



Final Project Report

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Abstract

The Standardisation and Regulatory Roadmaps project addressed the development and implementation of a comprehensive standards and regulatory management process, fully integrated within the SESAR Master Plan maintenance and interfaced with SJU work programme, from the early identification of needs for new standards to their definition, development and validation.

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This deliverable consists of SJU foreground.

Acronyms

Acronym	Definition
ATM	Air Traffic Management
eRIA	Early Regulatory Impact Assessment
EASCG	European ATM Standards Coordination Group
CLM	SESAR Concept Lifecycle Model
E-OCVM	European Operational Concept Validation Methodology
SJU	SESAR Joint Undertaking
OI	Operational Improvement
EN	Enabler
DP	Deployment Package
DS	Deployment Scenario
SDO	Standards-Developing Organisation (in the frame of the EASCG)
CEN	European Committee for Standardisation
CENELEC	European Committee for Electrotechnical Standardisation
ETSI	European Telecommunication Standards Institute
ICAO	International Civil Aviation Organisation
EC	European Commission
EASA	European Aviation Safety Agency
SWIM	System-Wide Information Management
EUROCAE	European Organisation for Civil Aviation Equipment
SESAR	Single European Sky ATM Research
ESO	European Standards Organisation

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1 Project Overview

The project supported the Master Plan maintenance activity by providing input in accordance with the overall deployment scenarios and plan, and monitored the development of standardisation and regulatory material to identify any issue or delay affecting the overall deployment scenarios and plan.

1.1 Project progress and contribution to the Master Plan

The project contributed to the update of the ATM Master Plan editions of 2012 and 2015, directly for what the standardisation and regulatory roadmaps concerns, but also throughout the preparation and the execution of the campaign, in collaboration with other transversal area projects, to build robust input to the Master Plan

The development of the standardisation and regulatory roadmaps were done according to the respective standardisation and regulatory roadmap development processes.

Identification of the standardisation and regulatory needs, when not directly communicated by R&D projects, was done through a combination of the following activities:

- gap analysis of the System Enablers and Operational Improvements;
- analysis of the architecture and deployment scenarios, in coordination with other projects from the Master Plan Maintenance, Target Concept and Architecture Maintenance and other Transversal Areas (Safety, Security, Environment, Human Performance and Cost-Benefit Analyses) work packages;
- participation to system engineering reviews of SESAR Solutions, which are part of the SESAR Concept Lifecycle Model (CLM), itself being based on the European Operational Concept Validation Methodology (E-OCVM).

The validation of the needs was performed through the application of the Standardisation Cases, an approach providing the formal assessment of the maturity of relevant materials to be used by standardisation bodies, and early Regulatory Impact Assessments, based on impact assessment best practices and better/smart regulation principles. Both tools were developed at the initiation of the project and fine-tuned during its life cycle.

1.2 Project achievements

Being a transversal project, the project was not set-up to contribute to one or more OIs/ENs specifically, but instead contributed to a better identification of standardisation and regulatory dependencies (through the maintenance of the standardisation and regulatory roadmaps), to the improvement and maintenance of the integrated roadmap as a whole, and to more credible deployment planning in general

The standardisation roadmap of the ATM Master Plan 2012 led the European Commission to issue a standardisation mandate to the European Standardisation Organisations (ESO) ([4]).

The ATM Master Plan 2012 was also later used by the SJU to define the content of the Pilot Common Project, incl. its associated "Indicative roadmap with respect to standardisation and regulation".

The project contributed to the maintenance of the integrated roadmap and the master plan portal content via the repeated top-down and bottom-up analyses of the enablers and operational improvements it conducted throughout its execution.

By initiating monitoring of the standardisation and regulatory roadmaps content, the project also helped linking the content of the Master Plan and roadmaps with the work programme of the standardisation

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and regulatory organisations, and providing a reference for regional and global standardisation coordination activities.

Last but not least, the project conducted a number of detailed impact assessments on operational changes, incl. notably the ATM Master Plan 2015 Essentials, which may be used as supporting material by decision makers.

The 'Success Tree' developed as part of the project's lessons learned workshop highlighted the following project achievements, together with the main driving factors behind them:

- Completion of the bottom-up analysis of the Integrated Roadmap system enablers in preparation of the ATM MP 2015 update campaign, showing the flexibility and pragmatism of the project process, experts and project management in the absence of needs identified by SESAR R&D projects.
- Accomplishment of good quality eRIAs on the 'Essentials' of the ATM MP 2015, benefitting from the well-defined operational changes resulting from the cross-project ATM MP update process. This good quality analysis arose from the availability of suitable expertise, the use of a proven template/structured process but also the sufficient time available for the early Regulatory Impact Assessment (eRIA) analysis after the completion of the ATM MP update campaign.
- Conclusion of several Standardisation Case workshops, thanks to the involvement of project partners with awareness of current standardisation processes within Standards Developing Organisations (SDOs), the use of a proven template/structured process and clear needs identified by SESAR projects (e.g. System Wide Information Management, SWIM, security).
- The development of a generic industrialisation and deployment "Timeline and Sequencing Model", in coordination with the rest of the Master Plan Maintenance work package, and with the involvement of appropriate air/ground expertise in the areas of manufacturing, procurement, and standards/regulatory processes.
- Good coordination with EUROCAE, in part thanks to the membership of some project partners. EUROCAE also directly reviewed project deliverables, sharing some goals/objectives with the project regarding industrialisation.

The beneficial impacts of these areas of success were assessed as follows:

- Errors and inconsistencies with system Enablers and Operational Improvements were identified and refined;
- Institutional Enablers were improved in the Integrated Roadmap data set;
- Refined content of the regulatory and standardisation roadmaps;
- Improved realism of deployment planning (through the definition of a generic timeline and sequencing model in the deployment package and scenario methodology, and through the monitoring of actual standardisation and regulatory progress).

1.3 Project Deliverables

The following table presents the relevant deliverables that have been produced by the project.

Reference	Title	Description
D44	Standardisation Roadmap Development and Maintenance Process (2015)	This is the fifth and final yearly revision of the process applied by the project in the development and maintenance of the standardisation roadmap, including a description of the standardisation case tool.

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D04-005	List of Standardisation Activities 2016	This is the fifth and final yearly revision of the consolidated list of proposed activities to develop standardisation material, arising from standardisation cases and other analyses. Subject to acceptance and implementation of the corresponding change requests, it corresponds to the list of standardisation enablers in the matching integrated roadmap dataset.
D05-005	Standardisation Roadmap 2016	This is the fifth and final yearly revision of the high-level description of the proposed standardisation activities (contained in D04), presented as an update to the European ATM Master Plan. The initial revision (D05) reflected the contribution to the published ATM Master Plan Edition 2012, while the fourth revision (D05-004), reflected the contribution to the published ATM Master Plan Edition 2015.
D10-004	Monitoring Progress Reports - Standardisation 2016	This is the fourth and final yearly revision of the report monitoring the actual progress of standardisation activities identified by the project and undertaken by standardisation organisations such as EUROCAE, ICAO, the ESOs (CEN/CENELEC/ETSI).
D47	Regulatory Roadmap Development and Maintenance Process (2015)	This is the fifth and final yearly revision of the process applied by the project in the development and maintenance of the regulatory roadmap, including a description of the early regulatory impact assessment tool.
D07-005	List of Regulatory Activities 2016	This is the fifth and final yearly revision of the consolidated list of proposed activities to develop regulatory material, arising from early Regulatory Impact Assessments and other analyses. Subject to acceptance and implementation of the corresponding change requests, it corresponds to the list of regulatory enablers in the matching integrated roadmap dataset. This final revision contains a summary of the early Regulatory Impact Assessments conducted on the ATM Master Plan 2015 Essential Operational Changes
D08-005	Regulatory Roadmap 2016	This is the fifth and final yearly revision of the high-level description of the proposed regulatory activities (contained in D07), presented as an update to the European ATM Master Plan. The initial revision (D08) reflected the contribution to the published ATM Master Plan Edition 2012, while the fourth revision (D08-004), reflected the contribution to the published ATM Master Plan Edition 2015.
D11-004	Monitoring Progress Reports - Regulation 2016	This is the fourth and final yearly revision of the report monitoring the actual progress of regulatory activities identified by the project (due 30/06/2016).

Chapter 2 includes references to all project deliverables, as well as to other projects' deliverables to which the current project contributed significantly: ATM Master Plan document and portal updates, integrated roadmap datasets, deployment package and scenarios definition (incl. methodology) and SESAR I business case.

1.4 Contribution to Standardisation

The project helped identifying and validating standardisation needs for the SESAR solutions, and building deployment scenarios that are consistent with the standardisation pre-requisites.

The EC, EASA, EUROCAE, CEN/CENELEC/ETSI, the SJU and EUROCONTROL have come together to address how they can put into effect enhanced cooperation and coordination to ensure the effective use of the available resources within the ATM-related European standardisation development organisations. The parties involved in the planning and development of ATM related standards have therefore agreed between themselves to establish the European ATM Standards Coordination Group (EASCG).

The EASCG coordinates monitors and maintains an overarching European ATM standardisation rolling development plan, based on the latest developments from the SESAR framework, notably the standardisation roadmap maintained by the project.

1.5 Project Conclusion and Recommendations

The development and maintenance of a standardisation and regulatory roadmap is crucial to properly capture the full scope of necessary industrialisation activities, and integrate them in the overall ATM master planning.

It is also vital to understand the project customers' requirements to deliver the right input to the standards development planning and regulatory decision making processes.

The main project recommendations are as follows:

- Future Standardisation Roadmaps should be designed to feed the EASCG Rolling Development Plan;
- SESAR 2020's Master Plan Maintenance project should continue to employ the Standardisation Case and eRIA tools and methodologies.

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