

RPAS and AI in Aviation

Six SESAR ER projects together to present their results

Stefano Bonelli (Deep Blue)

DAY 2 | AI - 04.11.2022



3 SESAR Projects

- **THE TOPIC** - Artificial Intelligence in ATM
- **FOCUS OF THE SESSION** - The ongoing European research on the topic, and a look to the future
- **CONTENTS** - Results from different projects that worked on the use of AI in ATM in the last 2 years

NETWORK MANAGERS CENTER





AGENDA

| November 4 DAY 2 AI | |
|-------------------------|---|
| 08.45-09.00 | Participant registration |
| 09.00-09.20 | Welcome <i>Stefano Bonelli, Deep Blue</i> |
| 09.20-09.40 | Digitalisation in ATM: will it be Human? <i>Marc Baumgartner, IFATCA</i> |
| 09.40-10.25 | SafeOPS: Evaluating an AI based Decision Support for Go-around Handling in the Operational Context <i>Lukas Beller, TUM</i> |
| 10.25-10.40 | Coffee break and access to the demonstration sessions |
| 10.40-11.25 | Empirical results from the MAHALO project: personalized and transparent AI for CD&R <i>Carl Westin, LiU</i> |
| 11.25-12.10 | Algorithm transparency for conflict resolution: the ARTIMATION project <i>Christophe Hurter, ENAC</i> |
| 12.10-12.30 | Closing remarks and next steps for AI-related research in ATM <i>Stefano Bonelli, Deep Blue</i> |
| 12.30-14.00 | Coffee break and access to the demonstration sessions |

AI in ATM SESAR research projects

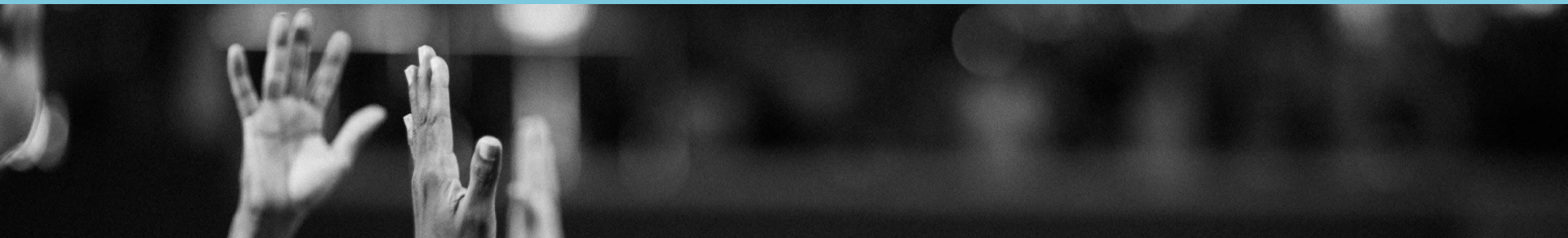


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Questions for the audience

Let's see which are our expectations regarding AI
in Aviation...





Do you think AI will become part of the aviation ecosystem?

40



...

Very soon, by 2035



Yes, in the next future (2050)



Maybe in the future



Never



Do you think AI could help facing the current and future aviation domain challenges (e.g. increased and more complex traffic, shortage of pilots, etc..)

41



...

Yes! AI is fundamental



AI will provide some help



Maybe



AI will create more problems than advantages





Which type of AI based tools you would like to see implemented as soon as possible?

28 ...



Anonymous
Conflict detection, resolution



Anonymous
Support human actors in no complex tasks



Anonymous
U space UAM separation



Anonymous
I think that will be implemented every tool useful for the increasing of situation awareness and for the increasing of managing capability of operators (air traffic controllers, pilots)



Anonymous
Network Manager support tool



Anonymous
Adaptive interfaces for ATM and Airport resource management



Anonymous
weather prediction



Anonymous
Atco support tools, decisions made on big amounts of data...



Anonymous
Collision avoidance between manned and unmanned aircraft



Anonymous
Decision support system of non safety critical part of Atm



Anonymous
Real-time Monitoring for Safety Alerting / Warning Functions during Departure and Approach Phases



Anonymous
Tools that learn from human experts



Anonymous
Conflict detection and avoidance



Anonymous
Supporting tool fo conflict detection and resolution



Anonymous
Flight plan optimization



Anonymous
ATC Conflict detection and resolution tool



Anonymous
Decision support



Anonymous
Conflict detection and resolution. New trajectory prediction models



Anonymous
Supportive decision making



Anonymous
Aid to people in order to take better decisions.



Anonymous
Detecting possible unstable approaches



Anonymous
Detect and Avoid



Anonymous
Support to ATCO



Anonymous
AI support for startle response in cockpits



Anonymous
Hazard monitoring and warning in ATM and mission support.



Anonymous
Detect & Avoid



Anonymous
resolution advise



Anonymous
Strategica planner



Anonymous
Coordinative actions/support



Anonymous
Safety uncritical support systems



Anonymous
Conflict resolution tool (atc)

**THANK YOU FOR
YOUR
PARTICIPATION**

