



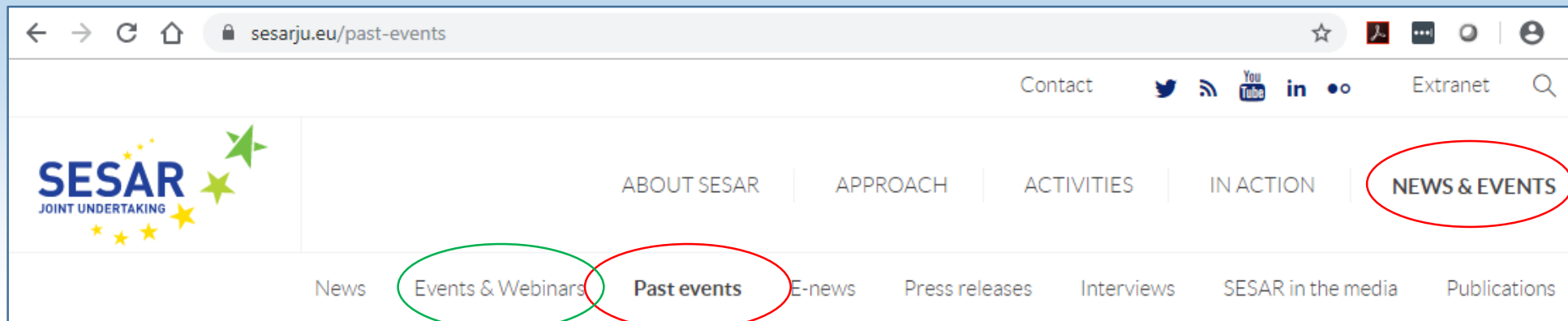
Towards higher levels of automation Artificial Intelligence (part 1 of 2)

Moderated by Ruben Flohr, ATM expert, SESAR JU



SESAR reaching out through webinars

- U-space & drones
- Exploratory research
- Nurturing young talent
- Digital sky vodcasts (Covid-19 impact, recovery, resilience)
- **Digital academy webinars**



Digital academy webinars

- The European ATM masterplan (in a nutshell) – 30 June
- **Towards higher levels of automation – 22 & 24 July**
- Consolidation of U-space results
- Communication, Navigation and surveillance
- Virtualisation
- Trajectory Based Operations
- SESAR and the environment

Levels of automation

From the European ATM masterplan

		Definition of level of automation per task				Automation level targets per MP phase [A,B,C,D]		
Definition		Information acquisition and exchange	Information analysis	Decision and action selection	Action implementation	Autonomy	Air traffic control	U-space services
Action can only be initiated by human	LEVEL 0 LOW AUTOMATION	Automation supports the human operator in information acquisition and exchange and information analysis						
	LEVEL 1 DECISION SUPPORT	Automation supports the human operator in information acquisition and exchange and information analysis and action selection for some tasks/functions					 	
	LEVEL 2 TASK EXECUTION SUPPORT	Automation supports the human operator in information acquisition and exchange, information analysis, action selection and action implementation for some tasks/functions . Actions are always initiated by Human Operator. Adaptable/adaptive automation concepts support optimal socio-technical system performance.						
Action can be initiated by automation	LEVEL 3 CONDITIONAL AUTOMATION	Automation supports the human operator in information acquisition and exchange, information analysis, action selection and action implementation for most tasks/functions . Automation can initiate actions for some tasks . Adaptable/adaptive automation concepts support optimal socio-technical system performance.						
	LEVEL 4 HIGH AUTOMATION	Automation supports the human operator in information acquisition and exchange, information analysis, action selection and action implementation for all tasks/functions. Automation can initiate actions for most tasks . Adaptable/adaptive automation concepts support optimal socio-technical system performance.						
	LEVEL 5 FULL AUTOMATION	Automation performs all tasks/functions in all conditions. There is no human operator.						

Degree of automation support for each type of task

SESAR Scientific Committee

- Workshop Summer 2019 with leading experts
- Discussion and views about Long Term Automation for ATM
- Prepared by the SESAR2020 Scientific Committee Automation Task Force as input for the SJU
- Report will be made available through the SJU website soon

Towards higher levels of automation - Artificial Intelligence (part 1/2)

Higher levels of automation in Time Based Separation during approach

- Andy Shand, Head of Queue & Capacity Management Solutions, NATS
- Claire Pugh, Wake Optimisation concepts and Analysis Lead, NATS

An overview of Artificial Intelligence methods

- Jesus Garcia, Professor Computer Science, Universidad Carlos III de Madrid

The human machine hybrid approach

- Marc Baumgartner, Air Traffic Controller, IFATCA

Perspective on Trustworthiness of Artificial Intelligence

- Guillaume Soudain, Software Senior Expert, EASA

Towards higher levels of automation - Artificial Intelligence (part 2/2)

Big data analytics to study intermodal passenger behaviour

- Ricardo Herranz, Project lead BigData4ATM, Nommon

Machine learning in speech recognition

- Hartmut Helmke, Project Leader, DLR
- Aneta Cerna, Project leader, ANS of the Czech Republic

Deep neural networks in complexity management

- Seddik Belkoura, Data Science Specialist, MUAC, EUROCONTROL

Machine learning to improve the take-off time prediction

- Ramon Dalmau Codina, Data Scientist, EUROCONTROL

Questions and answers

The screenshot shows a web browser window with the URL `app.livestorm.co/sesar-ju/digitalising-europes-aviation-infrastructure-artificial-intelligence-in-atm-part-1/live?s=2aed9e`. The interface is for a Livestorm event titled "Digitalising Europe's Av..." which is marked as "NOT STARTED YET" and scheduled for Wednesday, July 22nd 2020 - 9:30 AM (CEST). The event status bar shows a countdown: "SUPPOSED TO START IN 0 DAYS 17 HOURS 14 MINUTES 13 SECONDS" with 1 attendee. The main navigation bar includes "Chat", "Questions" (highlighted with a red circle), "Polls", and "People". The "Questions" section displays a message: "Nobody has asked a question yet" and explains that attendees can send questions here, which will be visible to all attendees. The main stage area on the left is dark and shows the text "There's nobody on stage for now".