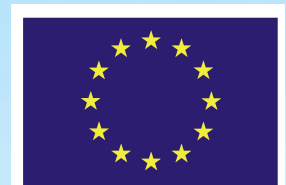


# EVP (European ATM Reference Validation Platform)



## BACKGROUND

The EVP/AMAN project is assessing the impact of introducing an AMAN from the perspectives of usability, human involvement and commitment, capacity, safety and environment as identified in the MAEVA validation strategy.

This will be achieved by a set of simulations and shadow mode trials studies introducing an AMAN and other decision support tools (with associated HMI) into the operational environments of Stockholm and Rome.

EVP/AMAN is a step to develop and validate shadow mode trials capability and methods. This work is creating the building blocks for future European Commission R&D programmes such as C-ATM and LAVA.

The project is funded by EUROCONTROL and the European Commission.

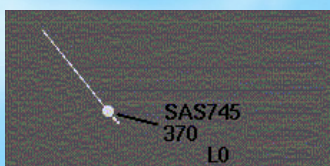
## OBJECTIVES

The goal of EVP/AMAN is first to validate the operational requirements of an EATMP Advanced Arrival Manager, and then to determine how to use AMAN as part of an integrated toolset with MTCO, DMAN and other decision support tools.

Looking to the future, EUROCONTROL aims to provide a reference for how service providers and manufacturers can achieve fully integrated controller-centred sector-level operations.

## RESULTS - AMAN

The AMAN assesses all traffic inbound to the destination airport and prepares an optimised schedule that is updated dynamically in response to new surveillance data.



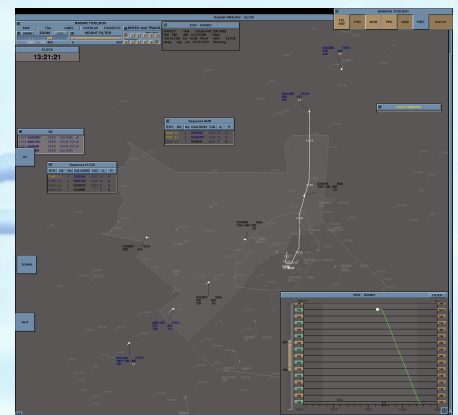
Example of AMAN Advisory "Lose 0"

The AMAN calculates advice for the ACC and APP controllers. Delay sharing functions

distribute delays across multiple upstream sectors and even to upstream ACCs, enabling improved management and distribution of the workload. By complying with the advice, controllers ensure that traffic is delivered efficiently to the runway.

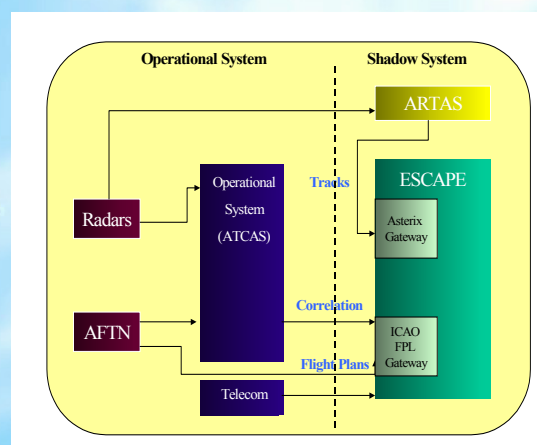
Integration of decision support tools is complex. For example, MTCO will help validate the solution for the AMAN advisories.

The information from all the decision support tools will be provided through an EATMP compliant HMI based on the "minimum information" principle.



## RESULTS - INFRASTRUCTURE

The live demonstration and trial infrastructure consists of a complete RDPS and FDPS running in shadow mode to the live system with four Controller Working Positions.



Trials Platform Infrastructure



The shadow mode system is provided by the ESCAPE (EUROCONTROL Simulation Capability and Platform for Experimentation) system with the addition of a series of gateways to convert the "live" operational data into suitable formats for ESCAPE and some specific operational functionality.

### **RESULTS - SHADOW MODE**

One means to speed up the process of introducing new tools is to actively involve stakeholders in the validation process through use of "shadow mode" techniques. In these, the proposed new system is brought into the operations room and exposed directly to controllers. In this way, controllers can quickly identify limitations or opportunities of the system, and provide early feedback to developers.

### **PLANNED DELIVERABLES**

Future simulations and trials include:

- integration of AMAN with MTCD in different working environments
- integration AMAN with Tower system and Departure Manager
- integration of air/ground concepts, such as cockpit operations and use of aircraft derived data to improve trajectory

prediction and decision support tool performance.

### **CURRENT STATUS**

A shadow mode demonstration was performed in Stockholm ACC to illustrate the use of an AMAN with the EATMP compliant HMI and fed by a live data feed from the LFV operational system. Work is now underway to prepare for a simulation and trial in Rome in 2004.

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### **PARTNERS**

EVP partners are EUROCONTROL, Luftfartsverket (LFV) and Ente Nazionale di Assistenza al Volo (ENAV).

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### **CONTACT DETAILS**

Peter MARTIN  
EUROCONTROL Experimental Centre  
Centre de Bois des Bordes BP15  
91222 Bretigny-sur-Orge Cedex, France

[peter.martin@eurocontrol.int](mailto:peter.martin@eurocontrol.int)

