



Final Project Report

Document information

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Task contributors

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Abstract

This Final Project Report summarises the achievements of SESAR JU project 16.04.03, Impact of Future Systems and Procedures on Selection, Training, Competence and Staffing (including Advanced Automation), resulting in a set of tools enabling the analysis of consequences of future procedures and technologies for selection and training profiles for affected operational aviation staff. The lessons learned, the contribution to higher level implementation planning and the deliverables as such are outlined:
TACAT (Training Proactive Analysis tool, for ATC, ATSEP, and pilots)
SELAT (Selection Proactive Analysis tool)

Authoring & Approval

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Intellectual Property Rights (foreground)

This deliverable consists of SJU foreground.

1 Final Project Report

1.1 Introduction

Human Performance is a major cornerstone of ATM performance. In the context of the SESAR top down performance based approach to innovation of European aviation, the systematic management of Human Performance impacts is an integral part of the programme.

As the question of appropriate training and selection of operational staff applying future procedures and technologies has always been a subject of discussion, SESAR's Human Performance Reference Material should also contain methods and tools to address this aspect.

1.2 Project aims

The project produced as planned in the PIR and in succeeding Change Requests (CR 1275), tools enabling the analysis of consequences of future procedures and technologies for selection and training profiles for affected operational aviation staff. These tools complement the SESAR Human Performance Reference Material with regard to the argument related to training and selection of staff.

The project results do thus not directly contribute to specific Operational Improvement Steps. It is however supporting the transversal area assessments and, if applicable, can support Human enablers supporting the implementation of the ATM Master Plan.

The project results do also nor result in a standard as defined in the MFA. The 16.04.03 deliverables however support the systematic and comparable analysis of consequences of future systems and procedures for selection and training of operational staff.

1.3 Project achievements

The major achievements of the projects can be seen in a shared and validated understanding of systematically capturing possible consequences of procedural or technical changes to the ATM system for affected operational staff. This is an R&D and also implementation related question which is often addressed but has rarely been examined empirically and systematically.

Regarding the ATM performance targets, the application of the tools have the potential to enhance the performance by appropriately preparing operational staff, resulting in a timely and cost efficient deployment.

To achieve this, the scope of the project moved from examining impacts and developing frameworks to the production of tangible tools providing relevant evidence in the course of validation exercises or other activities preparing the deployment of a new technology. As a consequence, two projects originally dealing with this topic were merged to concentrate the resources of the identical project teams on the production of tools.

A further significant change to the original scope of the merged project 16.04.03 was the need to completely give up the planned STAFFAT proactive analysis tool analysing impacts on staffing needs. This was due to a lack of contributions enabling a finalisation of this tool at a comparable and usable level. In addition, the processing of results of the validation of the draft tools in project 16.06.05 will be finalised in project 16.06.05 as the validation took longer than expected and longer than this project's life cycle. In accordance with the SESAR Joint Undertaking these changes have been implemented through CR 1973 and CR 2016.

1.4 Project deliverables

The deliverables resulting from this project are:

| Del. code | Deliverable Name | Description | Assessment Decision | Explanations |
|-----------|---------------------------|--|---------------------|--|
| D 01 | Impacts of future systems | The present report represents the closure report itself. | Open | Delivered in preparation of Closure Gate |

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| | and procedures on STCS requirements: Closeout Report | Furthermore this deliverable also encompassed the documents and steps necessary for the project management as documented in the SJU Extranet: The plan for executing project activities, reviewed on an annual basis through the gate process, and covering: Description of the project governance and reporting processes; Detailed task descriptions; Assignments of deliverables to be produced by specific partners in accordance with the approved PIR; Detailed planning of the tasks and deliverables; Description of approval, reporting and escalation processes; .Risk, opportunity and issue management; .Quality assurance management. Quarterly progress reports to regularly assess progress and any deviations from the PEP, including reports on the status of risks, issues, opportunities, project actions, project quality activities, and project deliverables. | | |
| D 02 | Impacts of future systems and procedures on STCS requirements: Identified Issues | The report refines the selection, training, competence & staffing issues that need to be addressed during the SESAR development phase. It will be based on the analysis already made in the frame of the definition phase, on a literature review and on direct discussion with SESAR WP16 projects. | NO reservations | |
| D 03 | Impacts of future systems and procedures on STCS requirements: Good Practice Material - Report | The deliverable describes the good practices and Human performance assurance activities that can be performed in order to capture the selection, training, competence, staffing requirements during the project developments. | Open | |
| D 04 | SELAT Selection requirements proactive analysis tool developed | A complete, applicable version of a tool enabling the proactive analysis of selection requirements profile impacts of future SESAR operational and technical changes. It includes a short description, detailed user guidance and related tools and/ or templates. | Open | D04 handover contains the User guidance. The detailed material is part of D07. |
| D 05 | TACAT Training and competence proactive analysis tool | A complete, applicable version of a tool enabling the proactive analysis of training needs impacts of future SESAR operational and technical changes. It includes a short description, detailed user guidance and related tools and/ or templates. If required or applicable, different tools for different operational roles. | Reservations and Clarifications required | Under Revision, will be re-submitted. D04 handover contains the User guidance. The detailed material is part of D07. |
| D 07 | Finalisation of proactive analysis tools | Finalised tools based on validation and trialling results with defined conditions of use. According to CR 1973 the final tool deliverables will be identical to D04 and D05 as the validation in 16.06.05 could, for many | Open | Contains the detailed material for applying the tools in addition to the user guidance of D04/ D05. |

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| | | reasons, not be finalised in the lifecycle of 16.04.03. D07 contains the detailed tool material, D04/05 consist of the User guidance for their application. | | |
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1.5 Recommendations

Concerning the future use of the tools it must be stressed, that as laid down in the user guidance, they must be applied by training or selection experts. Furthermore the final versions to be produced in 16.06.05 will be better adapted to the needs of validation exercises. However, a complex question as the ones on future training and selection profiles, deserves a complex analysis which in turn needs some expertise and time. However, the tools should be well usable by experts in this area.

A further need for finalisation of the tools will be the clarification of the IPR issues around the SELAT tool for which the external IPR owner has granted permission only for SESAR internal validation so far. For the final versions, conditions will have to be negotiated and published with the final version. It may be that the application of the tool will be subject to license charges.

With regard to the future execution of the SESAR Definition Phase and following programmes such as SESAR 2020, the application of the HP Reference Material including recommendations to use tools as the ones delivered in this projects, should become mandatory, apart from purely technical validations or developments. Only by a consistent application of HP assessments and a systematic analysis of question like the effect on recruitment and training profiles it can be assured that HP related impacts on deployment will be considered to ensure a timely and efficient implementation.

2 References

Reference to main documentation, delete if not required

- [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_16.04.03_Latest_Approved_Baseline.mpp on https://extranet.sesarju.eu/WP_16/Project_16.04.03/LatestLatest Project baseline (to be completed by project)
- [5] 16.04.03, Impacts of future systems and procedures on STCS requirements-Good Practice Material, D03, Edition 00.01.01.
- [6] 16.04.03, SELAT User Guidance, D 04, Edition 00.01.01.
- [7] 16.04.03, TACAT Pilots User Guidance, D 05, Edition 00.01.01.
- [8] 16.04.03, TACAT ATC User Guidance, D 05, Edition 00.01.01.
- [9] 16.04.03, TACAT ATSEP User Guidance, D 05, Edition 00.01.01.