

# SIXTH FRAMEWORK PROGRAMME

## Aeronautic and Space

### EMMA

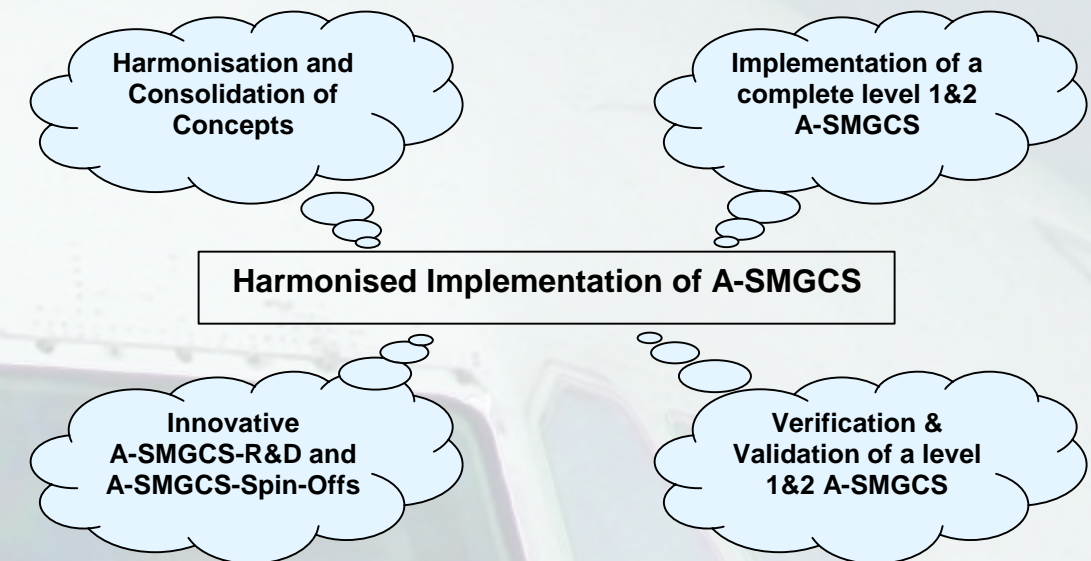
#### European Airport Movement Management by A-SMGCS

The A-SMGCS project EMMA aims to become the most significant R&D contribution to the Vision 2020 goals in its A-SMGCS subject in the 2004 to 2008 timeframe by maturing and validating the A-SMGCS concept as an integrated air-ground system, seamlessly embedded in the overall ATM system. In a two-phase approach, EMMA will first consolidate the surveillance and conflict alert functions, and in the successor project EMMAII focus on advanced onboard guidance support to pilots and planning support to controllers

The main objective of EMMA is to enable the harmonised A-SMGCS implementation at European airports. For this reason it is important to bring together the critical mass of users, research organisations and manufacturers. The EMMA consortium was build from significant Air Navigation Service Providers, Airport Operators, the biggest group of Airline Operators, an Airframe Manufacturer, Avionics manufacturers, the main European ATM manufactures and research.

A main extension of the A-SMGCS concept by EMMA will be the holistic, integrated air-ground approach, considering advanced aircraft with pilot assistance systems in a context of tower and apron controllers supported by A-SMGCS ground systems. A mature technical & operational concept as developed through EMMA will ensure consistency of traffic information given to controllers and pilots. This is the basis for a common situation awareness and safe ground operations. The associated operational concept will define the roles and tasks of the onboard and ground stakeholders and the procedures from an overall, holistic point of view. The development from reactive conflict detection and resolution towards pro-active conflict prevention will not only increase safety but also efficiency, as small plan deviations will be reduced instead of corrected.

To achieve this superior goal, tactical sub-goals were defined, as shown in the following picture:



Based on an advanced operational concept a level 1 & 2 A-SMGCS will be implemented at three European airports (Prague Ruzyně, Milano Malpensa, Toulouse Blagnac) in the first project phase, which is to be used fully operationally for a relatively long time period. The systems implemented are to be verified and validated against the predefined operational and technical requirements. On-site long term trials at these test sites and additionally at the busiest European Hub at Paris are carried out. The issues of this test phase feed back to the concept of operations and are intended to fix standards for future implementation in terms of:

- Common operational procedures,
- Common technical and operational system performance,
- Common safety requirements, and
- Common standards of interoperability with other ATM systems.

In order to meet the mentioned objectives EMMA is built upon the previous work - especially from the ICAO Doc. 9830 on A-SMGCS and from the EUROCONTROL. The harmonised concepts of operations will be applied and validated thanks to functional and operational testing under real operational conditions. Active participation of licensed controllers and pilots from different countries are foreseen. Finally the Integrated Project EMMA will lead to comprehensive results which will support the regulation and standardisation bodies as well as the industry in early and efficient implementation of A-SMGCS not only in Europe.

