Chair:

Eng. Gabriele Enea

Air Traffic Management efficiency improvements through Trajectory-Based Operations: a dual perspective from the US and Europe.

ABSTRACT

Air Traffic Management (ATM) has developed into a complex, large-scale system that depends on the smooth interaction of air traffic controllers and advanced technologies to support them. A close cooperation with diverse users, such as airlines and airports, is also essential. ATM can be thought of incorporating tactical and strategic elements. Air Traffic Control (ATC), tactical in nature, deals with real-time planning, spacing, sequencing and conflict resolution. Air Traffic Flow Management (ATFM), more strategic in nature, deals with the planning and implementation of traffic flows. ATFM is pro-active, ATC is reactive.

This symposium will address recent advances in ATM in the USA and Europe, those both in the research phase and in operation. ATC is going through a fundamental paradigm shift, from a separation-based control to a trajectory-based approach to control. Trajectory-Based Operations (TBO) will rely more heavily on automated decision-support tools (DST) to aid air traffic controllers in their tasks, and on increased connectivity between systems at the tactical and strategic level of ATM. Moreover, airlines and airports will have a more active role in exchanging information and participating in the decision-making process.

The symposia will first present the ATM problem at a high-level, with overviews from the US and Europe. Then it will focus on specific case studies that can include:

- Advanced avionics,
- Automated controllers DSTs,
- Airport operations,
- ATM network optimization,
- Airline operations,
- Future concept of operations.

SYMPOSIUM N.2

AIR TRAFFIC MANAGEMENT EFFICIENCY IMPROVEMENTS THROUGH TRAJECTORY-BASED OPERATIONS: A DUAL PERSPECTIVE FROM THE US AND EUROPE

Chaired by Eng. Gabriele Enea
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Keynote Speaker

Eng. Joseph Post
Acting Director, Systems Engineering Federal Aviation Administration, Washington, DC, USA

TRAJECTORY-BASED OPERATIONS: THE NEXT REVOLUTION IN AIR TRAFFIC MANAGEMENT

Paper N. 1 Gabriele Enea, Jesper Bronsvoort, Tom Reynolds, Alexander Lau, James Jones - **COMPARING AIR TRAFFIC FLOW MANAGEMENT TECHNIQUES BETWEEN USA, EUROPE AND AUSTRALIA.**

Paper N. 2 Kimberly Noonan- **MODELING TRAJECTORY BASED OPERATIONS.**

Paper N.3 V.Cappellazzo, V.Treve, J.Toussaint,I. De Visscher – **A DYNAMIC DEPARTURE INDICATOR TOOL ALLOWING OPTIMISED SPACING DELIVERY**.

Paper N. 4 Alexander Lau, Benjamin Luhrs, Bjorn Beckmann – **BENEFIT ANALYSIS OF METEREOLOGICAL TURBULENCE DATA FOR FLIGHT PLANNING.**

Paper N. 5 R. Palumbo, E. Filippone, A.Vitale, G. Duca – **ADVANCED GNSS-BASED SOLUTIONS TO SUPPORT GA OPERATIONS IN TMA.**

Paper N. 6 Julia Rudnyk, Gabriele Enea – **AIR TRAFFIC CONTROL INTENT CHARACTERIZATION AND IMPACT ON TRAJECTORY PREDICTION.**

Paper N. 7 Swaid Majed, Marks, Tobias, Gollnick Volker - **ROUTE OPTIMIZATION FOR AERODYNAMIC FORMATION FLIGHT REGARDING FUEL PLANNING EFFICIENCY.**

Paper N. 8 Tobias Marks, Clemens Zumegen - **ASSESSING FORMATION FLIGHT BENEFITS ON TRAJECTORY LEVEL INCLUDING TURBULENCE AND GUST.**

Day: Wednesday 11 September 2019