

SMS Best Practice/Good Practice Submission			
State whether this is a Best or Good Practice:			
ANSP	NAV Portugal	Date of submission	2024-06-21
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SoE Study Area		4 - SMS Documentation, 6 – Safety Risk Management, 11 – Management of Change	
BP/GP title		MARIA – Model of ATM Reality In Action	
In use since		2018	
ANSPs using this practice (for BP specifically)		NAV Portugal Limited use in BULATSA and HUNGAROCONTROL	
Key Words		Functional System, Model, Change management, Risk, Documentation, Impact, Interactions	

1. Brief Description of the Safety Management Practice (BP):

Model of ATM Reality In Action (MARIA) is a Knowledge-Based Safety and Impact Assessment Model.

The Model of ATM Reality In Action (MARIA) is a tool developed by NAV Portugal to support the safety assessment of changes to the ATM (Air Traffic Management) system.

2. Justification for BP Classification:

MARIA qualifies as a Best Practice (BP) because it:

- **Provides a sound basis for safety analysis:** By describing the entire ATM system and its interdependencies, MARIA facilitates the identification of potential risks associated with system changes.
- **Reduces the risk associated with implementing changes:** The use of an explicit model avoids misunderstandings and gaps in the analysis of interdependencies, leading to safer implementations.
- **Makes assessments systematic and reproducible:** MARIA's associated processes, developed by NAV Portugal, provide clear guidelines on what should be analyzed, ensuring complete and consistent assessments.
- **Increases the efficiency and clarity of documentation:** The model facilitates the creation of clear and concise documentation, with graphical support, improving communication with the National Supervisory Authority (NSA).
- **It is continuously evolving, as well as the associated processes.**

3. Resources Required for Practice Development:

- The development of MARIA started in 2012, and the model is constantly evolving.
- NAV recently reviewed (improved) the safety processes using the model.
- More than 100 people have had the introductory training.
- The development team involved interviews and observations with operational and technical staff. More than 50 people were involved in the interviews and validation activities.
- There are no specific HW costs and the software was developed in house. It already took more than 7000 p/h to develop the software.

4. Motivation for Practice Development:

MARIA was developed to:

- **Meet European regulation:** Ensure compliance with European regulation in the safety assessment of changes to the ATM system.
- **Reduce the risk associated with changes:** Minimize the risks associated with implementing new functionalities or changes to the ATM system.
- **Improve the efficiency of the assessment process:** Make the safety assessment process more systematic, efficient, and reproducible.

5. Impact of the Practice on Safety:

MARIA has contributed to:

- **Reduced risk associated with changes:** The use of the model allows for a more comprehensive analysis of system interdependencies, minimizing the risk of unsafe implementations.
- **Improved quality of safety assessments:** The model provides clear and systematic guidelines for analysis, ensuring complete and consistent assessments.
- **Increased efficiency of the assessment process:** Reduces the time and effort required to conduct safety assessments.
- **Improved communication with the NSA:** Clear and concise documentation, based on the model, facilitates communication with the National Supervisory Authority.

The Model of ATM Reality In Action (MARIA) and the associated processes demonstrate themselves to be an effective tool to support safety management in the context of ATM system changes. The use of MARIA contributes to risk reduction, improves the quality of assessments, and increases the efficiency of the process. The extension to UTM will soon be used to assess its impact on ATM-

For these reasons, MARIA qualifies as a Best Practice (BP) in Safety Management.

By submitting this document, your organisation is willing for the proposed Best or Good Practice to be shared with other ANSPs.

For Best Practices, this document should be sent together with the SoE in SMS questionnaire, to: soe_2024@eurocontrol.int by **30th June 2024 at the latest**.

Submissions for consideration as Good Practices may be sent by the above date. They may also be identified during the survey interview sessions with the assessment team, following which a Good Practice submission document will be requested.