



# Security of Airport Transport Infrastructure in Europe

## Overview of the project

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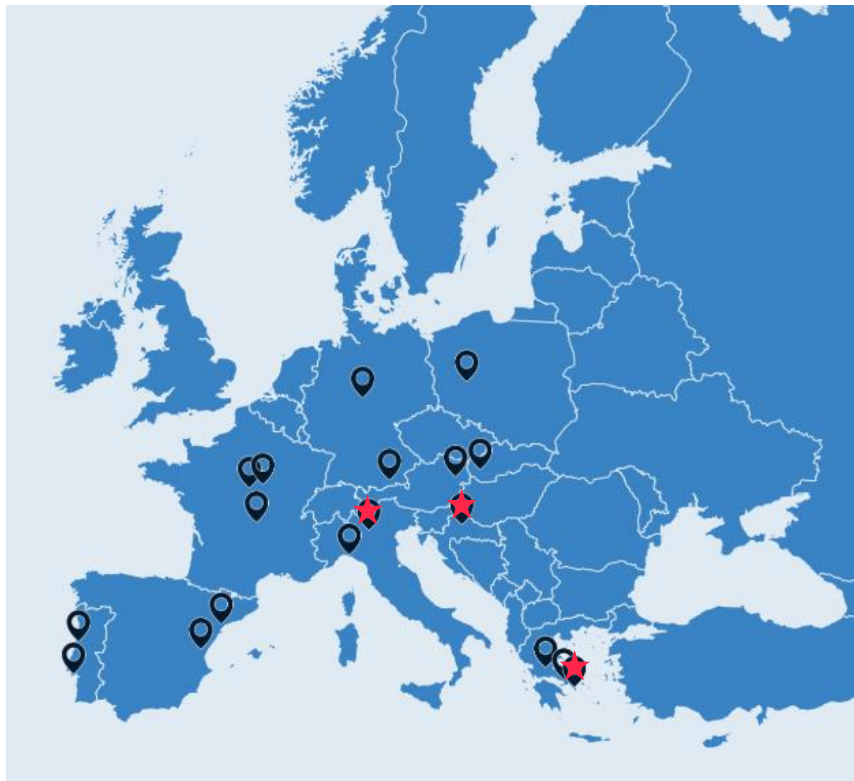
Acoustics and Speech Processing 2020 Workshop 2020-12-16, Remote



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement number 832969.



# Project setup



18 partners, 10 nations

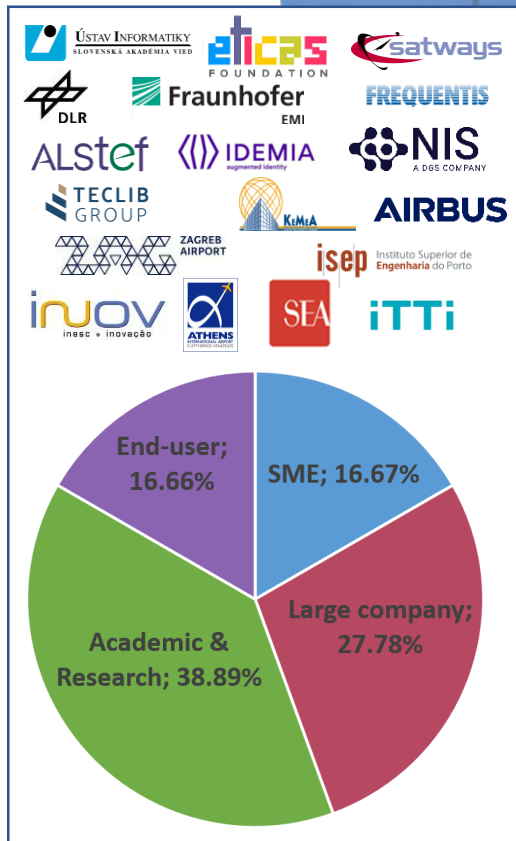
Total Costs: €9,890,595

Funding: €7,989,264

PM planned: 1058

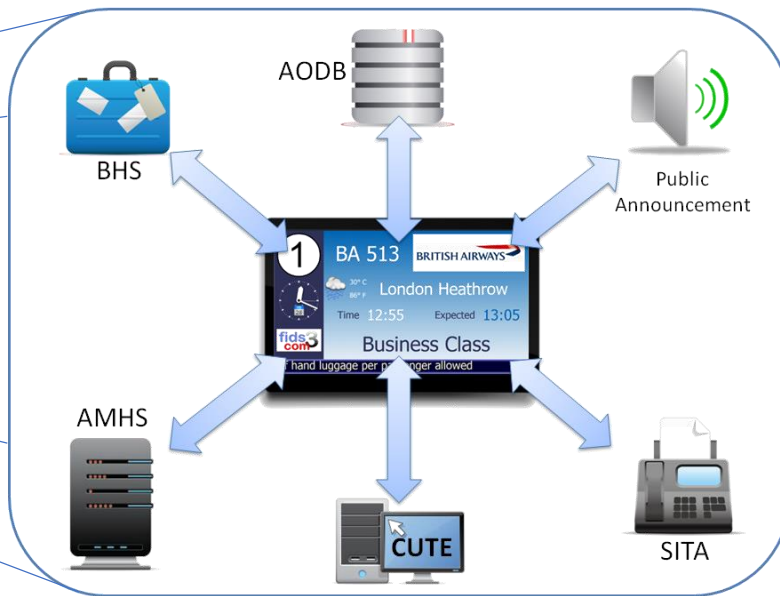
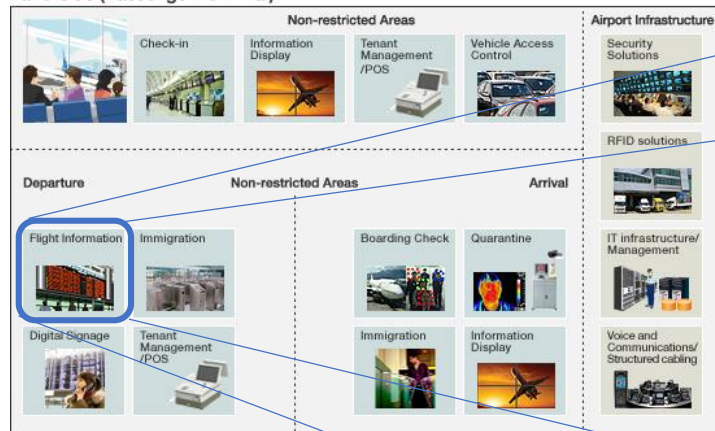
Duration: 24 months

3 airport end-users ★



# Motivation 1/2

## Land-side (Passenger Terminal)



# Motivation 2/2

<sup>1</sup>ACI Europe research 2015

<sup>2</sup>PwC survey 2015

<sup>3</sup>HP/Ponemon research 2014

<sup>4</sup>UK BIS 2015 survey

## Costs of cyber-security breaches are high:

- €1M/hour for a disruption at a major European airport<sup>1</sup>.
- €2M+ direct cost of a serious cyber-compromise<sup>2</sup>.
- €250M in losses of European airport revenue for a six-day closure (estimate following Eyjafjallajökull eruption 2010<sup>1</sup>).

## Important to take cyber-security seriously, as:

- 170 days = average time to detect a malicious or criminal attack<sup>3</sup>.
- 90% of large organisations reported suffering a security breach<sup>4</sup>.
- 75% of board directors are not involved in review of cyber-security risks<sup>2</sup>.



# Objectives of SATIE 1/2



- **Identify main areas of security improvements** in airport infrastructures. WP2



- **Improve risk assessment methods** to address complex attack scenarios. WP2, WP5



- **Improve cyber threat prevention** on airport assets and communications. WP3



- **Improve cyber threat detection** on airports IT and OT networks. WP4



- **Improve physical threat prevention and detection** against access to critical areas and passenger control. WP3, WP4



- **Improve correlation of cyber and physical threats** to facilitate human analysis and decision-making. WP4

# Objectives of SATIE 2/2



- **Improve incident response and impact mitigation for a unified and fast response.** WP5



- **Carry out operational demonstrations at TRL7 in real conditions** at three different international airports. WP6



- Continuous **improvement** approach to **dynamic airport security standards** and to the **harmonization of emergency and security-incident related approaches.** WP2, WP7



- **Disseminate project results** to inform the pervasive service industry, and the scientific and business communities about the developments. WP7



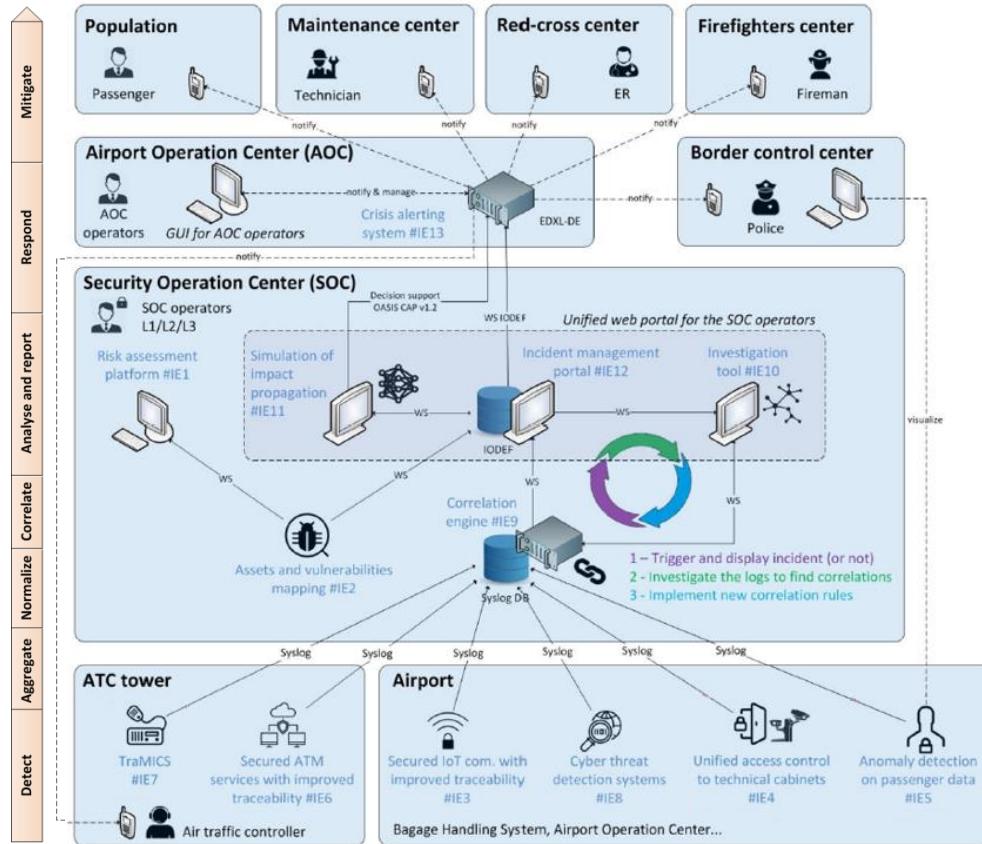
- **Provide efficient and cost effective solutions** for airport security. WP6, WP7



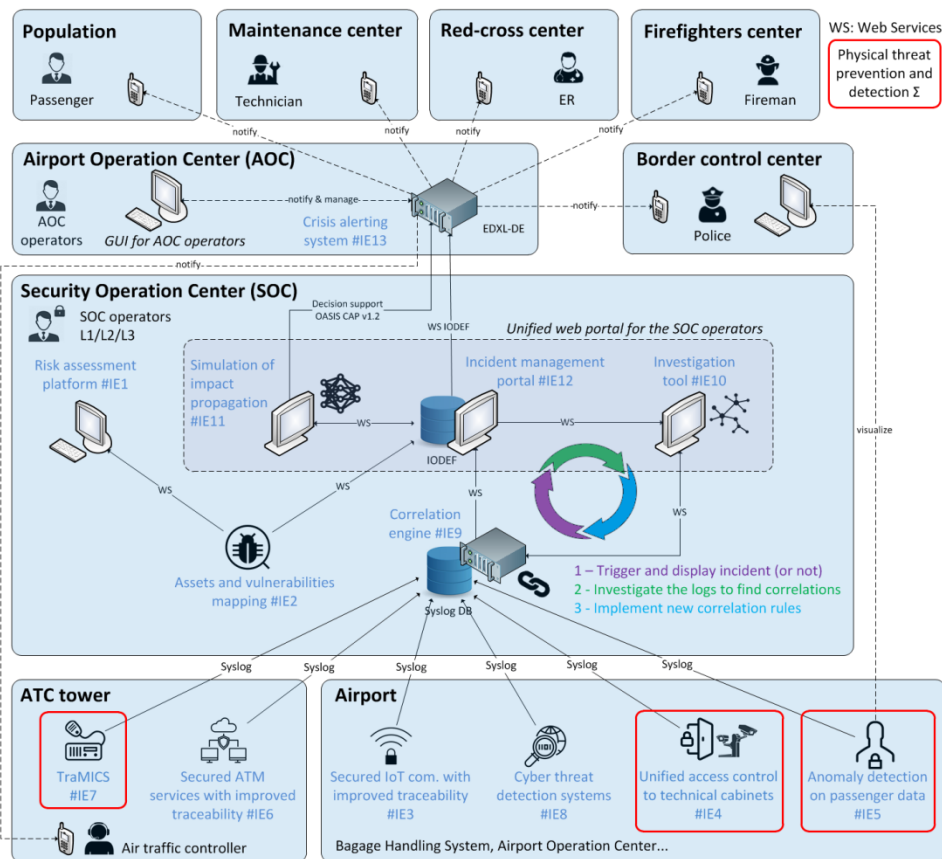
- **Ensure compliance with ethics, privacy and regulations.** WP8



# Project in one figure








# Innovation elements of SATIE



- IE1:** Risk assessment platform with cyber-physical threat analysis (RIS).
- IE2:** Vulnerability management system for ICS and OT systems (GLPI).
- IE3:** Encryption framework for secured IoT communications on Baggage Handling Systems (BHS).
- IE4:** Unified access control system combined with video analytics.
- IE5:** Extended passenger identity with baggage tracking and data analysis for anomaly detection.
- IE6:** Secured air traffic management data services with enhanced traceability.
- IE7:** Traffic Management Intrusion and Compliance System (TraMICS).
- IE8:** Cyber threat detection on critical networks and business processes.
- IE9:** Correlation engine for cyber-physical threat detection.
- IE10:** Data analytics for forensics investigation and fast recovery.
- IE11:** Impact propagation simulation for anticipated impact assessment.
- IE12:** Cyber-physical incident management portal for enhanced SOC awareness.
- IE13:** Crisis alerting system for coordinated security and safety responses.
- IE14:** Emulation platform for improved cyber defence strategies.



# SATIE scenarios

Scenario	# 1	# 2	# 3	# 4	# 5
Systems attacked	Flight Information Display System (FIDS), Public Announcement (PA) system	Access control (AC) system	Airport Operation Data Base (AODB), Information and electrical system	Baggage handling system (BHS)	Air traffic management (ATM)
Effect	Confusion, evacuation, possible physical attack	Unauthorized access to secured areas, possible physical attack	Communication interruption, false information, black out	Manipulated baggage destination	Ground movement conflicts
	 <a href="https://www.bbc.com/">https://www.bbc.com/</a>	 <a href="https://www.dw.com/en/munich-airport/">https://www.dw.com/en/munich-airport/</a>	 <a href="https://jalopnik.com/power-outage-shuts-">https://jalopnik.com/power-outage-shuts-</a>	 <a href="https://www.thesun.co.uk/travel/9570402/h">https://www.thesun.co.uk/travel/9570402/h</a>	 <a href="https://news4sanantonio.com/news/local/g">https://news4sanantonio.com/news/local/g</a>



Further information and results can be found at <http://satie-h2020.eu/>

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Any question?