

**HALA_i RESEARCH NETWORK
WORKSHOP ATACCS Conference
Friday, October 2nd.
Toulouse, France.**

"The long journey toward a higher level of automation in ATM as safety critical, sociotechnical and multi-Agent system"

**Auditorium Herbrant, IRIT building,
Université Paul Sabatier (Toulouse)**



HALA_i analyses the feasibility of higher level of automation in ATM in the far future (beyond SESAR and NextGen)

ABSTRACT

The purpose and aim of this workshop is to present HALA!’s vision of the role of automation in future air traffic management (ATM) system, including as well an analysis and state of the art on ATM and automation.

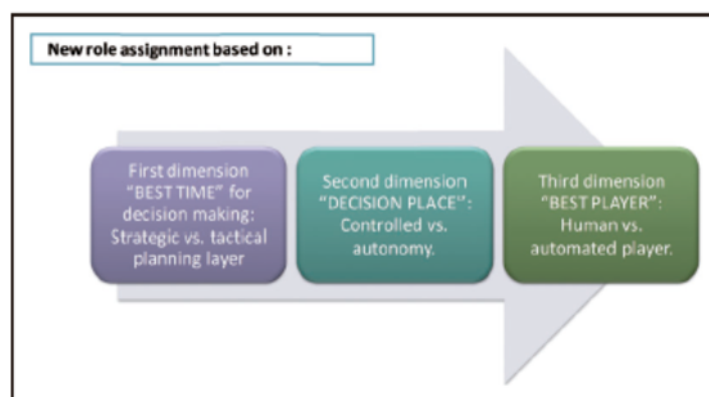
The content is based on HALA! position paper, that looks beyond the framework defined by SESAR and NextGen for the near future, and analyses the feasibility of higher levels of automation in ATM in the far future, taking into account the relationship between humans, organizations, and machines and scoping the allocation of functions, roles, and tasks between them.

Taking into consideration the proposed SESAR&NextGen paradigm shift (trajectory-based operations; proactive, more distributed and autonomous system) and studies developed in ATM automation in the past years, the vision goes toward a more ATM automation system operation questioning even the possibility of fully automated ATM system. The understanding of higher levels of automation in ATM considers the “overall system performance” as main driver for the resulting “optimal” ATM level of automation.

In this regard, the vision considers ATM as sociotechnical system and orchestrated organization, overcoming the former consequences of automation, where some “human errors” caused from automation were found, to this new vision where human motivation for their engagement in the ATM activities, will be promoted. New roles between humans, organizations, and between them and machines will be derived by considering ATM as a complex sociotechnical multi-agent system.

Under this assumption, it will be essential: to maintain a high degree of autonomy among different ATM agents and, simultaneously, an optimized level of orchestration among them. Three interdependent criteria to support the always controversial decision about where to dynamically allocate the ATM essential functions/tasks are proposed;

- when is the “best time” to take an operational action,
- where is the “best place” having the best picture to take it and, finally,
- who will be the “best player” to implement the associated tasks.



As a result, HALA*j* advocates for a different role of automation devoted to support a temporal, institutional, and physical distributed ATM system. It is also pointed out that research in ATM automation should always take under consideration the adequate level of automation in the far future ATM system and should always ensure the safety and reliability of a highly automated ATM system. Finally considers the need to align the research efforts into two different main activities of improvement, devoted to: aircraft trajectory hierarchal, spatial, and temporal cohesion and trajectory management.

Hala! Research network (<http://www.hala-sesar.net/>) is a network funded by SESAR JU under the framework of SESAR WP-E to spearhead long-term and innovative research in ATM in pursuit of the SESAR 2020 vision and beyond

Seminar

The presentation of HALA*j* Position paper during the ATACCS conference will be a good opportunity for gathering all relevant agents in the ATM and discuss the ideas and the view proposed by HALA*j* in the paper. Also HALA*j* wishes that the different agents could express their opinion as a way to enrich HALA*j*'s view and in this way contribute in the shaping of the final version of the document.

Therefore HALA*j* invites all interesting agents and stakeholders to participate in the seminar and to provide their view and believes regarding the future ATM system and the role and shape automation will take in the discussion proposed after the presentation.

Agenda

- 11.00-12.00 Presentation of HALA*j* Position Paper on challenges on automation in future ATM system. *Francisco Javier Sáez Nieto. HALA*j* Coordinator.*
- 12.00-12.30 Open discussion with the audience

Coordinated by UPM/HALA! Management Team.

For registration and further information about the workshop please contact us in the following e-mail address

hala@hala-sesar.net

Registration is open until October 2nd, day of the seminar, and can be also done at the seminar premises on the spot. The seminar will take place at the Auditorium Herbrant, IRIT building, Université Paul Sabatier (Toulouse)

Looking forward to see you there*j*.

HALA*j* Management Team.