SESAR Solution Regulatory Overview

Enhanced STCA for TMA specific operations

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Abstract

This document contains an overview of the SESAR Solutions documented recommendations from regulatory, standardisation, oversight and certification perspectives resulting from the cooperation with EASA and National Authorities.

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1 Introduction

The purpose of this document is to provide an overview of the SESAR Solutions documented recommendations from regulatory, standardisation, oversight and certification perspectives resulting from the cooperation with EASA and National Authorities.

The document presents the recommendations issued by the National Authorities and EASA, for an acceptable deployment of the concepts contained in the SESAR Solution. These recommendations must be taken into consideration by the entities in charge of deployment of the correspondent SESAR Solution.

2 General recommendations

In general terms, it must be underlined that:

1) When deploying a SESAR Solution, the compliance with all applicable regulatory requirements must be ensured by the different concerned entities;

2) In particular, it must be ensured that the appropriate safety argument for the concerned change to the ATM functional system is performed in accordance with EC regulation 1035/2011 considering local specific risks and mitigation to those risks.

3) The present SESAR Solution does not constitute in itself an acceptable Means of Compliance with the previously mentioned regulatory requirements. Means of Compliance are subject to their acceptance by the Authorities involved in each concrete local implementation.

4) A verification of the existing standardisation and regulatory frameworks has to be done at the date of local deployment to identify possible major changes to the one in use at the moment of publication of this SESAR Solution.

3 Specific recommendations

3.1 On the Regulatory Framework

- There is no specific topic on the regulatory framework field to be specially considered in deployment beyond the currently existing applicable standards.

3.2 On the Standardisation Framework

- There are currently no standards for the safety nets required to support RNP based operations. This lack might be covered by the PBN acceptable means of compliance under development by EASA.
- There are no further specific topics on the standardisation framework field to be specially considered in deployment beyond the currently existing applicable standards.

3.3 On the Regulatory Oversight and Certification Activities

When proceeding with the local implementation of this solution, and following Regulation EC 1305/2011, changes in the ATM functional system derived from the deployment of this solution are subject to the elaboration of a safety argument considering local specific risks and mitigation measures to those risks. For that, the following topics must be taken into consideration:

3.3.1 On Safety (Reg.1035/11, Annex II, Art. 3.2)

- In the elaboration of local safety arguments, several topics must be taken into account:
  - The applicable regulatory framework (if any local specificity).
  - The identification of hazards derived from local conditions.
  - The presence of pre-existing Safety Nets
  - The different En Route and TMA scenarios for various operations, and the effect of this difference in the differentiation of safety requirements for the local implementation.
  - The abnormal conditions in which safety conditions have to be verified.
  - Latencies created by the interference with other elements (radar, flight strips)
  - The level of awareness of the ATCO and their reaction to nuisance alerts.

- The presence of unavoidable nuisance alerts[1] and their impact on safety of
- The capability of the STCA able to manage data on RVSM approval of local traffic.

- At local implementation, the effects of each particular operational environment must be taken into account when allocating severity classes.
- As far as practicable, quantitative safety objectives for STCA performance should be determined at local level, in particular regarding software assurance.

3.3.2 On other regulatory domains

- Consistency between the conflict prediction algorithms and the STCA performance shall be verified at the local operational scenario.
- Within the maintenance of the system, verification of the absence of corruption of the prediction algorithms should be performed.
- A Safety Net cannot be considered a separation provision tool, as it should not provide safety credit to the nominal operation.
- At local implementation, the specific training objectives, and needs to train relevant staff associated to the operation of the solution has to be identified.

[1] This is the case, for example, when the STCA algorithm is only based on radar input and cannot use as an input the clearances that are given by the ATCO, so that the system will trigger a nuisance alert while the ATCO is aware about the fact that the conflict situation will not occur.

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