Towards a Higher Levels of Automation in ATM, Increasing Automation in the Aviation Sector.

- Who we are,
- Hala! Objectives,
- Automation and ATM,
- Modelling ATM as socio-technical multi-agent system,
- Automation applied to ATM,
- Summary
Research Network established within the framework of SESAR WPE to spearhead long term and innovative research in ATM in pursuit of the SESAR 2020 vision and beyond. HALA! is acronym for “Higher Automation Levels in ATM”. It commenced its activities in 2010.

HALA! provides a flexible environment in which ideas on Automation in ATM will flow using a common approach by removing most of the constraints on other research carried out in SESAR.
WHO WE ARE: MEMBERS

Hala! Currently have more than 400 participants
WHO WE ARE: ACTIVITIES

- Calls for different WP-E research projects,
- ATM workshops, conferences and seminars organised by the ATM community
- Guide dedicated PHD research in HALA! areas of interest,
- Annually organizing ATACCS(*) congress,
- The organisation of a yearly HALA! Summer school, on different topics related to HALA! areas of research,
- Issuing Hala! Position Paper.

(*)International Conference on Application and Theory of Automation in Command and Control Systems
Focus on ATM Invariant Processes

Automation driven by overall system performance

New role assignment based on:
- “best time”
- “decision place”
- “best player”

ATM Invariants

Goals
- Safety (Separation Assurance)
- Efficiency (broad sense: user, provider & society)

Limitations
- Airport Capacity
- Atmospheric Behaviour

ATM
- Flight Trajectories Management

Automation
- Improvement of Processes through Technology

AUTOMATION AND ATM
ATM ACTORS

ATM CONTEXT

AIRSPACE USERS

ATM SERVICES PROVIDERS

SUPPORTING TECH & INFO AS: CNS & AERONAUTICAL INFORMATION PROVIDERS

REGULATORY BODIES & SUPERVISORY AGENCIES

Modelling ATM as socio-technical multi-agent system
COMBINING HUMAN CENTRED DESIGN AND TECHNOLOGY CENTRED ENGINEERING
APPLYING HSI BY ITERATING: M&S

ATM System

Modelling → Model → Simulation → Simulator

People (Agents) → Other Systems

Learning → Emerging Properties

Analysis

Experimental Data
SUMMARY:

- Re modelling ATM as socio-technical multi-agent system,
- Focussing Automation research into ATM, orchestration, separability, HIS-M&S