

## SMS Best Practice Submission

ANSP	NAV Portugal	Date of submission	2022-07-11
Contact Details	Email: paula.santos@nav.pt	Tel: +351 218553585	
SoE Study Area	4 - SMS Documentation, 6 – Safety Risk Management, 11 – Change Management		
Best Practice Title	MARIA – Model of ATM Reality In Action		
In use since	2018		
ANSPs using this practice	NAV Portugal		

NAV Portugal developed the Model of ATM Reality In Action (MARIA) to enable compliance with the European regulation in what concerns the safety assessment of changes to the functional system.

It is a knowledge database and a framework providing a sound base for safety analysis by describing the whole ATM system and the interdependencies between its functions. NAV Portugal systematically uses the model to support several processes, namely: change management, safety assessments, interoperability compliance and documentation.

Training for the usage of the model has already involved internal operational and technical staff, the NSA and participants from other ANSPs and Eurocontrol.

MARIA was captured via interviews and observations and describes:

- the day to day operations,
- what is needed by each function (inputs),
- who/what can perform it (responsibilities),
- applicable regulatory requirements (ICAO, EC, ...),
- and what outputs are produced.

When analysing a change, the usage of a system model has the following advantages:

1. The change has to be modelled first which will trigger questions. This allows early identification of the change stakeholders, both internal and external.
2. Makes the assessments systematic as it provides clear guidance on what should be analysed.
3. Ensures completeness and reproducibility of results
4. The participants can use MARIA as a starting point and complete it by identifying or clarifying the already existing data.
5. Reduces the effort required for the assessment of changes.
6. The resulting documentation is clear, graphical and supports improved communication with the NSA.
7. Results are reproducible.

MARIA allows for the clear description of the change scope, by the identification of the modified elements, their associated functions and by following the flows of information to get the direct and indirect effects. Covering the interaction between different domains, it brings a clearer picture of the ATM system as a whole, thus allowing early discovery of affected parties who are then involved earlier in the change process. This significantly reduces the risk associated with change implementation.

After the definition of safety requirements and safety criteria the changes are subsequently introduced in the model, producing the basis for the change monitoring process.

The definition of safety requirements is also systematic and checklists can be used. As an example,

any change affecting human resources will require training; any change to a technical function will require correct requirements, verification and validation. At an initial phase, these requirements are rather high level but as the project progresses further details are integrated. In complex projects, the high-level safety requirements were sufficient to trigger thoughts and identify underlying safety issues.

Latest developments:

Initial safety arguments for all projects, both technical and operational, are developed using MARIA. The notification of changes includes this document and is done at earlier phases of the projects. The initial safety case covers all the elements required by regulation EU 2017/373 for the notification of changes to the NSA.

BULATSA and HUNGAROCONTROL have acquired MARIA licenses and have followed the introduction training. The BULATSA model was used for the assessment of a change.

We expect to re-establish soon the MARIA interest group meetings to share experiences.

Are you willing for the proposed Best Practice to be shared with other ANSPs?

Y

This document should be sent together with the SoE in SMS questionnaire,  
to: [soe\\_2018@eurocontrol.int](mailto:soe_2018@eurocontrol.int)