# Final Project Report

| Document information | |
|---|---|
| Project Title | ATM Security |
| Project Number | 16.02._ |
| Project Manager | EUROCONTROL |
| Deliverable Name | Final Project Report |
| Deliverable ID | D04-011 |
| Edition | 00.01.00 |
| Template Version | 03.00.00 |
| **Task contributors** | |
| *EUROCONTROL* | |

**Abstract**

The SWP16.02 was responsible for tracking the technical progress, schedule, resource consumption, risks, issues and opportunities of all SWP16.02 projects and deliverables. SWP16.02 was also responsible for change management at the SWP and Project level.
SWP16.02 has played a key role in coordinating the delivery of tools and methods to 16.06.02 for the production of the SESAR ATM Security Reference Material.
Since 01.01.2014, all SWP16.02 projects have been merged with 16.06.02. Consequently, 16.06.02 will inherit the responsibilities of SWP16.02 after its closure.

# Authoring & Approval

| Prepared By - *Authors of the document.* | | |
|---|---|---|
| Name & Company | Position & Title | Date |
| ███████ EUROCONTROL | ████████████████ | c.f. Document History |
| | | |

| Reviewed By - *Reviewers internal to the project.* | | |
|---|---|---|
| Name & Company | Position & Title | Date |
| ███████ EUROCONTROL | ████████████████ | c.f. Document History |
| | | |

| Reviewed By - *Other SESAR projects, Airspace Users, staff association, military, Industrial Support, other organisations.* | | |
|---|---|---|
| Name & Company | Position & Title | Date |
| <Name / Company> | <Position / Title> | <DD/MM/YYYY> |
| | | |

| Approved for submission to the SJU By - *Representatives of the company involved in the project.* | | |
|---|---|---|
| Name & Company | Position & Title | Date |
| ██████ EUROCONTROL | ████████████████ | c.f. Document History |
| | | |

| Rejected By - *Representatives of the company involved in the project.* | | |
|---|---|---|
| Name & Company | Position & Title | Date |
| <Name / Company> | <Position / Title> | <DD/MM/YYYY> |
| | | |

| Rational for rejection |
|---|
| None. |

# Document History

| Edition | Date | Status | Author | Justification |
|---|---|---|---|---|
| 00.00.01 | 12/08/2014 | | █████████ | New Document |
| 00.01.00 | 14/08/2014 | | █████████ | Final updates inserted |

# Intellectual Property Rights (foreground)

This deliverable consists of SJU foreground.

# 1 Project Overview and Scope

The SWP16.02 was responsible for tracking the technical progress, schedule, resource consumption, risks, issues and opportunities of all Sub-WP16.02 projects and deliverables. 16.02 was also responsible for change management at the Sub-WP and Project level.

SWP16.02 was also responsible for contributing to WP16 progress reports and for coordination between SWP16.02 and its Projects, WP16, other SWP16.0x, and SJU.

Another role of SWP16.02 was consultation with stakeholders not actively participating in the SJU Work Programme, and with relevant projects, authorities and bodies outside SESAR, including EC, ECAC, ICAO, NSAs, airspace users, ANSPs and police and law-enforcement.

The Sub-WP16.02 projects were as follows :

> 16.02.01 – ATM Security Framework
>
> 16.02.02 – Security Management Tools
>
> 16.02.03 – Security Risk Assessment Methodology
>
> 16.02.04 – Security Validation Process
>
> 16.02.05 – Harmonised ATM Security Best Practices

The 16.02.0x projects were responsible for developing methods and tools, which were delivered to 16.06.02 (ATM Security Coordination and Support) for integration in the ATM Security Reference Material. The Reference Material is provided to OFAs, projects, and enablers to assist them in carrying out ATM Security activities.

The 16.02.0x projects have been closed since 01.01.2014, with outstanding activities being merged with 16.06.02. The responsibility for the remaining deliverables of the 16.02.0x projects has also been transferred to 16.06.02.

# 2 Contribution to Deployment

The transition from the current ATM system to that arising from SESAR in the future requires a number of evolutionary changes. These include the following :

- New operational concepts

- More widespread use of open standards

- The integration of more Commercial, Off-The-Shelf products

- More interconnected systems

- More data sharing

These changes are intended to bring about costs reductions and performance improvements in the form of, form example, reduced delays, increased capacity, and improved safety.

However, these changes may result in the introduction of new vulnerabilities in the ATM system, increasing both the likelihood and the impact of the ATM system being compromised.

To ensure that the ATM system remains secure and resilient in the future, it is necessary to integrate security into all phases of the system life-cycle, from concept, through industrialisation, operations, and all the way through to decommissioning. In essence, security must be designed-in. Retro-fitting (as with other system requirements) can be expensive, sub-optimal, or simply not feasible.

16.02 has played a key role in setting out to achieve this in SESAR  by ensuring the coordination of the 16.02.0x projects in delivering the tools and methods necessary for security to be addressed appropriately in V1, V2, and V3. Where considered necessary for the purposes of continuity of certain activities into subsequent V-phases, appropriate recommendations have been made.

# 3  Achievements

SWP 16.02 has overseen the development, production and delivery of the methods and tools necessary for the production of the SESAR ATM Security Reference Material.

The deliverables include :

- The SESAR Security Management Framework

- The SESAR Security Risk Assessment Methodology (SecRAM)

- Guidance material supporting the application of the SecRAM by OFAs, projects, and enablers

- A minimum set of controls to be applied by all OFAs, projects and enablers

- A validation process

16.06.02 has integrated these deliverables into the SESAR ATM Security Reference Material, and has supported and coordinated the practical application of the material within SESAR OFAs, projects and enablers.

Security Risk Assessments carried out so far using the ATM Security Reference Material have identified security risks and recommended appropriate controls to mitigate those risks to an acceptable level.

# 4  Deliverables

Under the auspices of 16.02, the following deliverables were produced by the 16.02.0x projects :

16.02.01 :
- D03 : ATM Security Risk Assessment Methodology – version 0 [5]
- D04 : ATM Security Management Framework [6]

16.02.03 :
- D02-003 : ATM Security Risk Assessment Methodology [7]
- D03-003 : Implementation Guidance [8]

16.02.04 :
- D02 : Analysis of Methods and Tools for SESAR Security Validation [9]
- D03 : Security Validation Process [10]

16.02.05 :
- D02 : ATM Security Compendium [11]

As a consequence of the above deliverables being produced, 16.06.02 was able to proceed with the delivery of the following :

- The ATM Security Reference Material for 2010, 2012 and 2013 [12] [13]
- ATM Security Awareness and Training Material for presentation to OFAs, projects and enablers

As a result of the merge of the 16.02.0x projects into 16.06.02, the responsibility for remaining 16.02.0x tasks and deliverables now lies with 16.06.02.

# 5 Standards

Project 16.02.05 D04, "Proposal for Modification of ATM Regulations" makes recommendations for modification of a number of regulations, including the following : EC 1035/2011; EC 73/2010; EC 677/2011; ICAO ATM Security Manual; ICAO Annex 17.

In the future, these recommendations may have an impact on the regulations and on standards and best practices applied in ATM Security.

# 6  Observations and Recommendations

In order to refine their deliverables, the 16.02.0x projects depended on information from 16.06.02 on feedback received from OFAs, projects and enablers on the practical application of their material. The reception of feedback was initially slow for a number of reasons :

- The WP16 projects started later than originally anticipated, resulting in the absence of ATM Security Reference Material when the OFAs, projects, and enablers began their work

- In the majority of cases, no tasks were (are) defined, nor resources allocated for security

- Operational and technical documentation contained few references to security (this is in the process of being addressed)

Consequently, there was some reluctance within SESAR to engage with security, with feedback being received from a limited number of actors.

The task of further refining the Reference Material will be inherited by 16.06.02. In order to improve engagement with security and push the final enhancement of the Reference Material, the following recommendations are proposed :

- Make the application of the Security Reference Material mandatory in all OFAs, projects and enablers

- Update and quickly release operational and technical documentation templates which include security

- Resource security activities

- Pro-actively sell the need to address security within SESAR

# 7 References

**[1]** SESAR Programme Management Plan, Edition 03.00.01

**[2]** European ATM Master Plan, Edition 2

**[3]** Multilateral Framework Agreement ("MFA") signed between the SJU, EUROCONTROL and its 15 selected members on August 11, 2009, amended on 14 June 2010, 19 October 2010 and 2 July 2012

**[4]** SCH_16.02_Current_Plan, 23/05/2014

**[5]** 16.02.01, SESAR ATM Security Risk Assessment Methodology – version 0, D03, 00.01.00, 13/05/2011

**[6]** 16.02.01, SESAR ATM Security Management Framework, D04, 00.01.00, 03/07/2012

**[7]** 16.02.03, SESAR ATM Security Risk Assessment Methodology, D02-003, 00.01.05, 05/07/2013

**[8]** 16.02.03, SESAR ATM Security Implementation Guidance, D03-003, 00.02.06, 08/05/2013

**[9]** 16.02.04, Analysis of Methods and Tools for SESAR Security Validation, D02, 00.01.00, 23/09/2011

**[10]** 16.02.04, Security Validation Process, D03, 00.01.00, 03/04/2013

**[11]** 16.02.05, ATM Security Compendium, D02, 00.01.00, 07/05/2013

**[12]** 16.06.02, SESAR ATM Security Reference Material – Level 1, D101, 00.04.00, 27/02/2013

**[13]** 16.06.02, SESAR ATM Security Reference Material – Level 2, D101, 00.03.01, 02/05/2013

**-END OF DOCUMENT-**