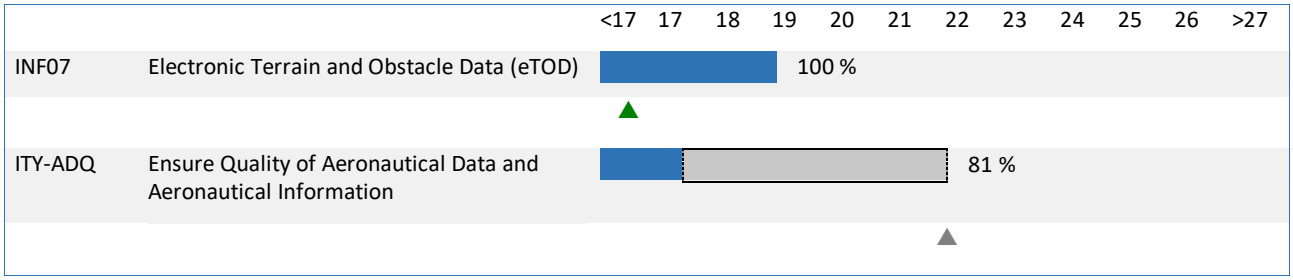
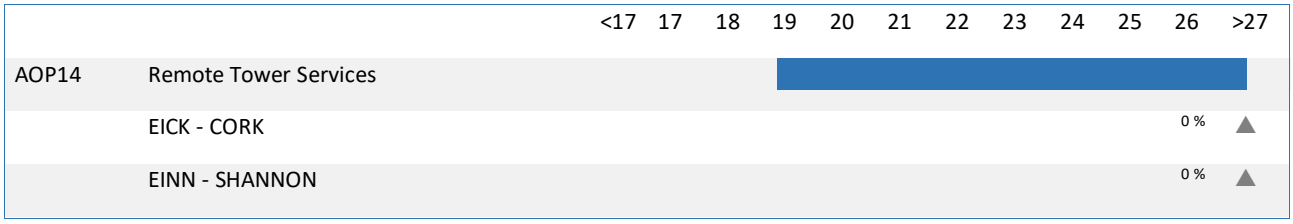
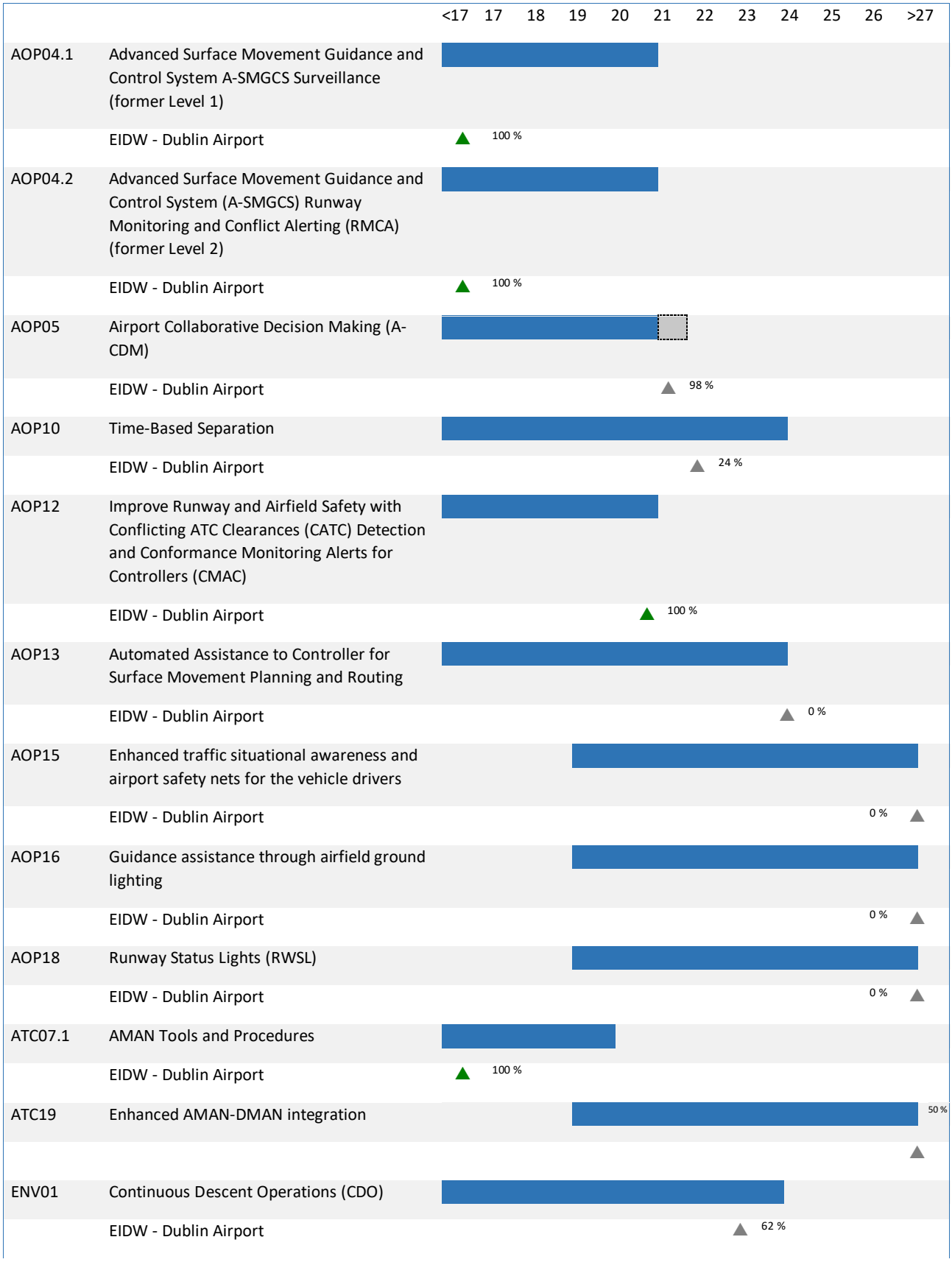
>27
AOM13.1
Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling
100 %
AOP11
Initial Airport Operations Plan
EIDW - Dublin Airport
36 %
AOP17
Provision/integration of departure planning information to NMOC
EICK - CORK
0 %
COM12
New Pan-European Network Service (NewPENS)
100 %
FCM03
Collaborative Flight Planning
100 %
FCM04.2
Short Term ATFCM Measures (STAM) - Phase 2
100 %
FCM05
Interactive Rolling NOP
100 %
FCM06
Traffic Complexity Assessment
100 %
INF08.1
Information Exchanges using the SWIM Yellow TI Profile
100 %


dS
Digital
AIM and MET
services


<17 17 18 19 20 21 22 23 24 25 26 >27
INF07
Electronic Terrain and Obstacle Data (eTOD)
100 %
ITY-ADQ
Ensure Quality of Aeronautical Data and Aeronautical Information
81 %


vS
Virtualisation
of service
provision


<17 17 18 19 20 21 22 23 24 25 26 >27
AOP14
Remote Tower Services
EICK - CORK
0 %
EINN - SHANNON
0 %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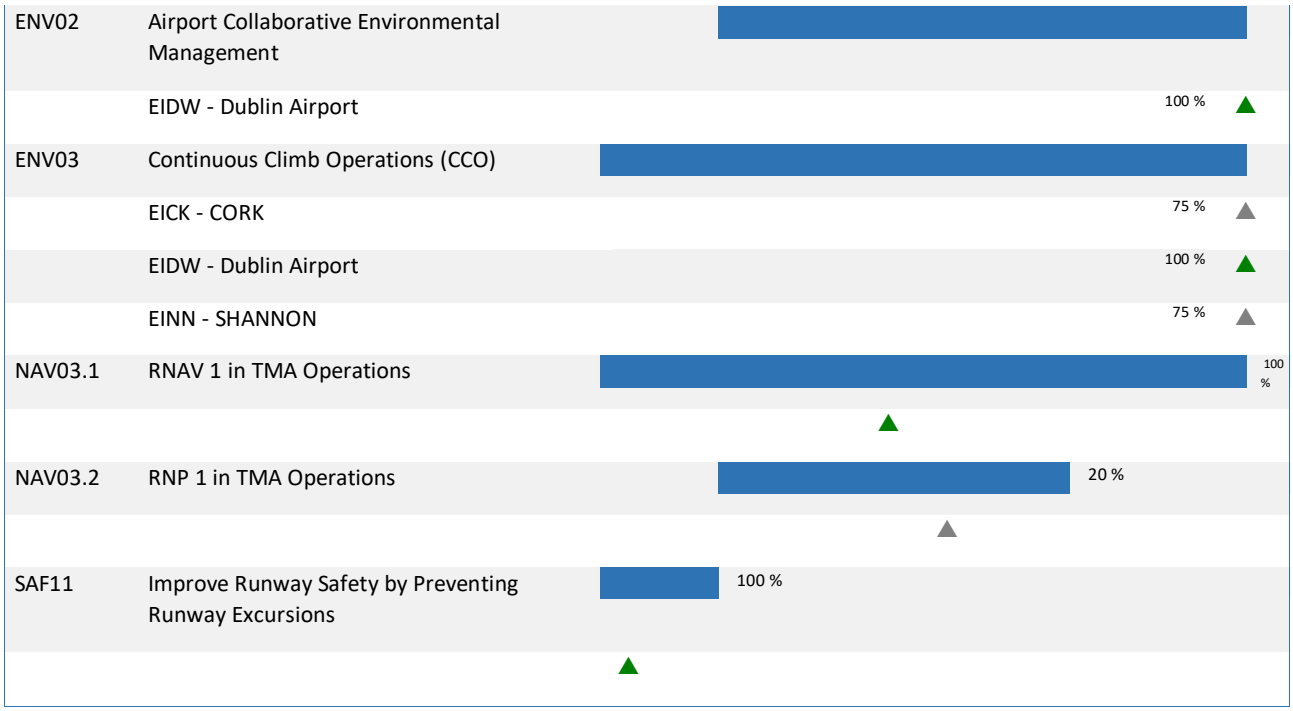
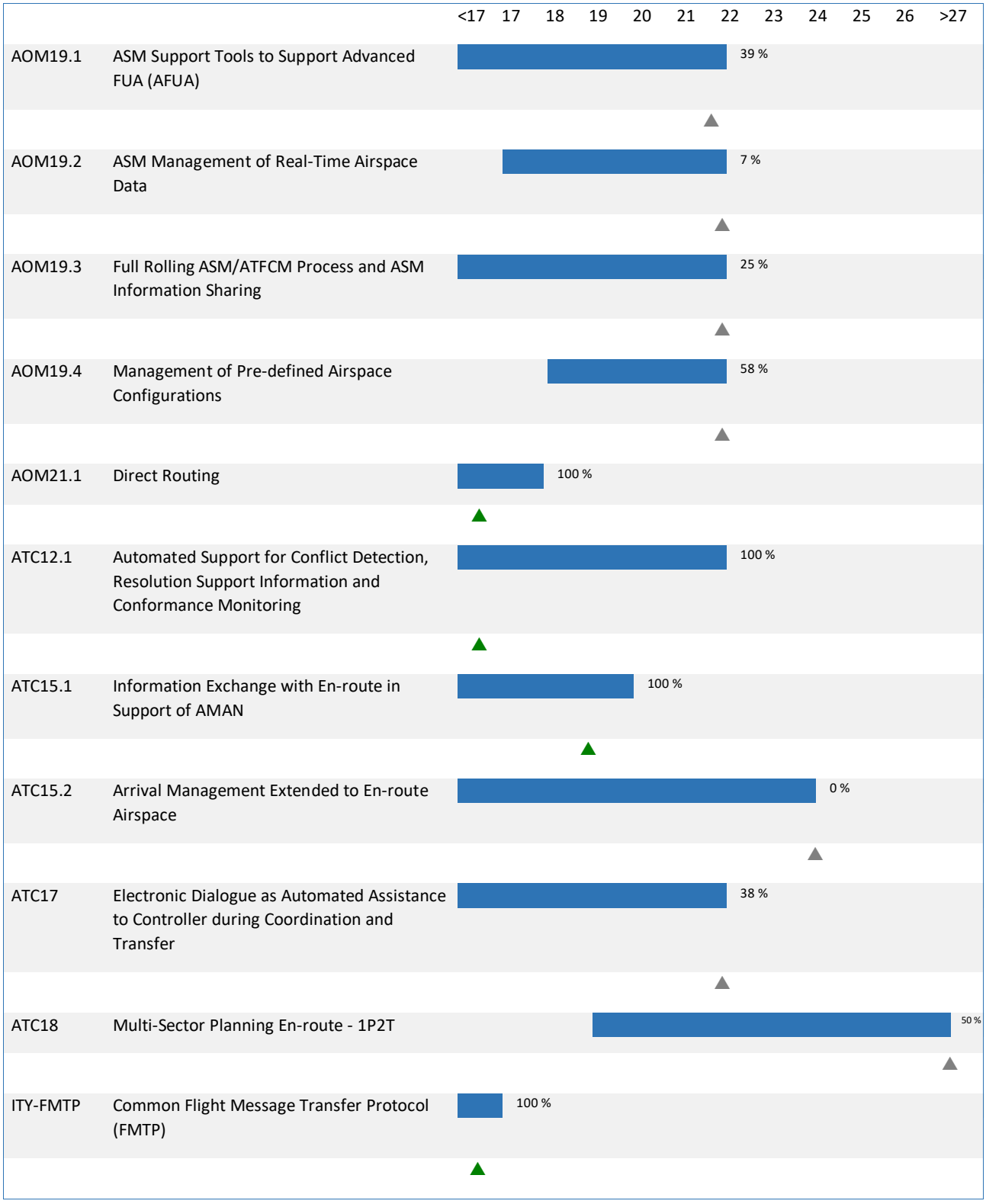
>27
AOP04.1
Advanced Surface Movement Guidance and Control System A-SMGCS Surveillance (former Level 1)
EIDW - Dublin Airport
100 %
AOP04.2
Advanced Surface Movement Guidance and Control System (A-SMGCS) Runway Monitoring and Conflict Alerting (RMCA) (former Level 2)
EIDW - Dublin Airport
100 %
AOP05
Airport Collaborative Decision Making (A-CDM)
EIDW - Dublin Airport
98 %
AOP10
Time-Based Separation
EIDW - Dublin Airport
24 %
AOP12
Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)
EIDW - Dublin Airport
100 %
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 %
ATC07.1
AMAN Tools and Procedures
EIDW - Dublin Airport
100 %
ATC19
Enhanced AMAN-DMAN integration
50 %
ENV01
Continuous Descent Operations (CDO)
EIDW - Dublin Airport
62 %


ENV02
Airport Collaborative Environmental Management
EIDW - Dublin Airport
100 %
ENV03
Continuous Climb Operations (CCO)
EICK - CORK
75 %
EIDW - Dublin Airport
100 %
EINN - SHANNON
75 %
NAV03.1
RNAV 1 in TMA Operations
100 %
NAV03.2
RNP 1 in TMA Operations
20 %
SAF11
Improve Runway Safety by Preventing Runway Excursions
100 %


<17
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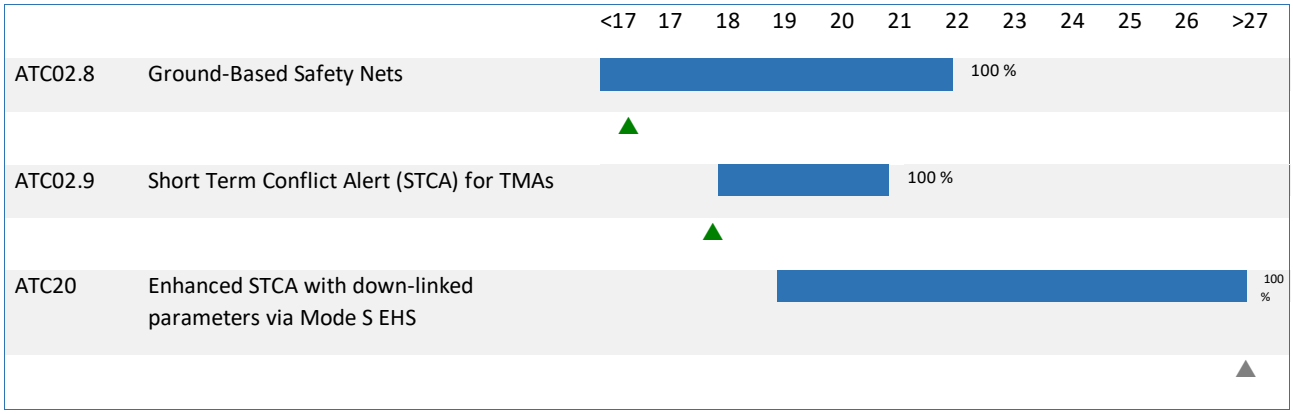
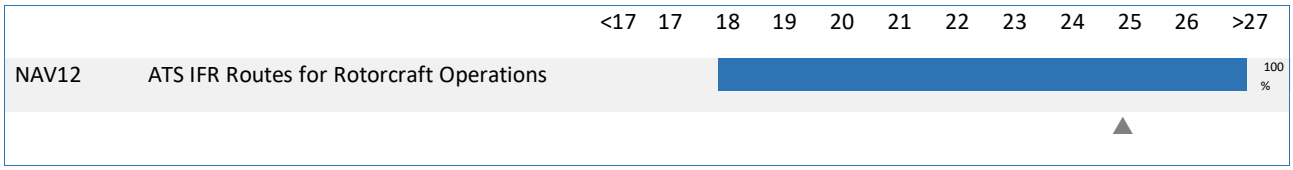
>27
AOM19.1
ASM Support Tools to Support Advanced FUA (AFUA)
39 %
AOM19.2
ASM Management of Real-Time Airspace Data
7 %
AOM19.3
Full Rolling ASM/ATFCM Process and ASM Information Sharing
25 %
AOM19.4
Management of Pre-defined Airspace Configurations
58 %
AOM21.1
Direct Routing
100 %
ATC12.1
Automated 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
0 %
ATC17
Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer
38 %
ATC18
Multi-Sector Planning En-route - 1P2T
50 %
ITY-FMTP
Common Flight Message Transfer Protocol (FMTP)
100 %


TBO
Trajectory
-based
operations


<17 17 18 19 20 21 22 23 24 25 26 >27
ATC02.8
Ground-Based Safety Nets
100 %
ATC02.9
Short Term Conflict Alert (STCA) for TMAs
100 %
ATC20
Enhanced STCA with down-linked parameters via Mode S EHS
100 %


M3
Multimodal mobility
and integration of
all airspace users


<17 17 18 19 20 21 22 23 24 25 26 >27
NAV12
ATS IFR Routes for Rotorcraft Operations
100 %

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.

These results were determined using the LSSIP Year 2020 declared statuses and progress of the relevant implementation objectives in accordance with the initial mapping between ATM Master Plan Level 3 and new ICAO GANP 6th Edition (2019), as reflected in the Implementation Plan 2020. A comprehensive analysis performed as part of the ongoing ICAO EURGANT Project Team activity may result in updating the mapping following EASPG approval.

Legend:

ACAS

		<17	17	18	19	20	21	22	23	24	25	26	>27
ACAS-B1/1	ACAS Improvements					100 %							

ACDM

		<17	17	18	19	20	21	22	23	24	25	26	>27
ACDM-B0/2	Integration with ATM Network function					98.0 %		100 %					

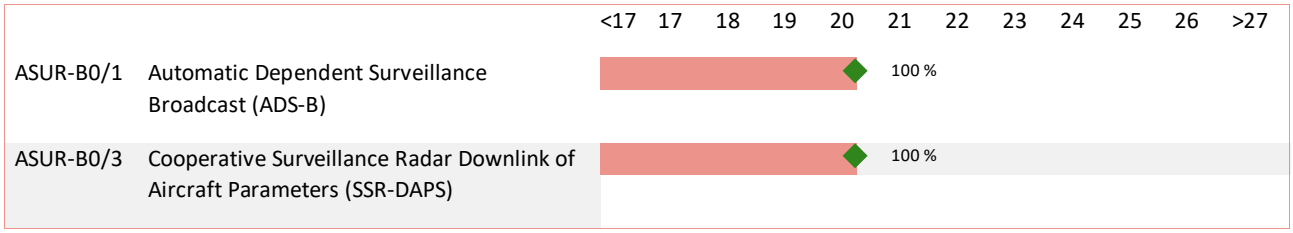
AMET

		<17	17	18	19	20	21	22	23	24	25	26	>27
AMET-B2/4	Meteorological information service in SWIM					7.0 %						100 %	

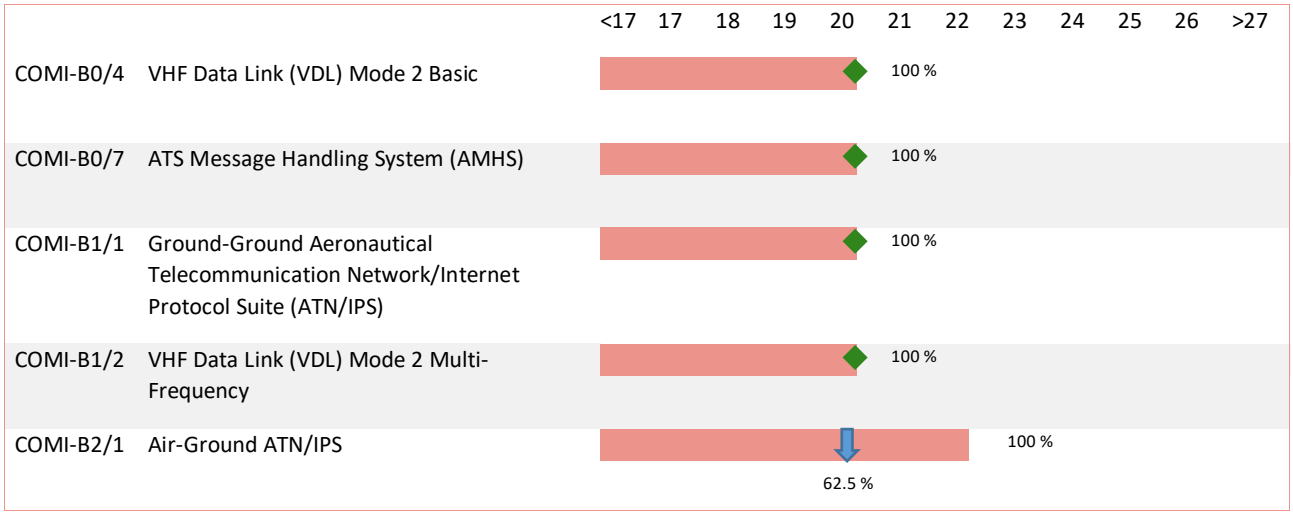
APTA

		<17	17	18	19	20	21	22	23	24	25	26	>27
APTA-B0/1	PBN Approaches (with basic capabilities)					82.0 %			100 %				
APTA-B0/2	PBN SID and STAR procedures (with basic capabilities)					100 %							
APTA-B0/4	CDO (Basic)					62.0 %				100 %			
APTA-B0/5	CCO (Basic)					83.33 %			100 %				
APTA-B0/6	PBN Helicopter Point in Space (PinS) Operations					10.0 %						100 %	
APTA-B1/1	PBN Approaches (with advanced capabilities)					82.0 %			100 %				
APTA-B1/2	PBN SID and STAR procedures (with advanced capabilities)					20.0 %			100 %				

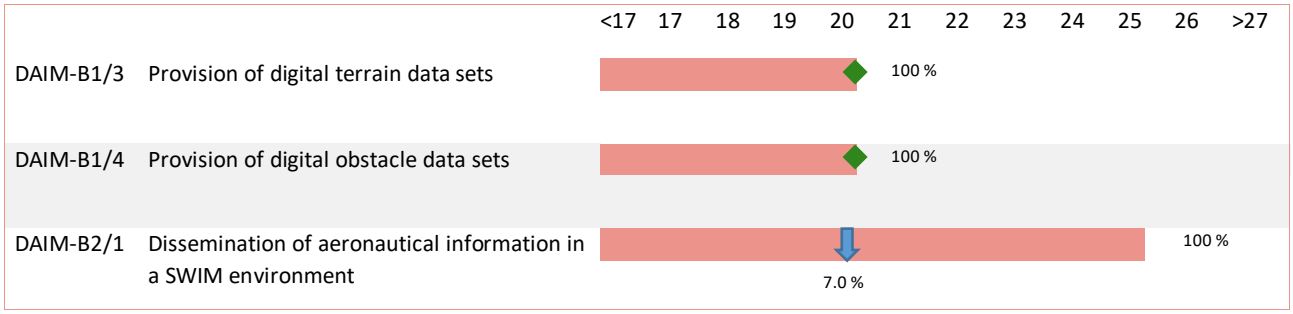
ASUR



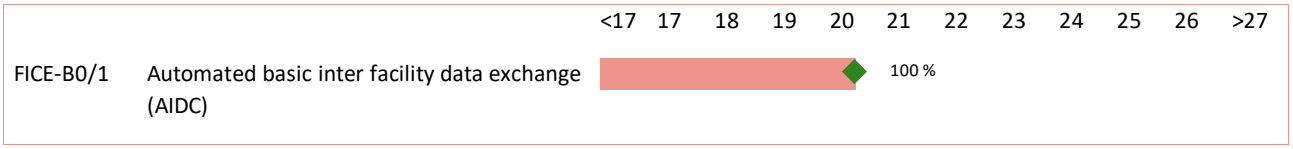
COMI



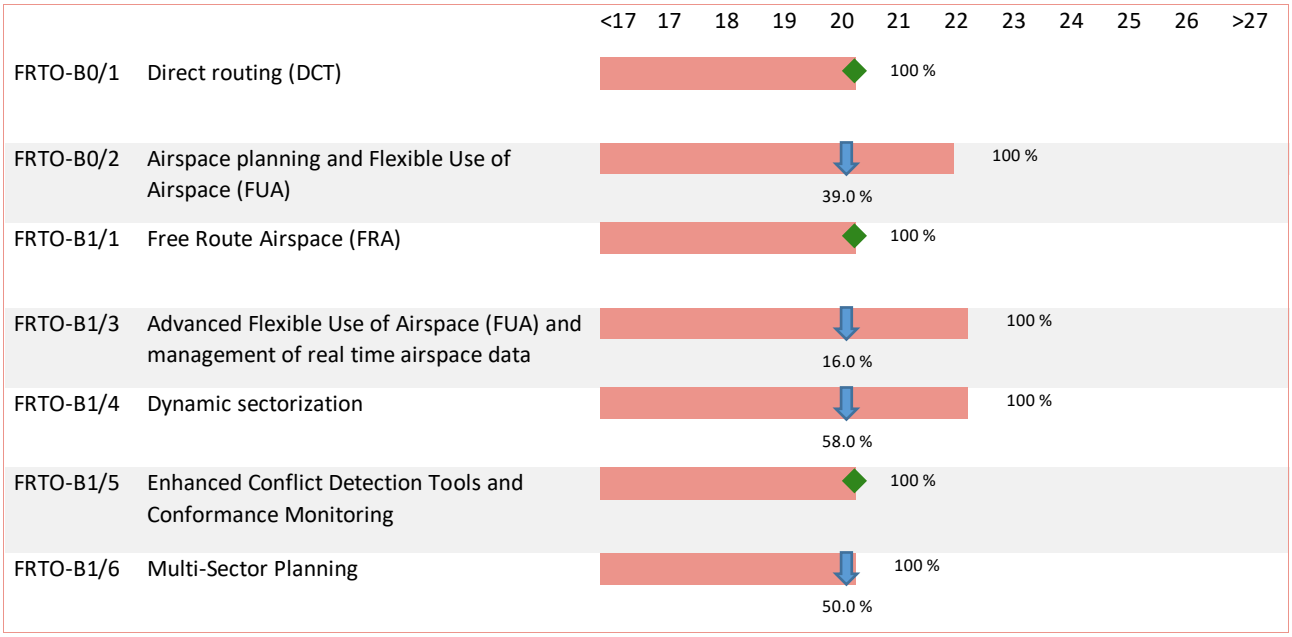
DAIM



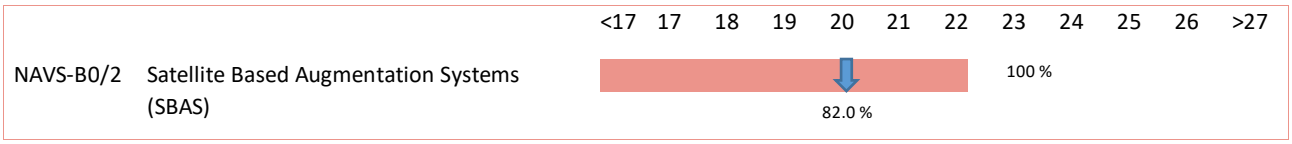
FICE



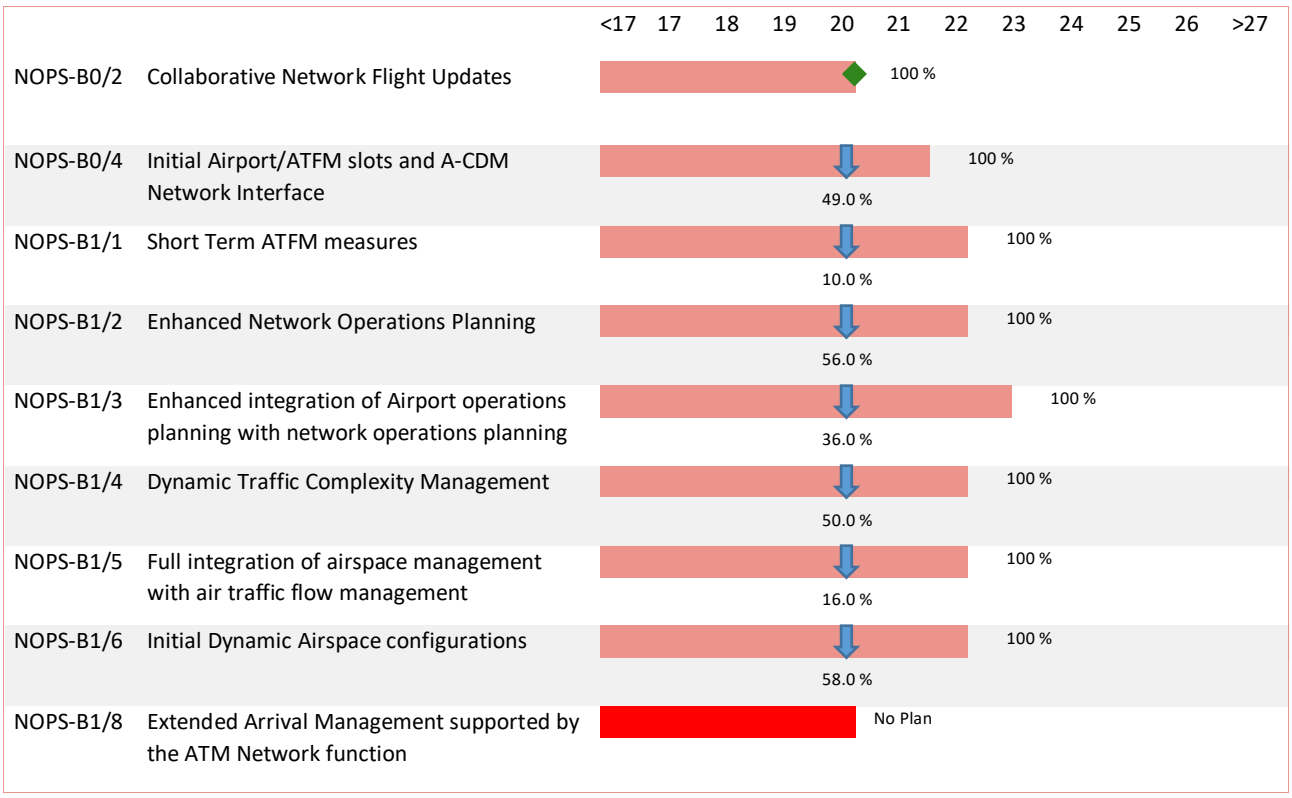
FRTO



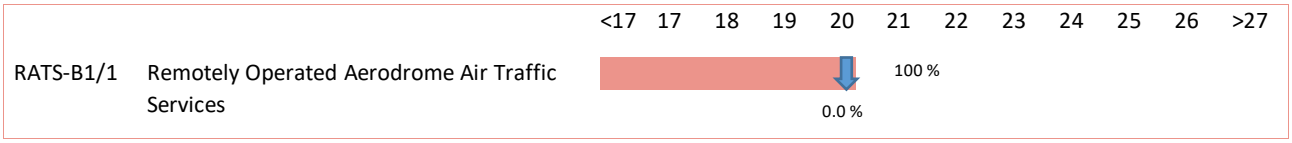
NAVS



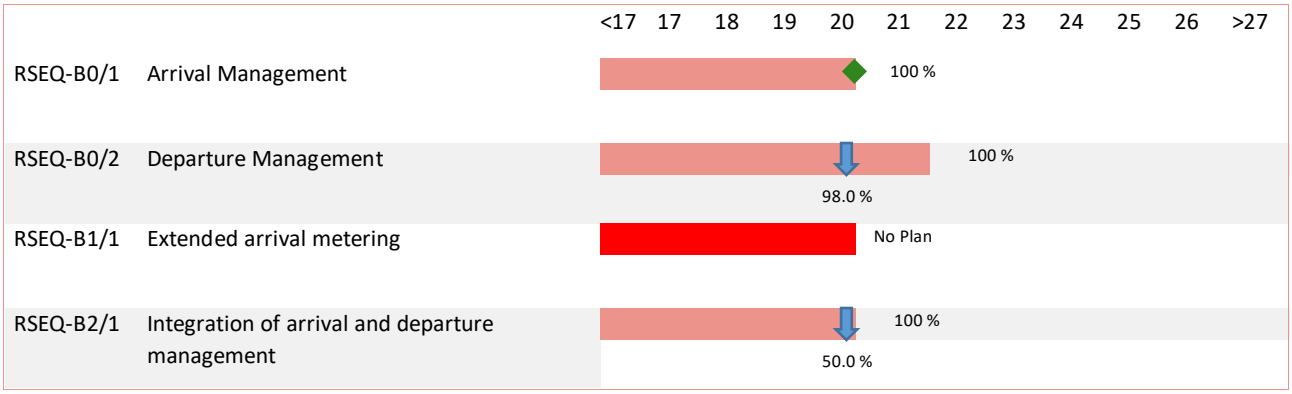
NOPS



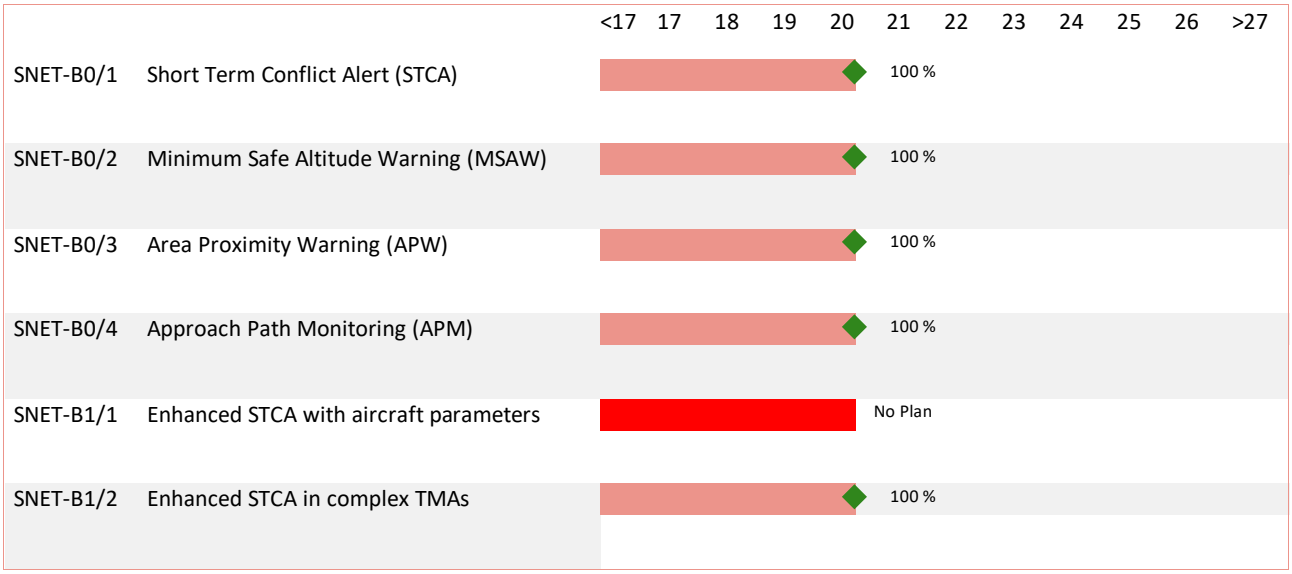
RATS



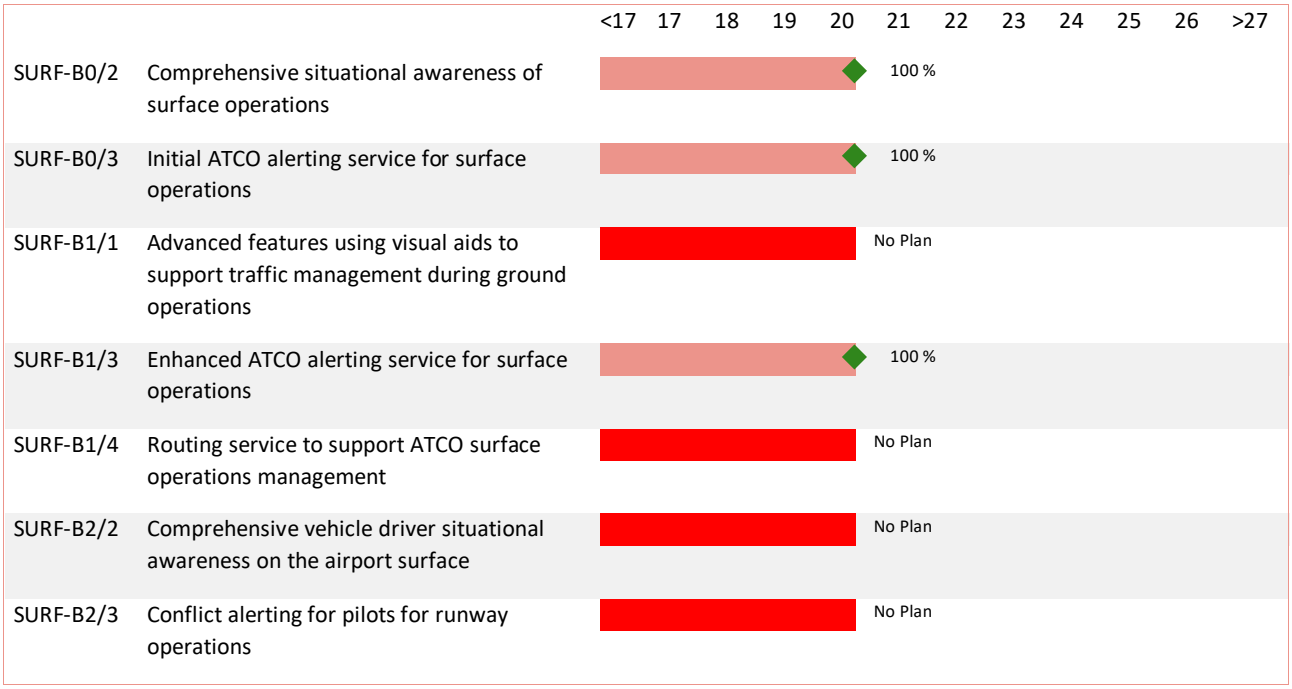
RSEQ



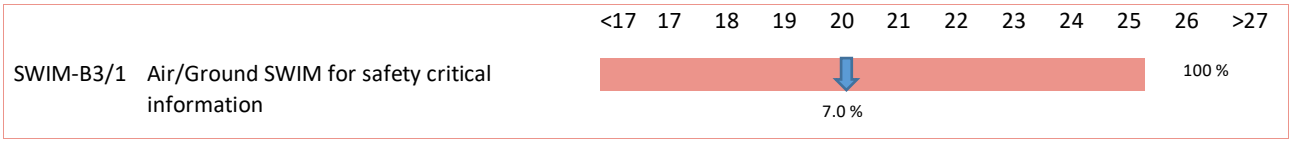
SNET



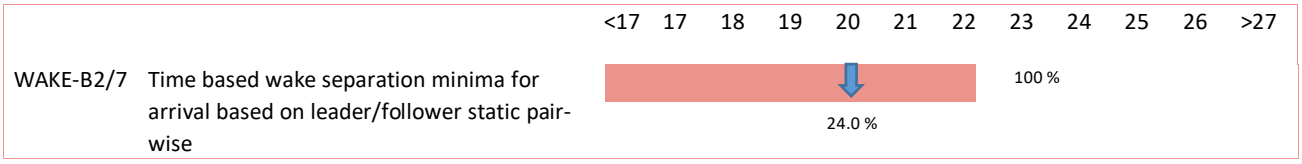
SURF



SWIM



WAKE



5.4. Detailed Objectives Implementation progress (LSSIP)

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

Main Objectives

AOM13.1	**Harmonise Operational Air Traffic (OAT) and General Air Traffic (GAT) Handling** ***Timescales:*** Initial operational capability: 01/01/2012 Full operational capability: 31/12/2018		**100%**	**Completed**
	-			
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)				
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

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

AOM19.1	**ASM Support Tools to Support Advanced FUA (AFUA)** ***Timescales:*** Initial operational capability: 01/01/2011 Full operational capability: 01/01/2022	**39%**	**Ongoing**
	-		
Objective was planned for end 2019 completion in conjunction with NATS as part of the FAB integrated network management function, through use of LARA. NATS software awaiting deployment in Shannon ACC and in line with LoA arrangements with the NM. **Delivery is delayed pending rollout of LARA in IAA as part of the UK/IRL FAB AMC function.** **IAA have a signed LARA Agreement in place with NM and are awaiting a final technical solution for rollout, from NATS(Likely to be a VPN solution)** **Planned implementation including rollout of a LARA PC, for IAA, Q3-2021**			**30/09/2021**

ASP (By:01/2022)				
IAA-ATS Provider	-	-	39%	Ongoing 30/09/2021

AOM19.2	**ASM Management of Real-Time Airspace Data** ***Timescales:*** Initial operational capability: 01/01/2017 Full operational capability: 01/01/2022	**7%**	**Ongoing**
	-		
This objective is being addressed in line with ongoing development of ATM systems within the IAA. In addition data is shared where required to meet stakeholder requirements. **En-route airspace data is managed tactically through the Eurocontrol Network Manager, as this airspace is Free Route airspace which is dynamically sectorised using volumetric sector data agreed with NM.** **For Dublin ACC, airspace changes are under review in support of the introduction of a parallel runway at Dublin Airport which will include consideration of deployment in the ATM system of this objective.** **As a general comment, it is still unclear as to what level this capability will be required by IAA when LARA is expected to deliver much of what's required for this objective. Under review for update in the 2021 Report, i.e. integration of LARA into COOPANS systems.**			**31/12/2021**

ASP (By:01/2022)				
IAA-ATS Provider	This objective is being addressed in line with ongoing development of ATM systems within the IAA. In addition data is shared where required to meet stakeholder requirements. As a general comment, it is still unclear as to what level this capability will be required by IAA when LARA is expected to deliver much of what's required for this objective. Under review for update in the 2021 LSSIP Report, i.e. integration of LARA into COOPANS systems.	-	7%	Ongoing 31/12/2021

AOM19.3	**Full Rolling ASM/ATFCM Process and ASM Information Sharing** ***Timescales:*** Initial operational capability: 01/01/2014 Full operational capability: 01/01/2022		**25%**	**Ongoing**
		-		
Given the low demand within the Irish state for a full rolling ASM/ATFCM process, this is not a high priority. Manual processes for this objective are in place and will be reviewed in line with the NAPB (FUA) requirements. **UK acts as liaison for Ireland with the Network Manager for AUP, UUP. LARA, which will be used to facilitate the tasks Airspace Usage Plan, Rolling Update and Full Management Structure, is due to be implemented Q3-2021 as part of the Prestwick (NATS) cluster.** **Note: IAA and NATS are also part of the Borealis Alliance for FRA. Progress will also be monitored at this forum for this objective.**				**31/12/2021**
ASP (By:01/2022)				
IAA-ATS Provider	UK acts as liaison for Ireland with the Network Manager for AUP, UUP. LARA, which will be used to facilitate the tasks Airspace Usage Plan, Rolling Update and Full Management Structure, is due to be implemented Q3-2021 as part of the Prestwick (NATS) cluster.	-	25%	Ongoing 31/12/2021

AOM19.4	**Management of Pre-defined Airspace Configurations** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 01/01/2022		**58%**	**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.**				**31/12/2021**
ASP (By:01/2022)				
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.	-	75%	Ongoing 31/12/2021

AOM21.2	**Free Route Airspace** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2022		**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:01/2022)				
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 CBDS / Borealis FRA - Introduction of FRA across 9 ANSPs	100%	Completed 31/12/2009

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: 01/01/2021		**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: 01/01/2007 Full operational capability: 01/01/2021		**100%**	**Completed**
EIDW - Dublin Airport				
A-SMGCS Level 2 fully implemented at Dublin Airport.				**30/06/2011**
ASP (By:01/2021)				
IAA-ATS Provider	A-SMGCS Level 2 fully implemented at Dublin Airport.	-	100%	Completed 30/06/2011
APO (By:01/2021)				
DUBLIN Airport Authority	A-SMGCS Level 2 fully implemented at Dublin Airport.	-	100%	Completed 30/06/2011

AOP05	**Airport Collaborative Decision Making (A-CDM)** ***Timescales:*** Initial operational capability: 01/01/2004 Full operational capability: 01/01/2021	**98%**	**Late**
EIDW - Dublin Airport			
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.**			**30/04/2021**
ASP (By:01/2021)			
IAA-ATS Provider	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.	-	100%	Completed 30/10/2017

AOP05	**Airport Collaborative Decision Making (A-CDM)** ***Timescales:*** Initial operational capability: 01/01/2004 Full operational capability: 01/01/2021		**98%**	**Late**
EIDW - Dublin Airport				
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.**				**30/04/2021**
APO (By:01/2021)				
DUBLIN Airport Authority	Dublin Airport Authority (daa) 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.	-	96%	**Late** 30/04/2021

AOP10	**Time-Based Separation** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2024		**24%**	**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 2020-2021. 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 March 2022.**				**31/12/2021**
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 2020-2021 and regulatory approval will be part of this process.	-	10%	Ongoing 31/12/2021
ASP (By:01/2024)				
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.	-	26%	Ongoing 31/12/2021

AOP11	**Initial Airport Operations Plan** ***Timescales:*** Initial Operational Capability: 01/01/2015 Full Operational Capability: 01/01/2021		**36%**	**Late**
EIDW - Dublin Airport				
Implementation will separately addressed following full implementation of ACDM. data 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.				**30/09/2022**
ASP (By:01/2021)				
IAA-ATS Provider	Implementation will be considered in conjunction with the introduction of ACDM. The IAA ANSP is providing the data feed from its ATM system to daa (Dublin Airport Authority) in support of this objective.	-	100%	Completed 31/10/2020
APO (By:01/2021)				
DUBLIN Airport Authority	Implementation will separately addressed following full implementation of ACDM. daa are seeking funding in a collaboration with another European airport for an implementation date by 2021. Also being engaged are the MET service provider for Ireland, MET Eireann.	-	15%	Late 30/09/2022

AOP12	**Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC)** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2021		**100%**	**Completed**
EIDW - Dublin Airport				
EFS system was implemented in Q3 2017 with ATCO training completed and has been fully incorporate as part of the new EIDW Tower project and is for planned delivery by end of 2020.				**31/10/2020**
ASP (By:01/2021)				
IAA-ATS Provider	EFS system was implemented in Q3 2017 with ATCO training completed and has been fully incorporate as part of the new EIDW Tower project and is for planned delivery by end of 2020.	-	100%	Completed 31/12/2018
APO (By:01/2021)				
DUBLIN Airport Authority	EFS system was implemented in Q3 2017 with ATCO training completed and has been fully incorporate as part of the new EIDW Tower project and is for planned delivery by end of 2020.	-	100%	Completed 31/10/2020

AOP13	**Automated Assistance to Controller for Surface Movement Planning and Routing** ***Timescales:*** Initial operational capability: 01/01/2016 Full operational capability: 01/01/2024		**0%**	**Not yet 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.				-
REG (By:01/2024)				
IAA	-	-	0%	Not yet planned -
ASP (By:01/2024)				
IAA-ATS Provider	-	-	0%	Not yet planned -

ATC02.8	**Ground-Based Safety Nets** ***Timescales:*** Initial operational capability: 01/01/2009 Full operational capability: 01/01/2022		**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:01/2022)				
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

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

ATC07.1	**AMAN Tools and Procedures** ***Timescales:*** Initial operational capability: 01/01/2007 Full operational capability: 01/01/2020		**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: 01/01/2022	**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:01/2022)			
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: 01/01/2015 Full operational capability: 01/01/2024		**0%**	**Not yet planned**
	-			
While there is no specific plan commenced, the IAA has responsibility for delivery of traffic from the en-route airspace to state airports in Ireland: EIDW, EICK, EINN and Regional, non-state airports: EIDL, EISG, EIKN, EIKY and EIWF. This task is managed internally with the IAA ATM system for state airports and more manually for non-state airports. **In line with the ATC 15.1 objective, it is the position of the IAA that there is no need for further development in this area, when the geographical location of IAA controlled en-route airspace and the interfaces with this airspace are considered.** **However, a project has commenced to look at a re-organisation of enroute airspace (FIR) to rationalise service delivery to all aerodromes in Ireland (excluding EIDW) and this objective will be considered as part of this project if appropriate and required.**			-
ASP (By:01/2024)				
IAA-ATS Provider	-	-	0%	Not yet planned -

ATC17	**Electronic Dialogue as Automated Assistance to Controller during Coordination and Transfer** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 01/01/2022	**38%**	**Ongoing**
	-		
Engagement with FAB partner NATS for this objective is planned for 2021 to consider OLDI messages to be used operationally and in line with expansion of Cross-border FRA through the Borealis Alliance.			**31/12/2021**
ASP (By:01/2022)			
IAA-ATS Provider	The ATM system is capable to exchange all the OLDI messages referred to in this objective, however no benefit is currently foreseen from their operational implementation. Plans could be reviewed in the future in conjunction with the UK.	-	38%	Ongoing 31/12/2021

COM10	**Migrate from AFTN to AMHS** ***Timescales:*** Initial operational capability: 01/12/2011 Full operational capability: 31/12/2018	**100%**	**Completed**
	-		
IAA system is certified compliant with AMHS. Migration to enhanced AMHS followed testing and coordination with NATS and DSNA. **Objective updated 2020 to review implementation dates and SLOAs updated correctly.**			**31/12/2016**
ASP (By:12/2018)			
Mil. Authority	IAA system is certified compliant with AMHS. Migration to enhanced AMHS will be based on testing and coordination with NATS and DSNA.	-	100%	Completed 31/12/2016
IAA-ATS Provider	-	-	100%	Completed 31/12/2016

COM11.1	**Voice over Internet Protocol (VoIP) in En-Route** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 01/01/2022	**42%**	**Ongoing**
	-		
Communications system upgrade completed during 2018. **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.**			**31/12/2021**
ASP (By:01/2022)			
IAA-ATS Provider	The full migration and implementation planned for 2020 as part of a FAB plan.	Communications - Migration to VOIP and System Wide Information Management (SWIM) capabilities	42%	Ongoing 31/12/2021

COM11.2	**Voice over Internet Protocol (VoIP) in Airport/Terminal** ***Timescales:*** Initial operational capability: 01/01/2013 Full operational capability: 31/12/2023		**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**				**31/12/2021**
ASP (By:12/2023)				
IAA-ATS Provider	-	-	83%	Ongoing 31/12/2021
MET Provider - Irish Department of Transport	-	-	83%	Ongoing 31/12/2021

COM12	**New Pan-European Network Service (NewPENS)** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability (33 ANSPs): 01/01/2025		**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:01/2025)				
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:01/2025)				
DUBLIN Airport Authority	-	-	0%	Not Applicable -

ENV01	**Continuous Descent Operations (CDO)** ***Timescales:*** Initial operational capability: 01/07/2007 Full operational capability: 31/12/2023		**62%**	**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.**				**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.	-	53%	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.	-	100%	Completed 31/12/2012

FCM03	**Collaborative Flight Planning** ***Timescales:*** Initial operational capability: 01/01/2000 Full operational capability: 01/01/2022		**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:01/2022)				
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	**Short Term ATFCM Measures (STAM) - Phase 2** ***Timescales:*** Initial operational capability: 01/11/2017 Full operational capability: 01/01/2022		**10%**	**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, utilising B2B functionality.				**31/12/2021**
ASP (By:01/2022)				
IAA-ATS Provider	-	-	10%	Ongoing 31/12/2021

FCM05	**Interactive Rolling NOP** ***Timescales:*** Initial operational capability: 01/09/2013 Full operational capability: 01/01/2022		**56%**	**Ongoing**
	-			
Dialogue is on-going between NATS and the IAA with a view to approval of a LARA connection with UK IAA LARA being connected to the Swanwick server. This process is being addressed jointly by Ireland the UK as FAB partners through the IRL-UK FAB at AMC level. The Irish Military are also included in this process. **The implementation date was planned for Q4-2020, however due to constraints as a result of COVID-19, this objective is expected to be delivered by end Q2-2021.**				**31/12/2021**
ASP (By:01/2022)				
IAA-ATS Provider	The implementation date was planned for Q4-2020, however due to constraints as a result of COVID-19, this objective is expected to be delivered by end Q2-2021.	-	88%	Ongoing 31/12/2021
APO (By:01/2022)				
DUBLIN Airport Authority	Will be considered after A-CDM implementation	-	25%	Ongoing 31/12/2021

FCM06	**Traffic Complexity Assessment** ***Timescales:*** Initial operational capability: 01/01/2015 Full operational capability: 01/01/2022		**50%**	**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.				**31/12/2021**
ASP (By:01/2022)				
IAA-ATS Provider	Objective will be achieved in planned timeframe	-	50%	Ongoing 31/12/2021

INF07	**Electronic Terrain and Obstacle Data (eTOD)** ***Timescales:*** Initial operational capability: 01/11/2014 Full operational capability: 01/01/2019		**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

INF08.1	**Information Exchanges using the SWIM Yellow TI Profile** ***Timescales:*** Initial operational capability: 01/01/2018 Full operational capability: 01/01/2025		**7%**	**Ongoing**
	-			
Work is ongoing by both the ANSP and MET for this objective. Although some progress has been made since 2018-2019, there is no further progress to report for the 2019 LSSIP report. **Update 2020: There is no update for the 2020 report.**				**31/12/2024**
ASP (By:01/2025)				
IAA-ATS Provider	-	-	11%	Ongoing 31/12/2024
MIL (By:01/2025)				
Mil. Authority	-	-	0%	Not yet planned -
APO (By:01/2025)				
IAA-ATS Provider	-	-	8%	Ongoing 31/12/2021
MET Provider - Irish Department of Transport	-	-	10%	Ongoing 31/12/2024

ITY-ACID	**Aircraft Identification** ***Timescales:*** Entry into force of the Regulation: 13/12/2011 System capability: 02/01/2020		**92%**	**Late**
	-			
Enhanced MODE implemented on some IAA radar systems was completed Q4 2016. Full system will be 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)**			**31/12/2021**
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. 22020: 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)	-	92%	**Late** 31/12/2021

ITY-ADQ	**Ensure Quality of Aeronautical Data and Aeronautical Information** ***Timescales:*** Entry into force of the regulation: 16/02/2010 Article 5(4)(a), Article 5(4)(b) and Article 6 to 13 to be implemented by: 30/06/2013 Article 4, Article5(1) and Article 5(2), Article 5(3) and Article 5(4)(c) to be implemented by: 30/06/2014 All data requirements implemented by: 30/06/2017	**81%**	**Late**
	-		
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.**		**31/12/2021**
REG (By:06/2017)			
IAA	-	-	92%	**Late** 31/12/2021
ASP (By:06/2017)			
IAA-ATS Provider	-	-	74%	**Late** 31/12/2021
APO (By:06/2017)			
DUBLIN Airport Authority	-	-	85%	**Late** 31/12/2021

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.				**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

ITY-FMTP	**Common Flight Message Transfer Protocol (FMTP)** ***Timescales:*** Entry into force of regulation: 28/06/2007 All EATMN systems put into service after 01/01/09: 01/01/2009 All EATMN systems in operation by 20/04/11: 20/04/2011 Transitional arrangements: 31/12/2012 Transitional arrangements when bilaterally agreed between ANSPs: 31/12/2014		**100%**	**Completed**
-				
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 awaiting readiness from partner.**				**30/06/2016**
ASP (By:12/2014)				
IAA-ATS Provider	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 awaiting readiness from partner.	FDP - COOPANS	100%	Completed 30/06/2016
MIL (By:12/2014)				
Mil. Authority	Military do not provide GAT services.	-	0%	Not Applicable -

ITY-SPI	**Surveillance Performance and Interoperability** ***Timescales:*** Entry into force of regulation: 13/12/2011 ATS unit operational capability: 12/12/2013 EHS and ADS-B Out in transport-type State aircraft : 07/12/2020 ELS in transport-type State aircraft : 07/12/2020 Ensure training of MIL personnel: 07/12/2020 Retrofit aircraft capability: 07/12/2020		**100%**	**Completed**
-				
All New (upgraded) IAA Surveillance Radar sites have been upgraded to Mode S, with the exception of the Dublin Radar 2 site. **This enables use of DAPs within the ATM system.**				**31/12/2015**
REG (By:02/2015)				
IAA	Safety Assessment by the ANSP submitted and accepted by NSA.	-	100%	Completed 31/12/2014
ASP (By:02/2015)				
IAA-ATS Provider	-	Surveillance & Navigation - Radar replacement	100%	Completed 31/12/2013
MIL (By:12/2020)				
Mil. Authority	Concerned military aircraft all equipped	-	100%	Completed 31/12/2015

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	-	-	100%	Completed 13/12/2020
IAA-ATS Provider	-	-	100%	Completed 06/12/2018

NAV03.2	**RNP 1 in TMA Operations** ***Timescales:*** Start: 07/08/2018 All SIDs and STARs per instrument RWY, at PCP airports: 25/01/2024 One SID and STAR per instrument RWY, where established: 25/01/2024 All SIDs and STARs per instrument RWY, where established: 06/06/2030		**20%**	**Ongoing**
-				
RNP 1 Procedures partially implemented in State TMAs. Further development planned during 2018 for rollout in the period 2019-2021. Engagement with Dublin-based AOs for implementation as required and in support for new parallel runway deployment at Dublin Airport.				**31/12/2021**
REG (By:06/2030)				
IAA	-	-	100%	Completed 30/08/2020
ASP (By:06/2030)				
IAA-ATS Provider	-	-	9%	Ongoing 31/12/2021
IAA	-	-	5%	Ongoing 31/12/2021

NAV10	**RNP Approach Procedures to instrument RWY** ***Timescales:*** Initial operational capability: 01/06/2011 Instrument RWY ends without precision approach in EU SES States, at Non-PCP airports: 03/12/2020 Instrument RWY ends served by precision approach (including PCP airports): 25/01/2024 Instrument RWY ends without precision approach in EU SES States, at PCP airports: 25/01/2024		**85%**	**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.**			**31/12/2021**
REG (By:01/2024)				
IAA	Approval for remaining RNP IAPs expected by end Q2-2021	-	70%	Ongoing 31/12/2021

ASP (By:01/2024)				
IAA-ATS Provider	Update 2020:IAA ATS Provider responsible fort IFPs at EIDW, EICK and EINN EIDW: 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 fort RWYs 06 and 24 temporarily withdrawn for re-design. Re-publication planned in 2021.	-	89%	Ongoing 31/12/2021
DUBLIN Airport Authority	-	-	75%	Ongoing 31/12/2021
All Airports	-	-	85%	Ongoing 31/12/2021

NAV12	**ATS IFR Routes for Rotorcraft Operations** ***Timescales:*** Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes above FL150, where established.: 03/12/2020 One rotorcraft RNP0.3, RNP01 or RNAV1 SID and STAR per instrument RWY, where established.: 25/01/2024 Rotorcraft RNP0.3, RNP1 or RNAV1 ATS routes below FL150, where established.: 25/01/2024 All rotorcraft RNP0.3, RNP01 or RNAV1 SIDs and STARs per instrument RWY, where established.: 06/06/2030	**10%**	**Ongoing**
	-		
This objective is being reviewed in line with the PBN Policy and associated implementation dates.			**31/12/2024**
REG (By:06/2030)			
IAA	-	70%	Ongoing 31/12/2024
ASP (By:06/2030)			
IAA-ATS Provider	-	2%	Ongoing 31/12/2023
All Airports	-	10%	Ongoing 31/12/2023

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

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-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.			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.			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 becomes operational.			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.			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.			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-ordinating at a distance from socially distance sector ATCOs. Project is also being progressed through the "NM Excellence Programme."			31/12/2021

ATC19	Enhanced AMAN-DMAN integration *Applicability and timescale: Local*	50%	Ongoing
-			
Being addressed in line with Implementation Objectives ATC 15.1 and ATC 15.2			31/12/2023

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.			31/12/2021

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.			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

Other Focal Points	Organisation	Name
Focal Point for NETSYS	IAA	Peter KAVANAGH
Focal Point for NETSYS	IAA	Joe RYAN
Focal Point for SUR	IAA	Charlie O LOUGHLIN

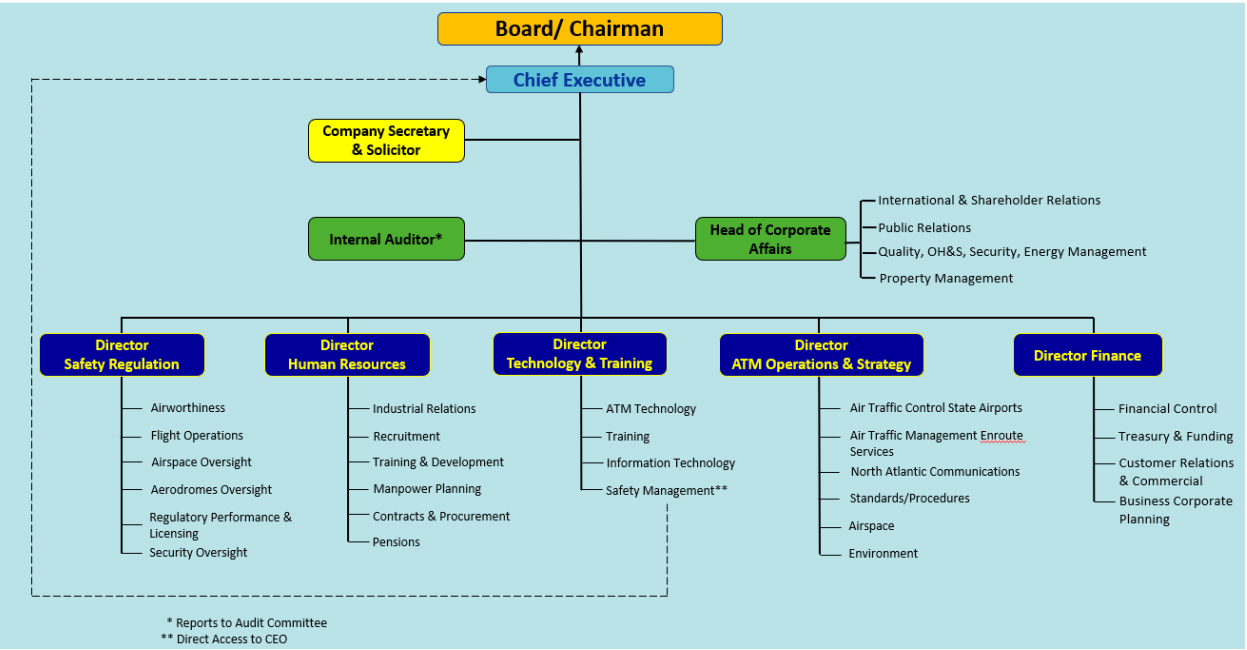
B. National stakeholders organisation charts

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

Note: *See Section 1.2-The ANSP and the Competent Authority* Civil Aviation Authority *(Civil Aviation Authority) roles currently all part of the IAA will be separated as two entities in 2021. The 2021 LSSSIP Report will reflect these new organisational structures.*

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	

IAA Organisation Structure



C. Implementation Objectives' links with other plans

The table below (extracted from the MPL3 Progress Plan 2020) 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	-	EAI
	COM10 - Migration from AFTN to AMHS	-	-	COMI B0/7	-	-	-	EAI
	COM11.1 - Voice over Internet Protocol (VoIP) in En-Route	-	3.1.4 3.2.1	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	-	6.1.1 6.1.3 6.1.4	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
	ITY-SPI - Surveillance performance and interoperability	-	-	ASUR B0/1 ASUR B0/3	RMT.0679 RMT.0519	SO8/3 SO8/4	-	EAI
	NAV10 - RNP Approach Procedures to instrument RWY	#103	1.2.1 1.2.2	APTA B0/1 APTA B1/1 NAVS B0/2	RMT.0639 RMT.0445	SO6/5	-	AATS
	NAV11 - Precision Approach using GBAS CAT II/III based on GPS L1	#55	-	NAVS B1/1	-	-	-	HPO
	AOM13.1 - Harmonise OAT and GAT handling	-	-	-	-	SO6/2	-	OANS

iN	AOP11 - Initial Airport Operations Plan	#21	2.1.4	NOPS B1/3	-	SO6/2	-	HPAO
	AOP17 – Provision/integration of DPI to NMOC	#61	-	NOPS B0/4	-	-	-	HPAO
	COM12 - NewPENS	-	5.1.2 5.2.1	COMI B1/1	-	SO2/3 SO2/4 SO8/3 SO8/4	-	EAI
	FCM03 - Collaborative flight planning	-	4.2.3	NOPS B0/2	-	SO4/2 SO5/1 SO5/6	AM-1.14	OANS
	FCM04.2 - STAM phase 2	#17	4.1.2	NOPS B1/1	-	SO4/3 SO5/4	AM-1.11	OANS
	FCM05 - Interactive rolling NOP	#20, #21	4.2.2 4.2.4	NOPS B1/2	-	SO2/1 SO2/2 SO2/3 SO2/4	AM-1.12	OANS
	FCM06 - Traffic Complexity Assessment	#19	4.4.2	NOPS B1/4	-	SO4/3 SO5/4	AM-1.13	OANS
	FCM09 - Enhanced ATFM Slot swapping	#56	-	NOPS B1/7	-	SO6/1	-	OANS
	INF08.1 - Information Exchanges using the SWIM Yellow TI Profile	#35, #46	5.1.3, 5.1.4, 5.2.1, 5.2.2, 5.2.3, 5.3.1, 5.4.1, 5.5.1, 5.6.1	AMET B2/4 DAIM B2/1 SWIM B3/1	-	SO2/4 SO2/5 SO5/2 SO5/5	AM-1.5	EAI
	INF08.2 - Information Exchanges using the SWIM Blue TI Profile	#28, #46	5.1.3, 5.1.4, 5.2.1, 5.2.2, 5.2.3, 5.6.2	SWIM B3/1, TBO B3/1	-	SO5/2SO5/5	AM-9.1	EAI
dS	INF07 - Electronic Terrain and Obstacle Data (e-TOD)	-	1.2.2	DAIM B1/4 DAIM B1/4	RMT.0703 RMT.0722	SO2/5	-	EAI
	INF09 - Digital Integrated Briefing	#34		DAIM B1/7, AMET B1/4	-	SO2/5	-	EAI
	ITY-ADQ - Ensure quality of aeronautical data and aeronautical information	-	1.2.2	-	RMT.0722 RMT.0477	SO2/5	-	EAI

U-s	-	-	-	-	-	-	-	-
vS	AOP14 – Remote Tower Services	#12, #71, #52, #13	-	RATS B1/1	RMT.0624	-	-	HPAO
ATp	AOP04.1 - A-SMGCS Surveillance (former Level 1)	#70	2.2.1	SURF B0/2	MST.029	SO6/6	-	HPAO
	AOP04.2 - A-SMGCS RMCA (former Level 2)	-	2.2.1	SURF B0/3	MST.029	SO6/6	-	HPAO
	AOP05 - Airport CDM	#106	2.1.1 2.1.3	ACDM B0/2 NOPS B0/4 RSEQ B0/2	-	SO6/4	-	HPAO
	AOP10 - Time Based Separation	#64	2.3.1	WAKE B2/7	-	SO6/5	-	HPAO
	AOP12 - Improve RWY and Airfield safety with CATC detection and CMAC	#02	2.1.2 2.5.1	SURF B1/3	MST.029	SP6/6	-	HPAO
	AOP13 - Automated assistance to Controller for Surface Movement planning and routing	#22 #53	2.4.1	SURF B1/4	MST.029	SO6/6	-	HPAO
	AOP15 - Safety Nets for vehicle drivers	#04	-	SURF B2/2	MST.029	-	-	HPAO
	AOP16 - Guidance assistance through airfield lighting	#47	-	SURF B1/1	MST.029	-	-	HPAO
	AOP18 - Runway Status Lights	#01	-	SURF B2/2	MST.029	-	-	HPAO
	ATC07.1 - Arrival management tools	-	1.1.1	RSEQ B0/1	-	SO4/1	-	AATS
	ATC19 - Enhanced AMAN-DMAN integration	#54	-	RSEQ B2/1	-	SO6/5 SO4/1	-	AATS
	ENV01 – Continuous Descent Operations	-	-	APTA B0/4	-	SO6/5	-	AATS
	ENV02 – Airport Collaborative Environmental Management	-	-	-	-	-	-	HPAO
	ENV03 – Continuous Climb Operations	-	-	APTA B0/5	-	SO6/5	-	AATS

	NAV03.1 – RNAV1 in TMA Operations	#62	-	APTA B0/2	RMT.0639 RMT.0445	SO6/5	-	AATS
	NAV03.2 – RNP1 in TMA Operations	#09, #51	1.2.3 1.2.4	APTA B1/2	RMT.0639 RMT.0445	SO6/5	-	AATS
	SAF11 - Improve runway safety by preventing runway excursions	-	-	-	MST.007 RMT.0570 RMT.0703	-	-	HPAO
dA	AOM19.1 - ASM tools to support A-FUA	#31	3.1.1	FRTO B0/2	-	SO3/2 SO3/3	AM-1.8	OANS
	AOM19.2 - ASM management of real-time airspace data	#31	3.1.2	FRTO B1/3 NOPS B1/5	-	SO3/2 SO3/3	AM-1.8	OANS
	AOM19.3 - Full rolling ASM/ATFCM process and ASM information sharing	#31	3.1.3	NOPS B1/5 FRTO B1/3	-	SO3/2 SO3/3	AM-1.8	OANS
	AOM19.4 – Management of Pre-defined Airspace Configurations	#31	3.1.4	NOPS B1/6 FRTO B1/4	-	SO3/2 SO3/3	-	OANS
	AOM21.2 - Free Route Airspace	#33, #66	3.2.1 3.2.4	FRTO B1/1	-	SO3/1 SO3/4	AM-1.6 AM-1.10 AM-5.1	AATS
	ATC12.1 - MONA, TCT and MTCD	#27, #104	3.2.1	FRTO B1/5	-	SO3/1 SO4/1	AM-1.15 AM-5.1	AATS
	ATC15.1 - Initial extension of AMAN to En-route	-	1.1.2	-	-	SO4/1	-	AATS
	ATC15.2 - Extension of AMAN to En-route	#05	1.1.2	RSEQ B1/1 NOPS B1/8	-	SO4/1	AM-1.3	AATS
	ATC17 - Electronic Dialog supporting COTR	-	3.2.1	-	-	SO3/1 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

	ATC02.9 - Enhanced STCA for TMAs	#60	-	SNET B1/2	MST.030	SO4/1	-	AATS
	ATC20 – Enhanced STCA with DAP via Mode S EHS	#60	-	SNET B1/1	-	SO7/2	-	AATS
M3	NAV12 – ATS IFR Routes for Rotorcraft Operations	#113	-	APTA B0/6	MST.031	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.

The specific description of the new 34 SESAR Solutions implemented in a voluntary way introduced in 2020 are hosted on the LSSIP SharePoint : New SESAR Solutions non-committed - Description

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

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
CNS CNS infrastructure and services				
#55	Precision approach using GBAS Category II/III	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.	N	Y: 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.

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

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
#102	Aeronautical mobile airport communi-cation system (AeroMACS)	The aeronautical mobile airport communication system (AeroMACS) offers a solution to offload the saturated VHF datalink communications in the airport environment and support new services. The technical solution AeroMACS is based on commercial 4G technology and uses the IEEE 802.16 (WiMAX) standard. Designed to operate in reserved (aeronautical) frequency bands, AeroMACS can be used for ANSPs, airspace users and airport authority communications, in compliance with SESAR's future communication infrastructure (FCI) concept. AeroMACS is an international standard and supports globally harmonised and available capabilities according to ICAO Global Air Navigation Plan (GANP).	N	N
#109	Air traffic services (ATS) datalink using Iris Precursor	The Iris Precursor offers a viable option for ATS datalink using existing satellite technology systems to support initial four-dimensional (i4D) datalink capability. The technology can be used to provide end-to-end air–ground communications for i4D operations, connecting aircraft and air traffic management ground systems.	N	N
#110	ADS-B surveillance of aircraft in flight and on the surface	The SESAR solution consists of the ADS-B ground station and the surveillance data processing and distribution (SDPD) functionality. The solution also offers mitigation techniques against deliberate spoofing of the ground system by outside agents. These techniques can also be used to cope with malfunctioning of avionics equipment. SESAR has contributed to the relevant standards, such as EUROCAE technical specifications, incorporating new functionalities developed for the ADS-B ground station, ASTERIX interface specifications as well as to the SDPD specifications.	N	N
#114	Composite Surveillance ADS-B / WAM	By allowing the use of ADS-B data that has been validated against data derived in parallel by a WAM system, the system can help to reduce the number of interrogations and number of replies and therefore reduce the 1030/1090 MHz RF load and improve spectrum efficiency. It achieves this through the integration of validated data items into the WAM channel, thereby preventing a need to re-interrogate the data item. Since the two surveillance layers share hardware components, the system offers improved cost efficiency. Furthermore, the use of the system contributes to an improved security by successfully mitigating associated ADS-B threats.	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		SESAR has contributed to the relevant standards, such as EUROCAE technical specifications for WAM and ADS-B that are implementing this "composite" concept.		
PJ.14-02-06	AeroMACs integrated with ATN, Digital Voice and Multilink	The SESAR Solution PJ14.02.06 ("AeroMACS integrated with ATN, Digital Voice and 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.	N	N
PJ.14-03-04	RNP1 reversion based on DME-DME	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.	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
#18	Calculated take-off time (CTOT) and target time of arrival (TTA)	Target times (TT) shall be applied to selected flights for ATFCM purposes to manage ATFCM at the point of congestion rather than only at departure. Where available, the target times of arrival (TTA) shall be derived from the airport operations plan (AOP). TTAs shall be used to support airport arrival sequencing processes in the en-route phase. NM's systems shall be able to adjust CTOTs based on refined and agreed TTAs at the destination airport; TTAs shall be integrated into the AOP for subsequent refinement of the NOP. Flight data processing systems may need to be adapted in order to process downlinked trajectory data (ADS-C EPP). In a first step, NM system will transmit calculated target times (TT) at the most penalising regulation reference point in addition to CTOT to all concerned users. Those users should manage this new feature so potential system upgrades should be foreseen.	Y: Dublin Airport (daa)	Y (daa)
#57	User-driven prioritisation process (UDPP) departure	Airspace Users are allowed to change among themselves (via the pre-departure management process in CDM airports) the priority order of flights in the pre-departure sequence. The departure time will be automatically communicated/coordinated with the Network Management Function (NMF) via the DPI message as described in the A-CDM concept.	N	N
#67	AOC data increasing trajectory prediction accuracy	Europe's vision to achieve high-performing aviation by 2035 builds on the idea of trajectory-based operations – meaning that aircraft can fly their preferred trajectory while minimising constraints due to airspace and service configurations. SESAR has introduced an early version, which makes use of flight planning data sourced from airline operational control (AOC) to help controllers optimise aircraft flight paths. This solution represents an initial step towards the extended flight plan solution and flight and flow information for a collaborative environment (FF-ICE).	N	N
PJ.09-03-02	Collaborative network management functions	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	Y: Dublin Airport (daa)	Y (daa)

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		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.		
PJ.15-01	Sub-regional Demand Capacity Balancing Service	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 appropriate tactical intervention in support of AU and AO operations.	N	N
PJ.17-01	SWIM TI purple profile for 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.	N	Y
		dS Digital AIM and MET services		
#34	Digital integrated briefing	This objective provides digital AIS data, in particular Digital NOTAM (encoded as "events" in AIXM format), and digital MET data (METAR, TAF, SIGMET in the ICAO iWXXM format) to pilots and dispatchers in the form of digital briefing products and services, which are merged (joint) with the geographical and planned flight trajectory information, and presented (visualised) in a graphical way. The digital integrated briefing is currently targeted for ground use (FOC/WOC, pre-flight briefing rooms and ARO offices). Some enablers (Digital NOTAM and digital MET data) support the use in the cockpit, in all phases of flight, while enablers for transmission into the cockpit are not yet mature (see IS-0206 Digital Integrated Briefing during flight execution phase).	N	N: Being addressed internally by the ANSP in the provision of AIS services

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
PJ.15-10	Static aeronautical data service	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 direct access to quality assured and consistent aeronautical information.	N	N: Being addressed internally by the ANSP in the provision of AIS services
PJ.15-11	Aeronautical digital map 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.	N	N: Being addressed internally by the IAA Aviation Regulator
PJ.18-04a	Aeronautical information management (AIM) information	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 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.	N	N: Being addressed internally by the ANSP in the provision of AIS services

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PJ.18-04b-01	Meteorological (MET) information-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.	Y	Y: Being addressed by MET Eireann (an Reg. (EU) 2017-3737 certified entity)
PJ.18-04b-02	Meteorological information (MET) services-Cb-global	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 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.	Y	Y: Being addressed by MET Eireann (an Reg. (EU) 2017-3737 certified entity)
ATp Airport and TMA performance				
#11	Continuous descent operations (CDO) using point merge	Progressive implementation of procedures for Continuous Descent Operations (CDO) and Continuous Climb Operations (CCO) in higher density traffic or to higher levels, optimised for each airport arrival/departure procedure	N	Y
#23	D-TAXI service for controller-pilot datalink communications (CPDLC) application	Use of data link communications between the Tower Controllers and the flight crew during surface movement. It is based on the D-TAXI service from the CPDLC application, as standardised by RTCA SC214/EUROCAE WG78 (DO-350 & DO-351). It also includes the access to this service for end users, through the Tower CWP for the ATCO and through the aircraft DCDU for the flight crew.	N	N
#48	Virtual block control in low visibility	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	N	N

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	procedures (LVPs)	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	This new procedure design builds upon precision navigation technology (P-RNAV concept) for merging traffic into a single entry point, which allows efficient integration and sequencing of inbound traffic together with Continuous Descent Approaches (CDA).	Y	N
#108	Arrival Management (AMAN) and Point Merge	Point Merge in high density environment and complex Extended TMA (E-TMA) sectors replaces radar vectoring with a more efficient and simplified traffic synchronisation mechanism that reduces communication workload and increases collective traffic predictability.	N	N: Being addressed by IAA ANSP
#116	De-icing management tool	The solution increases the accuracy of information related to when the procedure is going to take place, how long it will take and when the aircraft will be ready to taxi for departure, which is currently calculated by predetermined estimates. The solution means that air traffic controllers no longer need to work without situational awareness of de-icing activities and needing to make their own estimates of when aircraft are ready for departure. The solution envisages that de-icing operations are no longer characterised by the A-CDM concept as 'adverse conditions', i.e. a state that is in need of collaborative recovery procedures, but rather a part of normal operations in the winter period. The DIMT allows for the scheduling and monitoring of de-icing operations. It is an internet browser-based tool that addresses three distinct procedures for de-icing: - Remote de-icing, which occurs at a specific location on the airport away from the parking stand; - On-stand de-icing, which occurs just before the aircraft leaves its stand; and - After-push de-icing, which occurs after the aircraft has pushed back from the stand and is positioned to start taxiing after de-icing.	N	N
#117	Reducing Landing Minima in Low Visibility Conditions using	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	N	N

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	Enhanced Flight Vision Systems (EFVS)	provide operational credit in approach as permitted per EASA EU 965/2012 and its coming amendments (NPA 2018-06 AWO) to face to Low visibility conditions. Enabling EFVS operations with operational credits provides a greater availability of suitable destination and alternate aerodromes during periods of reduced visibility. This effectively reduces the number of weather-related delays, cancellations or diversions of flights to CAT II/III 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 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	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	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		from the lead aircraft crossing the deceleration fix.		
PJ.02-01-02	Optimised Separation Delivery for Departure	"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 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.	N	N
PJ.02-01-03	Weather-Dependent Reductions of Wake Turbulence Separations for 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.	N	N
PJ.02-01-04	Wake Turbulence Separations (for Arrivals) based on Static Aircraft Characteri-stics	Static PairWise Separation for arrivals (S-PWS-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.	N	N
PJ.02-01-05	Weather-Dependent Reductions of	"Weather-Dependent Reductions of Wake Turbulence Separations for Final Approach" aims at the optimisation of the ICAO wake	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
	Wake Turbulence Separations for Final Approach	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 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 Departures) based on Static Aircraft Characteri-stics	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.	N	N
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 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.	N	N
PJ.02-03	Minimum-pair separations based on 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).	N	N

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		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 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	Trajectory based Integrated Runway Sequence	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.	N	N: Being addressed by the IAA ANSP
PJ.02-08-02	Runway Manager	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.	N	N

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		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	Increased Runway Throughput based on local ROT characterization (ROCAT)	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 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.	Y: Dublin Airport (daa)	Y: Dublin Airport (daa)
PJ.03a-04	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. • Use of active sensor with improved performance to overcome the observed limitation of EVS legacy sensors.	N	N

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		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	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).	N	N
PJ.15-02	E-AMAN Service	The E-AMAN Common Service provides functions necessary to operate Arrival Management with an extended horizon in an environment where multiple actors are 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.	N	N
dA Fully dynamic and optimised airspace				
#10	Optimised route network using advanced RNP	Based on Advanced-RNP navigation specification, design of optimised routes e.g. spaced parallel routes, Fixed Radius Transition (FRT) and Tactical Parallel Offset (TPO) further enhanced by onboard performance monitoring	N	Y: Being addressed by IAA ANSP and Aviation Regulator

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		and alerting and the execution of more predictable aircraft behaviour		
#118	Basic EAP (Extended ATC Planning) function	The basic Extended ATC Planner aims at bridging the gap between Air Traffic Flow and Capacity Management (ATFCM) and Air Traffic Control (ATC) providing real-time and fine-tuning measures to solve ATFCM hotspots, and to perform early measures to alleviate complexity closest to ATC activities. The solution consists of an automated tool and associated procedures supporting the basic communication between the Local DCB position and the Controllers' Work Positions allowing the EAP and the ATC team in identifying, assessing and resolving local complexity situations. The basic EAP relies on a real time integrated process for managing the complexity of the traffic with capability to reduce traffic peaks through early implementation of fine-tuned solutions to solve workload imbalances at the local level, compatible with the short-term timeframe of execution phase of the flights.	N	N
PJ.06-01	Optimised traffic management to enable free routing in high and very high complexity environments	"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.	N	N
PJ.10-01a1	High Productivity Controller Team Organisation in En-Route (including eTMA) (1PC – 2ECs)	"High Productivity Controller Team Organisation in 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	N	Y :Already partially implemented in Shannon FIR/UIR (Enroute) as recorded in the 2020 Report

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		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.		
		TBO Trajectory -based operations		
#06	Controlled time of arrival (CTA) in medium-density/ medium-complexity environments	The CTA (Controlled Time of Arrival) is an ATM imposed time constraint on a defined point associated with an arrival runway, using airborne capabilities to improve arrival management. When a time constraint is needed for a flight, the ground system may calculate a CTA as part of the arrival management process, and then it may be proposed to the flight for achievement by avionics within required accuracy. Airborne information may be used by the ground system in determining the CTA (e.g. ETA min/max) and in monitoring the implementation of the CTA.	N	N
#08	Arrival management into multiple airports	The system provides support to coordination of traffic flows into multiple airports to enable a smooth delivery to the runways. The 'Center Manager' (CMAN) which accompanies the AMANs of the airports generates a combined planning for several arrival streams into different airports by calculating the sequence of aircraft flying towards an area where their routes intersect. By imposing an adequate spacing of the aircraft in that area, a Time To Lose (TTL) for the appropriate upstream E-TMA sector is calculated to meet this constraint. Both AMAN-TTL for the runway and TTL for the E-TMA sector are superimposed and presented to the upstream en-route sector controllers.	N	N
#100	ACAS Ground Monitoring and Presentation System	The ACAS provides resolution advisories (RAs) to pilots in order to avoid collisions. Controllers rely on pilots to report RAs by radio as they occur in accordance with ICAO regulations. However these reports can come late, incomplete or are, absent in some instances. This solution consists of a set of monitoring stations and a server system, which enable the continuous monitoring and analysis of ACAS RAs	N	N

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		and coordination messages between airborne units from the ground.		
#101	Extended hybrid surveillance	This solution consists of an enhanced TCAS capability, adding passive surveillance methods and reducing the need for active Mode-S interrogations. By making fewer active interrogations, this solution allows the aircraft to significantly reduce the usage of the 1090 MHz frequency.	N	N
PJ.07-01-01	AU Processes for Trajectory Definition	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.	N	N
PJ.10-02a1	Integrated tactical and medium Conflict Detection & Resolution (CD&R) services and Conformance Monitoring tools for En-Route and TMA	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 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	N	N

SESAR Solution Code	SESAR Solution Title	Solution Description	Has the SESAR Solution been implemented in your State? (Y-N) - if "Yes" please report where	Are there implementation plans in your State for the SESAR Solution? (Y-N-N/A) - If "Yes" please report when and where it is planned - If "N/A" please justify
		additional alerts, such as rate monitoring.		
PJ.18-02c	eFPL supporting SBT transition to 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.	N	N
		VS Virtualisation of service provision		
PJ.05-02	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.	Y: Cork and Shannon Airports	Y: Cork and Shannon Airports
PJ.16-03	Enabling rationalisation of 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	N	N

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		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.		
M3 Multimodal mobility and integration of all airspace users				
PJ.02-05	Independent rotorcraft operations at the 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.	N	N: Being addressed by IAA Aviation Regulator
PJ.01-06	Enhanced rotorcraft operations and GA operations in the 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.	N	N

E. Surveillance (SUR)

This Annex is not published in the LSSIP Level 1, but is available in the LSSIP Level 2, which can be made available upon request to Focal Point and/or Contact Person.

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
APW	Area Proximity Warning
ARTAS	Advanced Radar Tracker and Server
CNS	Communication, Navigation and Surveillance
CTA	Control Area
DMAN	Departure Management
daa	Dublin Airport Authority
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
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