



Standardisation and Regulation support to CP1 deployment

SESAR Deployment Programme 2021

Annex

Final Draft

FPA MOVE/E2/2014-717/SESAR FPA

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Annex – Standardisation and Regulation support to CP1 deployment

The **Standardisation and Regulation Annex** is a key document, developed with the primary objective of providing an accurate **snapshot** of the current **state of play of Standards and Regulation** mapped with the 25 Families in the SESAR Deployment Programme (SDP). It also provides information on the on-going work related to supporting material and regulation.

The Annex is a **living document that will be regularly updated** throughout SESAR Deployment Programme's life time.

The presentation of information included within Annex B follows the "ATM Concept Lifecycle Model", where V0-V3 are covered by R&D under responsibility of SESAR Joint Undertaking (SJU). The subsequent V4 (Industrialisation) includes development of material supporting deployment and development of products by manufacturing industry and Very Large Scale Demonstrations (VLD) are part of V3 but conducted during V4 as support to industrialisation. Deployment starts during or after V4, in V5, and its coordination is under SESAR Deployment Manager (SDM) responsibility.

Annex B is intended to be used as a common reference for the implementation of the SESAR Deployment Programme and a useful instrument for liaising with organisations and bodies responsible for developing guidance material, specifications, standards (all normally referred to as "standards"), certification documents, Acceptable Means of Compliance (AMC) as well as regulations.

Different approval methodologies are applied in aviation. For airborne equipment, "certification" is used based on specifications, standards and "Technical Specification Orders" (TSO). Certified equipment can be installed and used on board aircraft, on the condition that installation on board such aircraft has been certified as well. Ground system constituents are accompanied by "declaration of conformity or suitability for use" issued by the manufacturers. The service provider presents a "declaration of verification of systems", a demonstration of compliance with the regulation, to a competent authority i.e. the National Supervisory Authority (NSA) who oversees the service provider to ensure that safety requirements are met. In some cases, the regulation is very prescriptive with precise requirements, but in most cases only guidance is provided.

Guidance material/Specification/Standards can be considered as appropriate and recommended for support to implementation. They can also be referenced in Means of Compliance or Regulation. Means of Compliance listed in tables are non-binding standards adopted by EASA or ESOs to illustrate means to establish compliance with regulations and implementing rules. However, additional/alternative means for compliance can be applied if accepted by the relevant NSA. Regulations listed in the tables are binding instruments considered as relevant for the Family implementation.

Early implementations before formal standards and regulatory material is available is possible subject to NSA approval. However, it might be necessary to adjust the implementations once formal standards and regulatory material becomes available at the end of V4.

The content of Annex is based on:

- European Commission Implementing Regulation No 116/2021, Common Project 1 (CP1), repealing Commission Implementing Regulation (EU) No 716/2014 known as the Pilot Common Project (PCP), and especially the related indicative Roadmap with respect to standardisation and regulation needs);
- the ATM Master Plan references including the Integrated Roadmap Dataset 20;
- SESAR Solutions, i.e. deliverables from SESAR R&D mapped to ATM Master Plan Level 2 Operational Improvements (OIs);
- related plans or further development according to SESAR 2020 plans; and
- the Rolling Work Plan version 13.1 developed by the European ATM Standardisation Coordination Group (EASCG), summarising on-going and planned activities within bodies involved in development of standards and regulation.

The information reported in the document is elaborated and analysed by SDM in coordination with **EASA, EDA, Eurocontrol, NM and SJU**, as well as with **EUROCAE and ESOs** which contribution and inputs were pivotal towards the finalisation of the Annex.

In order to limit the volume and increase the readability of the Annex, some high-level reference documents setting up the “legislative” framework are not included in the following tables. It should be noted that these documents are however always applicable and should be taken into account when introducing new and changing existing services. Such high-level reference documents include - amongst others:

- EASA Basic Regulation No 2018/1139.
- Single European Sky (SES) legislation, with a specific focus on (EC) No 552/2004 Interoperability Regulation (the Updated EASA Basic regulation is repealing part of (EU) 552/2004). Articles 4, 5, 6, 6a,7 and Annexes III and IV are still valid until 12 September 2023 at latest.
- Implementing Regulation (EU) No 2017/373 laying down common requirements for providers of air traffic management, air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, Regulation (EU) No 1035/2011 and Regulation (EU) No 2016/1377 and amending Regulation (EU) No 677/2011. The regulation is constructed of a “cover regulation” with thirteen annexes addressing different areas and it is applicable from 2 January 2020. However, the part related to “data service providers” is applicable from 1 January 2019.
- Commission Implementing Regulation (EU) 2020/469 of 14 February 2020 amending Regulation (EU) No 923/2012, Regulation (EU) No 139/2014 and Regulation (EU) 2017/373 as regards requirements for air traffic management/air navigation services, design of airspace structures and data quality, runway safety and repealing Regulation (EC) No 73/2010.
- DM Implementing Regulation (EU) No 409/2013;
- European Commission Implementing Regulation No 116/2021, Common Project 1 (CP1), amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014 known as the Pilot Common Project (PCP).
- Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (Text with EEA relevance.)
- Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council Text with EEA relevance
- [Directive 2013/40/EU of the European Parliament and of the Council of 12 August 2013 on attacks against information systems;](#)
- [The Network and Information Security \(NIS\) Directive \(2016/1148\);](#)
- [ITU X.1205 “Overview of Cybersecurity”;](#)
- CEN EN 16495 “Information security for organisations supporting civil aviation”;
- ISO 27001 - Information technology — Security techniques — Information security management systems — Requirements;
- ISO 27002 - Information technology — Security techniques — Code of practice for information security management;
- ISO 27003 - Information technology — Security techniques — Information security management system implementation guidance;
- ISO 27004 - Information technology — Security techniques — Information security management — Measurement;
- ISO 27005 - Information technology — Security techniques — Information security risk management;
- ISO 27006 - Information technology — Security techniques — Requirements for bodies providing audit and certification of information security management systems;
- ISO 28000 Specification for security management systems for the supply chain;
- [CANSO Cyber Security and Risk Assessment Guide.](#)

It should also be mentioned that Airlines Electronic Engineering Committee (AEEC) is developing material defining “form, fit and function” of airborne equipment published as ARINC documents. Not all of these documents are included in Annex B. The ARINC 660-B “CNS/ATM Avionics Architectures Supporting NEXTGEN/SESAR Concepts” provides an overview of the expected impact on airborne equipment when deploying the SESAR solutions.

Furthermore, considering that global interoperability is a paramount for aviation, SESAR deployment is strongly linked to the Global Air Navigation Plan (GANP) defined by ICAO, which is related to the European ATM Master Plan. Therefore, some high-level ICAO reference documents, which may be considered in the deployment of the families, are listed below:

- ICAO Annexes to the Chicago Convention;
- ICAO Annex 17 – Aviation Security (safeguards civil aviation against unlawful interference and recommends protection of critical information and communication systems)
- ICAO IMP SARPs on AIRM;
- ICAO PANS-IM covering AIRM (TBD).
- ICAO Doc 9985 – Restricted (Air Traffic Management Security Manual)
- ICAO Doc 8973 – Restricted (Aviation Security Manual)

Cybersecurity

In order to complement Cybersecurity guidance section in the SESAR Deployment Programme Planning View, this section provides a list of regulations, standards and guidance documents specifically related to cybersecurity aspects, which are sometimes targeting a specific audience but may inspire good practises across the whole community.

For States and “operators of essential services”

- The [Network and Information Security \(NIS\) Directive \(2016/1148\)](#) requests Member States to identify “operator of essential services” by 9 November 2018 and lists for air transport the following organisations: air carriers, airport managing bodies and traffic management control operators. The NIS directive also requests the States to ensure that “operators of essential services” take:
 1. *“Appropriate and proportionate technical and organisational measures to manage the risks posed to the security of network and information systems which they use in their operations. Having regard to the state of the art, those measures shall ensure a level of security of network and information systems appropriate to the risk posed”.*
 2. *“Appropriate measures to prevent and minimise the impact of incidents affecting the security of the network and information systems used for the provision of such essential services, with a view to ensuring the continuity of those services”.*
- EASA Basic Regulation 2018/1139 of July 4th 2018 highlights in article 4:

“Interdependencies between the different domains of aviation safety, and between aviation safety, cyber security and other technical domains of aviation regulation”
- ECAC Doc 30

For all Air Navigation Service Providers:

- [Commission Implementing Regulation](#) (EU) No 2017/373 of 1st of March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, in its requirement “ATM/ANS.OR.D.010 Security Management” states that:
 - *(a) Air navigation services and air traffic flow management providers and the Network Manager shall, as an integral part of their management system as required in point ATM/ANS.OR.B.005, establish a security management system [...]*
 - *(d) Air navigation services and air traffic flow management providers and the Network Manager shall take the necessary measures to protect their systems, constituents in use and data and prevent compromising the network against information and cyber security threats which may have an unlawful interference with the provision of their service.*
- ED-205 “Process standard for Air Traffic Management/Air Navigation Services (ATM/ANS) ground system security aspects for certification/declaration”

- CEN EN 16495 “Information security for organisations supporting civil aviation” builds on the structure of the ISO/IEC 27000 Family - Information security management systems
- ICAO Doc 9985 – Restricted (Air Traffic Management Security Manual)

For all stakeholders:

- ICAO Annex 17 – Aviation Security (safeguards civil aviation against unlawful interference and recommends protection of critical information and communication systems)
- ICAO Doc 8973 – Restricted (Aviation Security Manual)
- General Data Protection Regulation (GDPR) (Regulation (EU) No 2016/679) on the protection of natural persons with regard to the processing of personal data and on the free movement of such data
- Regulation 2019/2019/881 on ENISA (the European Union Agency for Cybersecurity) and on information and communications technology cybersecurity certification
- ITU X.1205 “Overview of Cybersecurity”
- ISO 27000 family of standards are focused on information security matters:
 - ISO 27001 - Information technology — Security techniques — Information security management systems — Requirements
 - ISO 27002 - Information technology — Security techniques — Code of practice for information security management
 - ISO 27003 - Information Technology — Security techniques — Information security management system implementation guidance
 - ISO 27004 - Information technology — Security techniques — Information security management — Measurement
 - ISO 27005 - Information technology — Security techniques — Information security risk management
 - ISO 27006 - Information technology — Security techniques — Requirements for bodies providing audit and certification of information security management systems
- [NIST Cybersecurity Framework](#)
- [ISA/IEC 62443 – Industrial Automation and Control Systems \(IACS\) security](#)

ATM Functionality 1 - Extended Arrival Management and Integrated AMAN/DMAN in the High-Density Terminal Manoeuvring Areas

Family 1.1.1 - Arrival Manager extended to en-route airspace

EOC: Airport and TMA performance

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#05 “Extended Arrival Management (AMAN) horizon”	TS-0305-A	V3 - SESAR Release 4 (2014)
VLDs		Date
PJ.25		SESAR Release 9 (2020)
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
SPEC-0106 On-Line Data Interchange (OLDI) Edition 4.3, Community Specification CS 2019/C 31/06	EUROCONTROL	Published
SPEC-0106 On-Line Data Interchange (OLDI) Edition 5.0, Community Specification CS 2019/C 31/06	EUROCONTROL	Q2/2021
SPEC-0107 EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) Edition 3.2, Community Specification	EUROCONTROL	Published
SPEC-0107 EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) Edition 3.3, Community Specification	EUROCONTROL	Published (waiting for publication as CS in the OJEU)

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 9426 Air Traffic Services Planning Manual	ICAO	Published
Guidance Manual on Airport Traffic Synchronisation	ICAO	TBD

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
API Implementation Guide Edition 1.0/01-07-2020	EUROCONTROL	Published
ED-254 MASPS covering the Extended horizon AMAN upstream coordination service	EUROCAE	Published
AMAN Information Extension to En-Route Sectors - Concept of Operations; Edition 1.0, 5/06/2009	EUROCONTROL	Published
EUROCONTROL Concept of Operations for Network Manager Support to Advanced Arrival Management Edition 1.0 (24/10/2014)	Network Manager	Published
Network Strategy Plan (NSP): SO 4/5	Network Manager	Published
Guidelines for On-Line Data Interchange (OLDI) Edition 1.1	EUROCONTROL	Published

V5 – Deployment Phase

Target Date

01/2024

SDM View

V3 achieved and wave-2 of VLDs were planned but delayed due COVID postponed to late 2021.

OLDI AMA message supports initial implementations. Initial deployment is based on bilateral agreements. Guidance material ED-254 MASPS and SWIM yellow profile covering the Extended horizon AMAN upstream coordination service certainly be useful for supporting coordination between further upstream ATS units (that can be located in different States) and in situations when more than one airport is affected.

Family 1.2.1 – AMAN/DMAN Integration

EOC: Airport and TMA performance

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#54 “Flow-based integration of arrival and departure management”	TS-0308	V3 - SESAR Release 4 (2014)
#106 “DMAN Baseline for integrated AMAN DMAN”	TS-0201	V3 - SESAR Release 1 (2011)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery

V4 – Industrialization Phase

Means of Compliance and/or Certification

References

Organization

Delivery

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References

Organization

Delivery

B0-RSEQ Improved Traffic Flow through Runway Sequencing (AMAN/DMAN)

ICAO

B1-RSEQ Improved Airport Operations through Departure, Surface and Arrival Management

ICAO

B2-RSEQ Linked AMAN/DMAN

ICAO

Doc 9994 Manual on Airborne Surveillance Applications

ICAO

Doc 9426 Air Traffic Services Planning Manual

ICAO

Published

Guidance Manual on Airport Traffic Synchronisation

ICAO

TBD

API Implementation Guide Edition 1.0/01-07-2020

EUROCONTROL

Published

DPI Implementation Guide Edition 2.3/01-07-2020

EUROCONTROL

Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
DPI & FUM Implementation Roadmap Edition 2.1/01-07-2020	EUROCONTROL	Published
ED-141 Minimum Technical Specification for the Airport Collaborative Decision Making (Airport-CDM)	EUROCAE	Published
ED-145 Airport-CDM Interface Specification	EUROCAE	Published

V5 – Deployment Phase

Target Date	12/2027
SDM View	V3 achieved and second phase of VLDs were planned in 2020 but delayed due COVID postponed to 2021/ 2022. “Flow-based integration of arrival and departure management” solution is validated as well as “baseline DMAN for integrated AMAN-DMAN”. It was validated in a series of live trials with a particular focus on delay reduction. The operational concept supports DMAN integration with arrival manager (AMAN) and provides a baseline for further development of AMAN/DMAN integration procedures.

ATM Functionality 2 – Airport Integration and Throughput

Family 2.1.1 – Departure Management Synchronised with Pre-Departure Sequencing

EOC: Airport and TMA performance

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#53 “Pre-Departure Sequencing supported by Route Planning”	TS-0202	V3 - SESAR Release 4 (2014)
#106 “DMAN Baseline for integrated AMAN DMAN”	TS-0201	V3 - SESAR Release 1 (2011)
VLDs		Date
PJ.28		SESAR Release 9 (2020)

V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
EN 303 212 (V1.1.1) Airport Collaborative Decision Making (A-CDM) Community Specification (Communication 2010/C 168/04)	ETSI	Published
Update EN 303 212 Airport Collaborative Decision Making (A-CDM) Community Specification	ETSI	TBD
EN 303 213-7 CS on ASMGCS to comply with ED-87D (V 1.1.1)	ETSI	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 9426 Air Traffic Services Planning Manual	ICAO	Published
Doc 9830, Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual	ICAO	Published
Guidance Manual on Airport Traffic Synchronisation	ICAO	TBD

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
B0 - RSEQ Improved Traffic Flow through Runway Sequencing (AMAN/DMAN)	ICAO	
B1 - RSEQ Improved Airport Operations through Departure, Surface and Arrival Management	ICAO	
B2-RSEQ Linked AMAN/DMAN	ICAO	
B3 - RSEQ Integrated AMAN/DMAN/SMAN	ICAO	
ED-141 Minimum Technical Specification for the Airport Collaborative Decision Making (Airport-CDM)	EUROCAE	Published
ED-145 Airport-CDM Interface Specification	EUROCAE	Published
Specification on A-CDM	EUROCONTROL	Q2 2021
Airport CDM Implementation Manual Version 5	EUROCONTROL	Published
SPEC-171 Edition 2.0 Specification for Advanced-Surface Movement Guidance and Control System (A-SMGCS) Services	EUROCONTROL	Published
MASPS for Advanced Surface Movement Guidance and Control Systems (A-SMGCS) ED-87D	EUROCAE	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
MASPS for Advanced Surface Movement Guidance and Control Systems (A-SMGCS) ED-87E	EUROCAE WG-41	Q3/2022

V5 – Deployment Phase

Target Date	31/12/2022
SDM View	<p>No further supporting material needed other than already existing/being developed.</p> <p>The existing (and identified in the Annex) standardisation material and regulations are sufficient to deploy the family in a harmonised way.</p>

Family 2.2.1 – Initial AOP

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#21 “Airport Operations Plan and Seamless Integration”	AOP-NOP AO-0801-A	V3 - SESAR Release 5 (2016)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
Airport-CDM Specifications	Network Manager	TBD
EN 303 212 (V1.1.1) Airport Collaborative Decision Making (A-CDM) Community Specification (Communication 2010/C 168/04)	ETSI	Published
Update EN 303 212 Airport Collaborative Decision Making (A-CDM) Community Specification	ETSI	TBD

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
B0 - RSEQ Improved Traffic Flow through Runway Sequencing (AMAN/DMAN)	ICAO	
B1 - RSEQ Improved Airport Operations through Departure, Surface and Arrival Management	ICAO	
B2-RSEQ Linked AMAN/DMAN	ICAO	
B3 - RSEQ Integrated AMAN/DMAN/SMAN	ICAO	

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
ED-141 Minimum Technical Specification for the Airport Collaborative Decision Making (Airport-CDM)	EUROCAE	Published
ED-145 Airport CDM Interface Specification	EUROCAE	Published
ED-146 Guidelines for Test and Validation related to A-CDM interoperability	EUROCAE	Published
Specification on A-CDM	EUROCONTROL	Q2 2021
DPI Implementation Guide Edition 2.3/01-07-2020	EUROCONTROL	Published
API Implementation Guide Edition 1.0/01-07-2020	EUROCONTROL	Published
DPI & FUM Implementation Roadmap Edition 2.1/01-07-2020	EUROCONTROL	Published
EUROCONTROL A-CDM webpage	EUROCONTROL	Published
Airport CDM Implementation Manual Version 5	EUROCONTROL	Published
Aeronautical Information Exchange Model AIXM Edition 5.1.1	EUROCONTROL	Published
Aeronautical Information Exchange Model AIXM Edition 5.2	EUROCONTROL	Q2/2021
NM B2B Reference Manuals	EUROCONTROL	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
NM B2B Services webpage	EUROCONTROL	Published
Airport Network Integration - concept for establishment of an Airport Operations Plan (AOP) Ed1.1 – 07/11/2018	EUROCONTROL	Published

V5 – Deployment Phase

Target Date	31/12/2023
SDM View	V3 completed in 2016. The existing (and identified in the Annex) standardisation material and regulations are sufficient to deploy the family in a harmonised way.

Family 2.2.2 - Extended AOP

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#21 “Airport Operations Plan and AOP-NOP Seamless Integration”	AO-0801-A AO-0802-A AO-0803 DCB-0310	V3 - SESAR Release 5 (2016)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
Airport-CDM Specifications	Network Manager	TBD
EN 303 212 (V1.1.1) Airport Collaborative Decision Making (A-CDM) Community Specification (Communication 2010/C 168/04)	ETSI	Published
Update EN 303 212 Airport Collaborative Decision Making (A-CDM) Community Specification	ETSI	TBD

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
B0 - RSEQ Improved Traffic Flow through Runway Sequencing (AMAN/DMAN)	ICAO	
B1 - RSEQ Improved Airport Operations through Departure, Surface and Arrival Management	ICAO	
B2-RSEQ Linked AMAN/DMAN	ICAO	
B3 - RSEQ Integrated AMAN/DMAN/SMAN	ICAO	

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Specification on A-CDM	EUROCONTROL	Q2 2021
DPI Implementation Guide Edition 2.3/01-07-2020	EUROCONTROL	Published
API Implementation Guide Edition 1.0/01-07-2020	EUROCONTROL	Published
DPI & FUM Implementation Roadmap Edition 2.1/01-07-2020	EUROCONTROL	Published
EUROCONTROL A-CDM webpage	EUROCONTROL	Published
NM B2B Services webpage	EUROCONTROL	Published
NM B2B Reference Manuals	EUROCONTROL	Published
Airport Network Integration - concept for establishment of an Airport Operations Plan (AOP) Ed1.1 – 07/11/2018	EUROCONTROL	Published
Network Strategy Plan (NSP): SO 5/2	Network Manager	Published

V5 – Deployment Phase

Target Date

31/12/2027

SDM View

Guidance material may prove to be limited in 2021. Further development of guidance material necessary (on-going under ACI-EUROPE with limited AO expert resources due to COVID crisis).

The existing (and identified in the Annex) standardisation material and regulations are not yet sufficient to deploy the family in a harmonised way.

Family 2.3.1 – Airport Safety Nets

EOC: Airport and TMA performance

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#02 “Airport Safety Nets for controllers: conformance monitoring alerts and detection of conflicting ATC clearances”	AO-0104-A	V3 - SESAR Release 5 (2016)
#04 “Enhanced Traffic Situational Awareness and Airport Safety Nets for the vehicle drivers”	AO-0105 AO-0204	V3 - SESAR Release 5 (2016)
VLDs		Date
PJ.28		SESAR Release 9 (2020)
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 7030/5, (EUR/NAT) Regional Supplementary Procedures, Section 6.5.6 and 6.5.7	ICAO	Published
Doc 9426 Air Traffic Services Planning Manual	ICAO	Published
Doc 9830, Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual	ICAO	Published
Doc 9871, Technical Provisions for Mode S Services and Extended Squitter	ICAO	Published
Doc 9924, Aeronautical Surveillance Manual	ICAO	Published
Guidance Manual on Airport Traffic Synchronisation	ICAO	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
B0 - RSEQ Improved Traffic Flow through Runway Sequencing (AMAN/DMAN)	ICAO	
B1 - RSEQ Improved Airport Operations through Departure, Surface and Arrival Management	ICAO	
B2-RSEQ Linked AMAN/DMAN	ICAO	
B3 - RSEQ Integrated AMAN/DMAN/SMAN	ICAO	
ED-116 MOPS for Surface Movement Radar Sensor Systems for use in A-SMGCS	EUROCAE	Published
ED-117A MOPS for Mode S MLAT Systems for use in A-SMGCS	EUROCAE	Published
ED-163 Safety, Performance and Interoperability Requirements document for ADS-B Airport Surface surveillance application (ADS-B APT)	EUROCAE WG-41	Published
ED-102A / DO-260B MOPS for 1090 MHz Extended Squitter Automatic Dependent Surveillance Broadcast (ADS-B) and Traffic Information Services Broadcast (TIS-B)	EUROCAE / RTCA	Published
SPEC-171 Edition 2.0 Specification for Advanced-Surface Movement Guidance and Control System (A-SMGCS) Services	EUROCONTROL	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
European Action Plan for the Prevention of Runway Incursions (EAPPRI)	EUROCONTROL	

V5 – Deployment Phase

Target Date	31/12/2025
SDM View	<p>V3 completed in 2016 and VLDs in 2020.</p> <p>The existing (and identified in the Annex) standardisation material and regulations are sufficient to deploy the family in a harmonised way.</p>

ATM Functionality 3 - Flexible Airspace Management and Free Route Airspace

Family 3.1.1 – ASM and A-FUA

EOC: Fully dynamic and optimised airspace

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#31 “Variable profile military reserved areas and enhanced (further automated) civil-military collaboration”	AOM-0206-A AOM-0202-A	V3 - SESAR Release 5 (2016)
#66 “Automated Support for Dynamic Sectorisation”	CM-0102-A	V3 - SESAR Release 2 (2012)
VLDs		Date
None		N/A

V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
Commission Regulation (EC) 2150/2005	European Commission	Published

V4 – Industrialization Phase

Regulation

References

Commission Implementing Regulation (EU) 2019/123 of 24 January 2019 laying down detailed rules for the implementation of air traffic management (ATM) network functions and repealing Commission Regulation (EU) No 677/2011

Organization

European Commission

Delivery

Published

V4 – Industrialization Phase

Means of Compliance and/or Certification

References

Communication 2009/C 2196/05 Community Specifications for the application of the Flexible Use of Airspace (FUA)

Organization

EUROCONTROL

Delivery

Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
SPEC-166 Edition 1.0 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part I	EUROCONTROL	Published
SPEC-166 Edition 1.1 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part I	EUROCONTROL	Q1/20221
SPEC-179 Edition 1.0 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part II	EUROCONTROL	Published
SPEC-179 Edition 1.1 – EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part II	EUROCONTROL	Q1/2023
SPEC-0112 Edition 1.1 - Specification for the application of the Flexible Use of Airspace (FUA) – January 2009	EUROCONTROL	Published
LARA (Local and sub-Regional Airspace Management Support System)	EUROCONTROL	Published
Advanced FUA Concept – Edition 1.0 / September 2015	EUROCONTROL	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
NM B2B Airspace Services Reference Manual	EUROCONTROL	Published
Civil-military ATM Performance Framework - V1.0	EUROCONTROL	
NOP Protected Portal User Guide / July 2020	EUROCONTROL	Published
NOP Public Portal User Guide / July 2020	EUROCONTROL	Published
Aeronautical Information Exchange Model AIXM Edition 5.1.1	EUROCONTROL	Published
Aeronautical Information Exchange Model AIXM Edition 5.2	EUROCONTROL	Q2/2021
European Route Network Improvement Plan (ERNIP) Part 3 - Airspace Management Handbook - Guidelines for Airspace Management - V5.7 / November 2020	Network Manager	Published
Network Strategy Plan (NSP): SO 3/4	Network Manager	Published

V5 – Deployment Phase

Target Date 31/12/2022

SDM View

V3 completed in 2016. Initial deployment started. Update of supporting material needs to be considered.
Connection between ASM support systems and ATC systems needs to be further defined.

Family 3.1.2 – Management of Predefined Airspace Configurations

EOC: Fully dynamic and optimised airspace

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#31 “Variable profile military reserved areas and enhanced (further automated) civil-military collaboration”	AOM-0206-A AOM-0202-A	V3 - SESAR Release 5 (2016)
#66 “Automated Support for Dynamic Sectorisation”	CM-0102-A	V3 - SESAR Release 2 (2012)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
Commission Regulation (EC) No 2150/2005	European Commission	Published

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
SPEC-0112 Edition 1.1 - Specification for the application of the Flexible Use of Airspace (FUA)	EUROCONTROL	Published
SPEC-0112 - EUROCONTROL Specification for the application of the Flexible Use of Airspace (FUA) - 1.1 / January 2009	EUROCONTROL	Published
Advanced FUA Concept – Edition 1.0 / September 2015	EUROCONTROL	Published
Network Strategy Plan (NSP): SO 3/4	Network Manager	Published
European Route Network Improvement Plan (ERNIP) Part 3 - Airspace Management Handbook - Guidelines for Airspace Management – Version 5.7 / November 2020	Network Manager	Published

V5 – Deployment Phase

Target Date

31/12/2022

SDM View

Implementation has started.

Family 3.2.1 – Initial FRA

EOC: Fully dynamic and optimised airspace

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#32 "Free Route through the use of Direct Routing"	AOM-0500	V3 - SESAR Release 5 (2016)
#33 "Free Route through Free Routing for Flights both in cruise and vertically evolving above a specified Flight Level"	AOM-0501	V3 - SESAR Release 5 (2016)
#66 "Automated Support for Dynamic Sectorisation"	CM-102-A	V3 - SESAR Release 5 (2016)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
Commission Regulation (EC)No 2150/2005	European Commission	Published

V4 – Industrialization Phase

Regulation

References	Organization	Delivery
Commission Regulation (EU) No 1032/2006 - Requirements for automatic systems for the exchange of flight data for the purpose of notification, coordination and transfer of flights between air traffic control units	European Commission	Published
Commission Regulation (EU) No 677/2011, as amended by Commission Implementing Regulation (EU) No 970/2014	European Commission	Published

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
Doc 9426 Air Traffic Services Planning Manual	ICAO	Published
SPEC-0107 EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) Edition 3.2, Community Specification	EUROCONTROL	Published
SPEC-0107 EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) Edition 3.3, Community Specification	EUROCONTROL	Published (waiting for publication as CS in the OJEU)

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
SPEC-0106 On-Line Data Interchange (OLDI) Edition 4.3, Community Specification CS 2019/C 31/06	EUROCONTROL	Published
SPEC-0106 On-Line Data Interchange (OLDI) Edition 5.0, Community Specification CS 2019/C 31/06	EUROCONTROL	Q2/2021

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
IFPS USERS MANUAL	EUROCONTROL	Published. Continuously maintained
Doc 9426 Air Traffic Services Planning Manual	ICAO	Published
European Route Network Improvement Plan (ERNIP) Part 3 - Airspace Management Handbook - Guidelines for Airspace Management – Version 5.7 / November 2020	Network Manager	Published
European Route Network Improvement Plan (ERNIP) Part 1 - European Airspace Design Methodology - Guidelines - 2.2 / November 2020	Network Manager	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
European Route Network Improvement Plan (ERNIP) Part 2 - European ATS Route Network - Version 202019-2024 / July 2020	Network Manager	Published
European Route Network Improvement Plan (ERNIP) Part 4 - Route Availability Document User's Manual / June 2015	Network Manager	Published
Network Strategy Plan (NSP): SO 3/1 and SO 3/3	Network Manager	Published
Guidelines for On-Line Data Interchange (OLDI) Edition 1.1	EUROCONTROL	Published

V5 – Deployment Phase

Target Date	31/12/2022
SDM View	Deployment already started.

Family 3.2.2 – Enhanced Free Route Airspace Operations

EOC: Fully dynamic and optimised airspace

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#32 “Free Route through the use of Direct Routing for flights both in cruise and vertically evolving in cross ACC/FIR borders and in high complexity environments”	AOM-0500	V3 - SESAR Release 5 (2016)
#65 “User Preferred Routing”	AOM-0500	V3 - SESAR Release 5 (2016)
#33 “Free Route through the use of Free Routing for flights both in cruise and vertically evolving in cross ACC/FIR borders and within permanently low to medium complexity environments”	AOM-0501	V3 - SESAR Release 5 (2016)
#66 “Automated Support for Dynamic Sectorisation”	CM-0102-A	V3 - SESAR Release 5 (2016)
PJ.06-01 “Optimized traffic management to enable Free Routing in high and very high complexity environments”	AOM-0505	V3 - SESAR Release 9 (2020)
VLDs		Date
None		N/A

V4 – Industrialization Phase

Regulation

References	Organization	Delivery
Commission Regulation (EC) 2150/2005	European Commission	Published
Commission Implementing Regulation (EU) 2019/123 of 24 January 2019 laying down detailed rules for the implementation of air traffic management (ATM) network functions and repealing Commission Regulation (EU) No 677/2011	European Commission	Published

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
SPEC-0106 On-Line Data Interchange (OLDI) Edition 4.3, Community Specification CS 2019/C 31/06	EUROCONTROL	Published
SPEC-0106 On-Line Data Interchange (OLDI) Edition 5.0, Community Specification CS 2019/C 31/06	EUROCONTROL	Q2/2021

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 9426 Air Traffic Services Planning Manual	ICAO	Published
IFPS USERS MANUAL	EUROCONTROL	Published
Guidelines for On-Line Data Interchange (OLDI) Edition 1.1	EUROCONTROL	Published
Network Strategy Plan (NSP): SO 3/1 and SO 3/3	Network Manager	Published
European Route Network Improvement Plan (ERNIP) Part 3 - Airspace Management Handbook - Guidelines for Airspace Management - 5.7 / November 2020	Network Manager	Published
European Route Network Improvement Plan (ERNIP) Part 1 - European Airspace Design Methodology - Guidelines - 2.0 / November 2020	Network Manager	Published
European Route Network Improvement Plan (ERNIP) Part 2 - European ATS Route Network - Version 2019-2024 / July 2020	Network Manager	Published
European Route Network Improvement Plan (ERNIP) Part 4 - Route Availability Document User's Manual / June 2015	Network Manager	Published

V5 – Deployment Phase

Target Date

31/12/2025

SDM View

Deployment already successfully started (Borealis, SECSI FRA, etc.).

ATM Functionality 4 – Network Collaborative Management

Family 4.1.1 – Enhanced Short Term ATFCM Measures

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#17 "Advanced Short ATFCM Measures (STAM)"	DCB-0308	V3 – SESAR Release 5 (2016)
VLDs		Date
PJ.24		SESAR Release 9 (2020)
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 9971 Manual on Collaborative Air Traffic Flow Management (ATFM part)	ICAO	Published
STAM Operational Concept (October 2015)	Network Manager	Published
Network Strategy Plan (NSP): SO 2/3, SO 4/2 and SO 4/5	Network Manager	Published
ATFCM Operations Manual	Network Manager	Published. Continuously maintained

V5 – Deployment Phase

Target Date

31/12/2022

SDM View

Very low traffic due to COVID 19 crises could delay the implementation of STAM, because this functionality is useful in case of high traffic. Difficulty of testing without traffic. Very important to develop systems to prepare the future. Documentation is sufficient to deploy STAM in a harmonised way.

Family 4.2.1 – Interactive Rolling NOP

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#20 “Collaborative NOP for Step 1”	DCB-0103-A	V3 – SESAR Release 5 (2016)
#18 “CTOT and TTA”	DCB-0208	V3 – SESAR Release 5 (2016)
VLDs		Date
PJ.24		SESAR Release 9 (2020)

V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 9971 Manual on Collaborative Air Traffic Flow Management (ATFM part)	ICAO	Published
Collaborative NOP	Network Manager	Published
Network Strategy Plan (NSP): SO 2/1, SO 2/2, SO 2/3, SO 4/2 and SO 4/5	Network Manager	Published
NOP User Guide; Edition: 24.01. Date: 18 November 2020	Network Manager	Published
ATFCM Operations Manual	Network Manager	Published. Continuously maintained

V5 – Deployment Phase

Target Date

31/12/2023

SDM View

Implementation in progress. Mainly link with Network Manager releases. Still some validation in progress for management of target times. Documentation continuously maintained by Network Manager to ensure harmonised implementation.

Family 4.2.2 – Initial AOP/NOP Information Sharing

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#20 “Collaborative NOP for Step 1”	DCB-0103-A	V3 – SESAR Release 5 (2016)
#21 “Airport Operations Plan and AOP-NOP Seamless Integration”	AO-0801-A	V3 – SESAR Release 5 (2016)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
Airport-CDM Specifications	Network Manager	TBD

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 9971 Manual on Collaborative Air Traffic Flow Management (ATFM part)	ICAO	Published
AOP/NOP interface specifications and guidance material	Network Manager	Published
NOP User Guide; Edition:24.01. Date: 18 November 2020	Network Manager	Published. Continuously maintained
Network Strategy Plan (NSP): SO 4/4 SO 5/2;	Network Manager	Published
Specification on A-CDM	EUROCONTROL	Q2 2021
DPI Implementation Guide Edition 2.3/01-07-2020	EUROCONTROL	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
API Implementation Guide Edition 1.0/01-07-2020	EUROCONTROL	Published
DPI & FUM Implementation Roadmap Edition 2.1/01-07-2020	EUROCONTROL	Published
EUROCONTROL A-CDM webpage	EUROCONTROL	Published
NM B2B Services webpage	EUROCONTROL	Published
NM B2B Reference Manuals	EUROCONTROL	Published

V5 – Deployment Phase

Target Date	31/12/2023t
SDM View	<p>Initial AOP/NOP integration is in progress with delay due to the COVID crises, which lead to almost closure of some airports during 2020.</p> <p>18 airports are required to implement this family. On Network Manager side this will most likely have to be done sequentially. A planning should be established to avoid accumulation of airports wanting to implement close to the target date</p> <p>Documentation sufficient to deploy in a harmonised way.</p>

Family 4.3.1 – Automated Support for Traffic Complexity Assessment and Flight Planning Interfaces

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#19 “Automated support for Traffic Complexity Detection and Resolution”	CM-0103-A CM-0104-A	V3 – SESAR Release 5 (2016)
PJ.18-02C “eFPL Distribution to ATC”	POI-0049-IS	V3 – SESAR Release 9 (2020)
#37 “Extended Flight Plan”	AUO-0203	V3 – SESAR Release 5 (2016)
VLDs		Date
PJ.24		SESAR Release 9 (2020)
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
Commission Regulation (EU) No 1033/2006 - Requirements on procedures for flight plans in the pre-flight phase for the single European sky	European Commission	Published

V4 – Industrialization Phase		
Means of Compliance and/or Certification		
References	Organization	Delivery
SPEC- 0101 Specification for the Initial Flight Plan (IFPL), Edition 1.3, Community Specification	EUROCONTROL	Published
SPEC-0101 Specification for the Initial Flight Plan (IFPL), Edition 2.0	EUROCONTROL	Published (waiting for publication as CS in the OJEU)
SPEC-0107 EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) Edition 3.2, Community Specification	EUROCONTROL	Published
SPEC-0107 EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) Edition 3.3, Community Specification	EUROCONTROL	Published (waiting for publication as CS in the OJEU)

V4 – Industrialization Phase		
Guidance Material / Specifications / Standards		
References	Organization	Delivery
Doc 9965 Manual on Flight and Flow Information for a Collaborative Environment (FF-ICE)	ICAO	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
ICAO Doc 4444 PANS-ATM Procedures for Air Navigation Services: Air Traffic Management	ICAO	Published
ATFCM Operations Manual	Network Manager	Published. Continuously maintained
Network Strategy Plan (NSP): SO 4/2, SO 4/3, SO 4/4, SO 4/5 and SO 4/7	Network Manager	Published
NM Flight Progress Messages Document; Edition 2.6 (July 2020)	Network Manager	Published
IFPS USERS MANUAL	Network Manager	Published. Continuously maintained
Flight Plan and Flight Data Evolution Implementation Strategy	Network Manager	Q4/2021
FPFDE Implementation Guidelines (Volumes 1 and 2)	Network Manager	Q4/2021

V5 – Deployment Phase

Target Date	31/12/2022
SDM View	FF-ICE initial implementation and trajectory update are in progress. Due to COVID19 crises with low traffic which lead to a less useful functionality, some complexity tool could be delayed.

Documentation on trajectory (flight planning and updates) is sufficient for a harmonised implementation. Basic requirements on complexity are available.

Family 4.4.1 – AOP/NOP Integration

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#21 “Airport operations plan and AOP-NOP seamless integration”	AO-0801–A AO-0802–A AO-0803 DCB-0310	V3 – SESAR Release 5 (2016)
#20 “Collaborative NOP for Step 1”	DCB-0103-A	V3 – SESAR Release 5 (2016)
#18 “CTOT and TTA”	DCB-0208	V3 – SESAR Release 5 (2016)
VLDs		Date
PJ.24		SESAR Release 9 (2020)

V4 – Industrialization Phase

Regulation

References

Organization

Delivery

None

N/A

N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References

Organization

Delivery

Airport-CDM Specifications

Network Manager

TBD

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References

Organization

Delivery

Doc 9971 Manual on Collaborative Air Traffic Flow Management (ATFM part)

ICAO

Published

Specification on A-CDM

EUROCONTROL

Q2 2021

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
AOP/NOP interface specifications and guidance material	Network Manager	Published
NOP User Guide 21.5 (23 January 2018)	Network Manager	Published
Network Strategy Plan (NSP): SO 4/4, SO 4/5 and SO 5/2	Network Manager	Published
DPI Implementation Guide Edition 2.3/01-07-2020	EUROCONTROL	Published
API Implementation Guide Edition 1.0/01-07-2020	EUROCONTROL	Published
DPI & FUM Implementation Roadmap Edition 2.1/01-07-2020	EUROCONTROL	Published
EUROCONTROL A-CDM webpage	EUROCONTROL	Published
NM B2B Services webpage	EUROCONTROL	Published
NM B2B Reference Manuals	EUROCONTROL	Published

V5 – Deployment Phase

Target Date

31/12/2027

SDM View

There is an opportunity to jointly define relevant information elements that should be exchanged in this family. The requirements and contextual processes will still evolve in the coming years. 28 airports are required to implement this family. On Network Manager side this will most likely have to be done sequentially. A planning should be established to avoid accumulation of airports wanting to implement close to the target date. Besides that, there are no major obstacles preventing the implementation.

ATM Functionality 5 – SYSTEM WIDE INFORMATION MANAGEMENT (SWIM)

Family 5.1.1 – Common SWIM PKI and cybersecurity

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#46 “Initial system-wide information management (SWIM) technology solution”	IS-0901-A	V3 – SESAR Release 5 (2016)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
ED-201-Aeronautical Information System Security (AISS) Framework Guidance	EUROCAE	Published
ED-204 - Information Security Guidance for Continuing Airworthiness	EUROCAE	Published
ED-205 - Process Standard for Security Certification and Declaration of ATM ANS Ground Systems	EUROCAE	Published
Recommendation ITU-T X.509	International Telecommunication Union (ITU)	Published
EN 16495 ATM information security	CEN	Published

V5 – Deployment Phase

Target Date

31/12/2025

SDM View

Deployment started with the European Common PKI project working on the call for tender material for the bid to establish European Aviation Common PKI (EACP). The call for tender is expected to be launched in 2022 and final EACP deployment expected before 2025.

Family 5.2.1 – Stakeholders SWIM PKI and cybersecurity

EOC: ATM interconnected network, Airport and TMA performance

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#46 "Initial system-wide information management (SWIM) technology solution"	IS-0901-A	V3 – SESAR Release 5 (2016)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
ED-201-Aeronautical Information System Security (AISS) Framework Guidance	EUROCAE	Published
ED-204A - Information Security Guidance for Continuing Airworthiness	EUROCAE	Published
ED-205 - Process Standard for Security Certification and Declaration of ATM ANS Ground Systems	EUROCAE	Published
SPEC-168 SWIM Service Description Edition 1.0	EUROCONTROL	Published
SPEC-168 SWIM Service Description Edition 1.1	EUROCONTROL	Q4/2021
SPEC-169 SWIM Information Definition	EUROCONTROL	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
SPEC-170 SWIM Technical Infrastructure Yellow Profile Edition 1.1	EUROCONTROL	Published
EN 16495 ATM information security	CEN	Published
Recommendation ITU-T X.509	ITU	Published

V5 – Deployment Phase

Target Date

31/12/2025

SDM View

Deployment started and the dependencies with EACP are visible for all stakeholders who will consider the possibility of using the certificates from EACP rather than their own local PKI solution. Due to the community engagement in the European common PKI project the awareness of what is required is good and hence this family should be implemented together with the implementation of the service families.

Family 5.3.1 – Aeronautical Information Exchange

EOC: ATM interconnected network

V3 – Development Phase

SESAR Solutions	OIs	V3 Achievement Date
#34 “Digital integrated briefing” Digital integrated briefing”	IS-0205	V3 – SESAR Release 5 (2016)
#46 “Initial system-wide information management (SWIM) technology solution”	IS-0901-A	V3 – SESAR Release 5 (2016)

VLDs	Date
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None	N/A
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V4 – Industrialization Phase

Regulation

References	Organization	Delivery
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None	N/A	N/A
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V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
ICAO Annex 15 Aeronautical Information Services	ICAO	Published
Doc 8126 Aeronautical Information Services Manual	ICAO	Published
Doc 10039 Manual on System Wide Information Management (SWIM) concept	ICAO	Published
Doc 10066 (PANS- AIM) Procedures for Air Navigation Services - Aeronautical Information Management	ICAO	Published
ED-76A / DO-200B Standard for processing aeronautical data	EUROCAE	Published
ED-99D - User Requirements for Aerodrome Mapping information	EUROCAE	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
ED-119C Interchange Standards for Terrain, Obstacle, and Aerodrome Mapping Data	EUROCAE	Published
SPEC-151 Specifications for Aeronautical Information Exchange	EUROCONTROL	Published
SPEC-154 Specification for the Origination of Aeronautical Data, vol I, II	EUROCONTROL	Published
SPEC-146 Specification for the Electronic Aeronautical Information Publication (eAIP) Edition 2.1	EUROCONTROL	Published
Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level, Part I	EUROCONTROL	Published
SPEC-168 SWIM Service Description Edition 1.0	EUROCONTROL	Published
SPEC-168 SWIM Service Description Edition 1.1	EUROCONTROL	Q4/2021
SPEC-169 SWIM Information Definition	EUROCONTROL	Published
SPEC-170 SWIM Technical Infrastructure Yellow Profile Edition 1.1	EUROCONTROL	Published
SPEC-166 Edition 1.0 - EUROCONTROL Specification for Airspace Management (ASM)	EUROCONTROL	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Support System Requirements supporting the ASM processes at local and FAB level Part I		
SPEC-166 Edition 1.1 - EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part I	EUROCONTROL	Q1/20221
SPEC-179 Edition 1.0 – EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part II	EUROCONTROL	Published
SPEC-179 Edition 1.1 – EUROCONTROL Specification for Airspace Management (ASM) Support System Requirements supporting the ASM processes at local and FAB level Part II	EUROCONTROL	Q1/2023
Supporting material for SWIM foundational specifications (online)	EUROCONTROL	Published
Aeronautical Information Exchange Model AIXM Edition 5.1.1	EUROCONTROL	Published
Aeronautical Information Exchange Model AIXM Edition 5.2	EUROCONTROL	Q2/2021
AIRM model (AIRM Community area)	EUROCONTROL	Published
GUID-0158 Terrain and Obstacle Data Manual	EUROCONTROL	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
GUID-163 Guidelines for Supporting the Implementation of Commission Regulation (EU) No 73/2010	EUROCONTROL	Published
GUID-172 Guidelines for harmonized AIP publication and data set provision	EUROCONTROL	Published
GUID-177 Guidelines for the provision of Metadata to support the Exchange of Aeronautical Data	EUROCONTROL	Published
GUID – 0181 Guidelines Supporting the Implementation of Aeronautical Information Requirements	EUROCONTROL	Published
GUID-182 Guidelines on the Implementation of Safety Support Assessment for AIS/AIM	EUROCONTROL	Published
GUID-184 Guidelines on Aeronautical Data Processes	EUROCONTROL	Published
Guidelines – Use of AIXM 5.1 in relation to the AIX Specification	EUROCONTROL	Published
OGC Web Feature Service (WFS) Interface Standard	OGC Aviation domain WG	Published
OGC Web Coverage Service (WCS) Interface Standard	OGC Aviation domain WG	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
OGC Observations and Measurements (O&M) Encoding Standard	OGC Aviation domain WG	Published
OGC Feature Portrayal Service (FPS) and Styled Layer Descriptor (SLD)	OGC Aviation domain WG	Published
GML Profile for Aviation Data	OGC Aviation domain WG	Published
NM B2B technical documentation	Network Manager	Published
Network Strategy Plan (NSP): SO 2/4 and SO 3/4	Network Manager	Published

V5 – Deployment Phase

Target Date

31/12/2025

SDM View

Deployment is ongoing especially Airspace management services which widely have been deployed using existing NM Tools. An important missing activity is to get NM B2B services SWIM Compliant and added to the SWIM registry. Digital NOTAM implementation has only partially started despite it being key for the digitalisation of AIM data and it depends on the finalisation of the specification.

Family 5.4.1 – Meteorological Information Exchange

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#34 “Digital integrated briefing” “Digital integrated briefing”	IS-0205	V3 – SESAR Release 5 (2016)
#35 “MET Information Exchange”	MET-0101	V3 – SESAR Release 5 (2016)
#46 “Initial system-wide information management (SWIM) technology solution”	IS-0901-A	V3 – SESAR Release 5 (2016)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
ICAO Annex 3 Meteorological service for international air navigation	ICAO	Published
Doc 8896 Manual of Aeronautical Meteorological Practice	ICAO	Published
Doc 9328 Manual of Runway Visual Range Observing and Reporting Practices	ICAO	Published
Doc 9377 Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services	ICAO	Published
Doc 9691 Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds	ICAO	Published
Doc 9766 Handbook on the International Airways Volcano Watch (IAVW) Operational Procedures	ICAO	Published

V4 – Industrialization Phase
Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 9817 Manual on Low-level Wind Shear	ICAO	Published
Doc 9837 Manual on Automatic Meteorological Observing Systems at Aerodromes	ICAO	Published
Doc 10003 Manual on the Digital Exchange of Aeronautical Meteorological Information	ICAO	Published
Doc 10039 Manual on System Wide Information Management (SWIM) concept	ICAO	Published
Meteorological Information Exchange Model (IWXXM)	ICAO	Published
ICAO EUR Doc 018 EUR OPMET Data Management Handbook	ICAO	Published
ICAO EUR Doc 033 - Guidelines for the Implementation of OPMET Data Exchange using IWXXM in the EUR Region	ICAO	Published
SPEC-168 SWIM Service Description Edition 1.0	EUROCONTROL	Published
SPEC-168 SWIM Service Description Edition 1.1	EUROCONTROL	Q4/2021
SPEC-169 SWIM Information Definition	EUROCONTROL	Published
SPEC-170 SWIM Technical Infrastructure Yellow Profile Edition 1.1	EUROCONTROL	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
AIRM model (AIRM Community area)	EUROCONTROL	Published
Supporting material for SWIM foundational specifications (online)	EUROCONTROL	Published
OGC Web Feature Service (WFS) Interface Standard	OGC	
OGC Web Coverage Service (WCS) Interface Standard	OGC	
OGC Observations and Measurements (O&M) Encoding Standard	OGC	
OGC Feature Portrayal Service (FPS) and Styled Layer Descriptor (SLD)	OGC	
WMO-No. 306 Manual on Codes International Codes Volume 1.3 Annex II to the WMO Technical Regulations Part D – Representations derived from data models	WMO	Published
WMO-No. 306 Manual on Codes International Codes Volume 1.2 Annex II to the WMO Technical Regulations Part B – Binary Codes Part C – Common Features to Binary and Alphanumeric Codes	WMO	Published

V5 – Deployment Phase

Target Date

31/12/2025

SDM View

It is recognised that the coordination between all stakeholders and Met service providers is key in this family, because the stakeholders together should define potential new or improved Met services based on operational needs. Besides that, there are no major obstacles preventing the implementation.

Family 5.5.1 – Cooperative Network Information Exchange

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#46 “Initial system-wide information management (SWIM) technology solution”	IS-0901-A	V3 – SESAR Release 5 (2016)
VLDs		Date
PJ.24		SESAR Release 9 (2020)
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 10039 Manual on System Wide Information Management (SWIM) concept	ICAO	Published
SPEC-168 SWIM Service Description Edition 1.0	EUROCONTROL	Published
SPEC-168 SWIM Service Description Edition 1.1	EUROCONTROL	Q4/2021
SPEC-169 SWIM Information Definition	EUROCONTROL	Published
SPEC-170 SWIM Technical Infrastructure Yellow Profile Edition 1.1	EUROCONTROL	Published
AIRM model (AIRM Community area)	EUROCONTROL	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Supporting material for SWIM foundational specifications	EUROCONTROL	Published
NM B2B technical documentations	Network Manager	Published
Network Strategy Plan (NSP): SO 2/1 and SO 4/5	Network Manager	Published

V5 – Deployment Phase

Target Date	31/12/2025
SDM View	This family has progressed well, hence all the services are available for consumers. An important missing activity is to get NM B2B services SWIM Compliant and added to the SWIM registry.

Family 5.6.1 – Flight Information Exchange

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#46 “Initial system-wide information management (SWIM) technology solution”	IS-0901-A	V3 – SESAR Release 5 (2016)
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References

Organization

Delivery

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References

Organization

Delivery

Doc 9965 - Manual on Flight and Flow — Information for a Collaborative Environment (FF-ICE)

ICAO

Published

Doc 9854 - Global Air Traffic Management Operational Concept

ICAO

Published

Doc 10039 - Manual on System Wide Information Management (SWIM) concept

ICAO

Published

SPEC-168 SWIM Service Description Edition 1.0

EUROCONTROL

Published

SPEC-168 SWIM Service Description Edition 1.1

EUROCONTROL

Q4/2021

SPEC-169 SWIM Information Definition

EUROCONTROL

Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
SPEC-170 SWIM Technical Infrastructure Yellow Profile Edition 1.1	EUROCONTROL	Published
AIRM model (AIRM Community area)	EUROCONTROL	Published
Supporting material for SWIM foundational specifications	EUROCONTROL	Published
FIXM Implementation Guidance v.4.0.1	EUROCONTROL	Published
Globally Unique Flight Identifier (GUF1) Requirements		Published
NM B2B technical documentation	Network Manager	Published
Network Strategy Plan (NSP): SO 2/1, SO 2/4 and SO 4/3	Network Manager	Published

V5 – Deployment Phase

Target Date

31/12/2025

SDM View

NM will be the provider of all the services in this family. The transition to FF ICE R1- becoming the consumer of the services is a critical enabler for achieving the level of collaboration envisaged in CP1 and beyond. In terms of deployment it is the last progressed family so far and focus from all stakeholders is needed.

ATM Functionality 6 – Initial Trajectory Information Sharing

Family 6.1.1 – Initial air-ground Trajectory Information Sharing (Airborne Domain)

EOC: Trajectory-based operations

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#115 Extended projected profile (EPP) availability on ground	IS-0303-A	V3 – SESAR Release 5 (2016)
VLDs		Date
PJ.31		SESAR Release 9 (2020)
PJ.38		SESAR Release 12 (2022)
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
Commission Implementing Regulation (EU) No 2020/208. Amendment of Commission Regulation (EC) No 29/2009 of 16 January 2009 laying down requirements on data link services for the single	European Commission	Published

V4 – Industrialization Phase

Regulation

References

Organization

Delivery

European sky: Update of references — Data Link Services

V4 – Industrialization Phase

Means of Compliance and/or Certification

References

Organization

Delivery

Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigation and Surveillance (CS-ACNS) Issue 2

EASA

Published

EN 301 841-1 (V 1.4.1) VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment; Part 1: Physical layer and MAC sub-layer

ETSI

Published

EN 301 841-1 (V 1.5.1) VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment; Part 1: Physical layer and MAC sub-layer

ETSI

2021

EN 301 841-2 (V 1.1.1) VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and

ETSI

Published

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
methods of measurement for ground-based equipment; Part 2: Upper Layers		
EN 301 841-2 (V 1.2.1) VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment; Part 2: Upper Layers	ETSI	Published
EN 301 841-3 (V 2.1.1) VHF air-ground Digital Link (VDL) Mode 2, Part 3: Harmonized EN covering the essential requirements of the Directive 2014/53/EU	ETSI	Published
EN 301 841-3 (V 2.2.1) VHF air-ground Digital Link (VDL) Mode 2, Part 3: Harmonized standard for access to radio spectrum	ETSI	2021
Data Link Services RMT.0524	EASA	Q3/2023

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 10037 - Global Operational Data Link (GOLD) Manual	ICAO	Published
ED 228A / RTCA DO-350A Safety and Performance Requirements Standard for Baseline 2 ATS Data Communications	EUROCAE / RTCA	Published
ED 229A / RTCA DO-351A Interoperability Requirements Standard for Baseline 2 ATS Data Communications (Baseline 2 Interop Standard)	EUROCAE / RTCA	Published
ED 230A / RTCA DO-352A Interoperability Requirements Standard for Baseline 2 ATS Data Communications and FANS 1/A Accommodation (FANS 1/A – Baseline 2 Interop Standard)	EUROCAE / RTCA	Published
ED 231A / RTCA DO-353A Interoperability Requirements Standard for Baseline 2 ATS Data Communications and ATN Baseline 1 Accommodation (ATN Baseline 1 - Baseline 2 Interop Standard)	EUROCAE / RTCA	Published
ED-92C VDL 2 Airborne MOPS (Minimum Operational Performance Standard (MOPS) for an Airborne VDL Mode-2 System Operating in the Frequency Range 118-136.975 MHz)	EUROCAE	Published
ED-242B MASPS for AMS(R)S Data and Voice Communications Supporting Required	EUROCAE	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Communications Performance (RCP) and Required Surveillance Performance (RSP)		
ED-242C Revision of MASPS for AMS(R)S Data and Voice Communications Supporting Required Communications Performance (RCP) and Required Surveillance Performance (RSP)	EUROCAE	Q3/2021
ED-243B MOPS (Minimum Operational Performance Standards) for Avionics Supporting Next Generation Satellite Systems (NGSS)	EUROCAE	Published
ED-243C MOPS (Minimum Operational Performance Standards) for Avionics Supporting Next Generation Satellite Systems (NGSS)	EUROCAE	Q3/2021
ED-276 Guidance on Air to Ground VDL Mode 2 Interoperability	EUROCAE	Published
SPEC-116 EUROCONTROL Specification on DLS Edition 2.1	EUROCONTROL	Published

V5 – Deployment Phase

Target Date

31/12/2027

SDM View

ADS-C/EPP deployment roadmap on Airbus side (A320/A330/A350) is established based on ATN/OSI communication protocols, except for the A220 family. However, for all other manufacturers and especially Boeing, development/industrialisation and of course deployment roadmaps are not yet defined. Moreover, it seems that US manufacturers are in favour of the FAA Datacom roadmap by implementing ATS B2 standards over IPS protocol only. If this is the case, the diversion of the European Regulation to implement ADS-C/EPP on ATN/OSI requires a close monitoring and strong management. FANS-1/A+, providing ADS-C Position Reporting, is already in service.

Family 6.1.2 – Initial Air-Ground Trajectory Information Sharing (ground domain)

EOC: Trajectory-based operations

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#115 “Extended projected profile (EPP) availability on ground”	IS-0303-A	V3 – SESAR Release 5 (2016)
#18-06b1 “NM trajectory Performance Improvement”	POI-0011-IS	Not achieved
VLDs		Date
PEGASE		SESAR Release 5 (2016)
PJ.31		SESAR Release 9 (2020)
PJ.38		SESAR Release 12 (2022)

V4 – Industrialization Phase

Regulation

References	Organization	Delivery
Commission Implementing Regulation (EU) No 2020/208. Amendment of Commission Regulation (EC) No 29/2009 of 16 January 2009 laying down requirements on data link services for the single European sky: Update of references — Data Link Services	European Commission	Published

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
EN 303 214 (V 1.2.1) Data Link Services (DLS) System; Community Specification; Requirements for ground constituents and system testing	ETSI	Published
EN 303 214 (V 1.3.1) Data Link Services (DLS) System; Community Specification; Requirements for ground constituents and system testing	ETSI	2021
EN 301 841-1 (V 1.4.1) VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based	ETSI	Published

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
equipment; Part 1: Physical layer and MAC sub-layer		
EN 301 841-1 (V 1.5.1) VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment; Part 1: Physical layer and MAC sub-layer	ETSI	2021
EN 301 841-2 (V 1.1.1) VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment; Part 2: Upper Layers	ETSI	Published
EN 301 841-2 (V 1.2.1) VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment; Part 2: Upper Layers	ETSI	Published
EN 301 841-3 (V 2.1.1) VHF air-ground Digital Link (VDL) Mode 2, Part 3: Harmonized EN covering the essential requirements of the Directive 2014/53/EU	ETSI	Published
EN 301 841-3 (V 2.2.1) VHF air-ground Digital Link (VDL) Mode 2, Part 3: Harmonized standard for access to radio spectrum	ETSI	2021
SPEC-0106 On-Line Data Interchange (OLDI) Edition 4.3, Community Specification CS 2019/C 31/06	EUROCONTROL	Published

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
SPEC-0106 On-Line Data Interchange (OLDI) Edition 5.0	EUROCONTROL	Published (waiting to be listed in OJEU)
SPEC-0107 EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) Edition 3.2, Community Specification	EUROCONTROL	Published
SPEC-0107 EUROCONTROL Specification for ATS Data Exchange Presentation (ADEXP) Edition 3.3, Community Specification	EUROCONTROL	Published (waiting to be listed in OJEU)
Data Link Services RMT.0524	EASA	Q3/2023

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
ED 228A / RTCA DO-350A Safety and Performance Requirements Standard for Baseline 2 ATS Data Communications	EUROCAE/RTCA	Published
ED 229A / RTCA DO-351A Interoperability Requirements Standard for Baseline 2 ATS Data Communications (Baseline 2 Interop Standard)	EUROCAE/RTCA	Published

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
ED 230A / RTCA DO-352A Interoperability Requirements Standard for Baseline 2 ATS Data Communications and FANS 1/A Accommodation (FANS 1/A – Baseline 2 Interop Standard)	EUROCAE/RTCA	Published
ED 231A / RTCA DO-353A Interoperability Requirements Standard for Baseline 2 ATS Data Communications and ATN Baseline 1 Accommodation (ATN Baseline 1 - Baseline 2 Interop Standard)	EUROCAE/RTCA	Published
ED-242B MASPS for AMS(R)S Data and Voice Communications Supporting Required Communications Performance (RCP) and Required Surveillance Performance (RSP)	EUROCAE	Published
ED-242C Revision of MASPS for AMS(R)S Data and Voice Communications Supporting Required Communications Performance (RCP) and Required Surveillance Performance (RSP)	EUROCAE	Q3/2021
ED-276 Guidance on Air to Ground VDL Mode 2 Interoperability	EUROCAE	Published

V5 – Deployment Phase

Target Date

31/12/2025¹

SDM View

The concept of operation and standard operating procedures of EPP usage still needs to be validated at SJU level. FOC by 2025 seems not to be realistic, currently there is only one ACC in operation (MUAC), but there are currently no confirmed plans for other ACCs.

¹ Maastricht UAC already uses the operational downlinking and processing of ADS-C/EPP data.

Family 6.2.1 – Network Manager Trajectory Information Enhancement

EOC: Trajectory-based operations

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#18-06b1 “NM trajectory Performance Improvement”	POI-0011-IS	Not achieved
VLDs		Date
None		N/A
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery
None	N/A	N/A

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
Data Link Services RMT.0524	EASA	Q3/2023

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Network Strategy Plan (NSP): SO 4/5	Network Manager	Published

V5 – Deployment Phase

Target Date
SDM View

The non-availability of a confirmed planning and validation activities are seen as a significant risk.

Family 6.3.1 – Initial Trajectory Information Sharing Ground Distribution

EOC: ATM interconnected network

V3 – Development Phase		
SESAR Solutions	OIs	V3 Achievement Date
#115 “Extended projected profile (EPP) availability on ground”	IS-0303-A	V3 – SESAR Release 5 (2016)
VLDs		Date
PJ.31		SESAR Release 9 (2020)
PJ.38		SESAR Release 12 (2022)
V4 – Industrialization Phase		
Regulation		
References	Organization	Delivery

V4 – Industrialization Phase

Means of Compliance and/or Certification

References	Organization	Delivery
Data Link Services RMT.0524	EASA	Q3/2023

V4 – Industrialization Phase

Guidance Material / Specifications / Standards

References	Organization	Delivery
Doc 10037 - Global Operational Data Link (GOLD) Manual	ICAO	Published
CADS (Centralized ADS-C System), CS, Version 2.0	ICAO Regional Office Paris	Published
ICAO Doc 9896 Manual for the ATN using IPs standards and protocols	ICAO	Published
ICAO Doc 9880 Manual on detailed technical specifications for the aeronautical telecommunication network (ATN) using ISO/OSI standards and protocols (ASN.1)	ICAO	Published
SPEC-170 SWIM Technical Infrastructure Yellow Profile Edition 1.1	EUROCONTROL	Published
Network Strategy Plan (NSP): SO 2/1 and SO 4/5	Network Manager	Published

V5 – Deployment Phase

Target Date

31/12/2027

SDM View

In Family 6.3.1, the implementation of data ground distribution is highly dependent on the outcomes of SJU PJ38. SJU must deliver a solid definition of interfaces for data distribution like an Interface Control Document (ICD). Such a description is key to close the V4 gap, which has already been identified. SDM sees a high risk not to meet the intended maturity gate and ADS-C/EPP data distribution on ground is highly endangered.

Notes