



*At the core of the Engage KTN is the definition of various thematic challenges: new ideas suggested by the research community, not already included within the scope of an existing SESAR project. They are developed along with the ATM concepts roadmap and complementarily with some of the network's PhDs and theses.*

## **Thematic challenge 1**

# **Vulnerabilities and global security of the CNS/ATM system**



## ***Workshop draft programme***

Edition 1.2, 13 October 2020

Workshop date: **10 November 2020**

Host: Held virtually

Web details for access: <https://engagektn.com/thematic-challenges/>

## Abstract

CNS/ATM components (e.g., ADS-B, SWIM, datalink, Asterix) of the current and future air transport system present vulnerabilities that could be used to perform an 'attack'. Further investigations are necessary to mitigate these vulnerabilities, moving towards a cyber-resilient system, fully characterising ATM data, its confidentiality, integrity and availability requirements. A better understanding of the safety-security trade-off is required. Additional security assessments for legacy systems are also needed to identify possible mitigating controls in order to improve cyber-resilience without having to replace and refit. Future systems security by design is essential: a new generation of systems architectures and applications should be explored to ensure confidentiality, cyber-resilience, fault tolerance, scalability, efficiency, flexibility and trust among data owners. Collaborative, security-related information exchange is essential to all actors in aviation. This is specially challenging in a multi-stakeholder, multi-system environment such as ATM, where confidentiality and trust are key.

## Draft programme



### Vulnerabilities and Global Security of the CNS/ATM systems

2nd edition

10th of November 2020

Held virtually

9:50am – 2:00pm



#### 9:50-10:20 Opening & Welcome

9:50-10:00

Welcome

10:00-10:20

Ruben Flohr (SESAR JU, Architecture & Systems Engineering)

#### 10:20-11:45 State of the Art in CNS/ATM security and future perspectives

10:20-10:40

Robert Westerberg (NATS, Strategic Threat and Risk Lead),  
"Future concerns of an ANSP"

10:40-11:00

Technical expert - EASA

11:00-11:20

Technical expert - ASD Cybersecurity Task Force

11:20-11:45

Q&As session

#### 11:45-12:00 Intermission/Coffee Break

#### 12:00 -13:25 Research for future secure CNS/ATM systems

12:00-12:20

Matthias Schäfer ((Co-)Founder of SeRo Systems and OpenSky Network),  
"Authentication and integrity for ADS-B"

12:20-12:40

Yijun Yu (Senior Lecturer in Computing at The Open University),  
"The drone identity - investigating forensic-readiness of U-Space services"

12:40-13:00

•Kanaan Abdo (Project manager—Chief Technology Officer at ALTYs)

Topic: General introduction of the SINAPSE Project

•Fun Hu (Professor of Wireless Communications at University of Bradford)

Topic: SINAPSE Security Architecture

•Muhammad Ali (Post-Doctoral Research Fellow at University of Bradford)

Topic: Artificial Intelligence Techniques for SINAPSE Security

13:00-13:25

Q&As session

#### 13:25 -14:00 Future needs cyber-security research

## Registration

To request a place:

- please visit: <http://ow.ly/iUim50AKr4Y>



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