SATIE NEWSLETTER

NOVEMBER 2020 ISSUE 1

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Welcome to the first SATIE newsletter!

By Tim H. Stelkens-Kobsch, DLR, Project Coordinator

It is with great pleasure that I introduce you to this first edition of the SATIE newsletter. The goal of the SATIE project is the development of solutions to the emerging exposure of airports to cyber-physical threats with practical proposals for implementation.

This newsletter comes at a crucial stage for the SATIE project. Results from the first 18 months of work are emerging. At the same time the ground is being laid for the next stage of the project, which will be the testing of the SATIE toolkit, leading up to the validation and demonstration of the SATIE Concept at our three demonstration airports Zagreb, Milan and Athens.

The newsletter is also intended to provide regular updates and insights into SATIE results and achievements. In this edition you can also read an article about SATIE's approach to cyber-physical risk assessment and aiports' requirements, written by Kelly Burke, a Data Scientist at Network Integration and Solutions (NIS).

To provide an independent assessment on the systems and how the SATIE Concept is suited to respond to the security challenges facing airports, SATIE intends to rely on external users and experts. I therefore take the opportunity of this newsletter to welcome users, stakeholders, and security experts to engage actively with the project as it enters the crucial phase of validation and demonstration.

This is your chance to become engaged as an active player in the validation of SATIE: please contact us if you are willing to come on board! I hope this newsletter will stimulate your interest in SATIE.

Project facts and figures

SATIE OBJECTIVES

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

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

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

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

- Provide efficient and cost-effective solutions for airport security.

- Ensure compliance with ethics, privacy, and regulations.

End-user 16.66%
SME 16.67%
Academic & Research 27.78%
Large company 27.78%

PROJECT FIGURES

- 18 partners, 10 nations

- Total costs: €9,890,595

- Funding: €7,989,264

- PM planned: 1058

- Duration: 27 months

- 3 airport end-users

AIRBUS   ALStef

ATHENS INTERNATIONAL AIRPORT ELEFTHERIOS VENIZELOS   Deutsches Zentrum DLR für Luft- und Raumfahrt

eticas FOUNDATION   Fraunhofer EMI

FREQUENTIS FOR A SAFER WORLD   IDEMIA

INOV inesc   isep Instituto Superior de Engenharia do Porto

iTTi   KEMEA
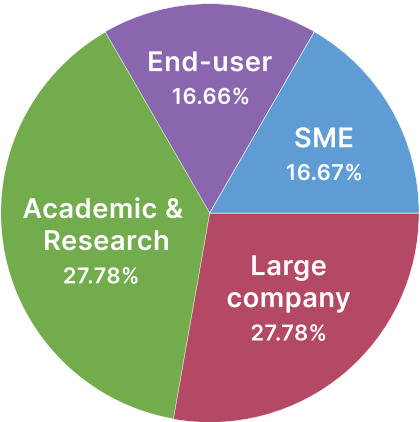
ZAG ZAGREB AIRPORT   NIS A DGS COMPANY

satways   SEA Milan Airports

teclib'   Ústav Informatiky SLOVENSKÁ AKADÉMIA VIED

Partner profile of this newsletter

DLR - GERMAN AEROSPACE CENTER, Germany, Project Coordinator

DLR is the Federal Republic of Germany's research centre for aeronautics and space. DLR conducts research and development activities in the fields of aeronautics, space, energy, transport, security, and digitalisation. The DLR Space Administration plans and implements the national space programme on behalf of the federal government. Two DLR project management agencies oversee funding programmes and support knowledge transfer. Climate, mobility, and technology are changing globally. DLR uses the expertise of its 55 research institutes and facilities to develop solutions to these challenges. Our 9000 employees share a mission – to explore Earth and space and develop technologies for a sustainable future. In doing so, DLR contributes to strengthening Germany's position as a prime location for research and industry. Within DLR the Institute of Flight Guidance is the Air Traffic Management competence centre and coordinator of the SATIE project.

The project coordinator of SATIE, Tim H. Stelkens-Kobsch, received his diploma in aeronautical engineering from the University of Braunschweig and joined the DLR´s Institute of Flight Guidance in 2010. Within the DLR he works on ATM-Simulation and Aviation Security. He headed several validations regarding Air Traffic Management, was part of the SESAR CyberSecurity Task Force and has high experience in management of international projects.

Tim H. Stelkens-Kobsch from DLR shaking hands with Olivier Théveneau from APHM at SAFECARE Awareness Event in Leuven

Kelly Burke from NIS presenting SATIE at ECSCI workshop
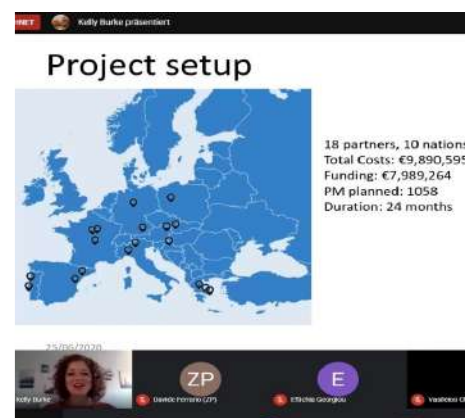
SATIE at the ECSCI workshop

European Cluster for Securing Critical Infrastructures

The SATIE project was presented remotely at the 1st annual European Cluster for Security Critical Infrastructures (ECSCI) workshop on 24-25 June 2020. ECSCI is a cluster of H2020 projects for securing critical infrastructures. Its main objective is to bring about synergetic, emerging disruptive solutions to security issues via cross-projects collaboration and innovation. This first ECSCI workshop was an opportunity to present projects, including outcomes achieved thus far, to a public audience to discuss technical aspects of the projects and underlying technologies to ultimately exploit the results and progress for use across other markets worldwide.

At the time of presentation, SATIE was half-way through completion, at month 14 out of 27. Therefore, some solid results were able to be presented, including that all the SATIE systems have been deployed on the CyberRange platform – hosted by Airbus CyberSecurity - and all interconnections are up and running between systems.

> **"**
> ESCI is a cluster of H2020 projects for securing critical infrastructures. Its main objective is to bring (…) discruptive solutions to security issues via cross-projects collaboration.
> **"**

To demonstrate some of the power of the SATIE solution: one of the SATIE tools - the Impact Propagation Simulation - is able to show how one threat on one particular asset can potentially propagate through other (physically- or digitally-) connected assets, even transforming into other threats and impact many assets within the organization.

This kind of modelling can be crucial to better threat mitigation by understanding all potentially impacted assets before waiting for the threats to propagate through the system.

The concept of the SATIE project and Impact Propagation Simulation were received very well at the ECSI workshop. Most of the audience were partners working on other H2020 critical infrastructure projects. Thus, this exchanging of ideas from the air transport industry to the financial sector and many others was a great opportunity to offer new insights which may be used in one field, but their potential not realized in other fields. It was a pleasure to participate and we hope that this synergy and cross-collaboration continues to push the boundaries of critical infrastructure security!

Cyber-physical risk assessment and aiports' requirements

By Kelly Burke, NIS, Italy

WP2 named "Cyber-physical risk assessment and airports' requirements" seeks to understand the present-day situation and then to improve the airport's understanding of their systems and how to manage them in the event of a crisis. Thus, WP2 is an integral part of preparing and building the threat scenarios at the heart of this project.

First the current situation at the airports must be identified in a detailed manner. The critical assets within the airport infrastructure must be identified, along with their possible threats and vulnerabilities. Risk analysis was performed on the systems, the individual assets, their threats, and vulnerabilities. Their interconnections were then modelled so that the propagation of a threat through the airport infrastructure can be accurately represented. Both analyses offer a detailed, qualitative understanding of the current situation, where the highest risks are and exactly how impactful particular threats truly are. Finally, based on the current situation, a holistic approach for crisis management (before, during, and after) is proposed to aid airports in adopting a clear, common management strategy. Given that airports are inherently connected to each other, a common approach will greatly unify and improve cyber-physical security across the whole network.

To achieve the goals described above, focus group meetings at each of the three airports were carried out so that the required detailed information about the airports could be collected. These in-person meetings allowed for discussions about how best to approach collecting the data, explaining the importance of the information and how it will ultimately benefit airport security. In the next newsletter issue, a public summary of WP2 findings will be provided.
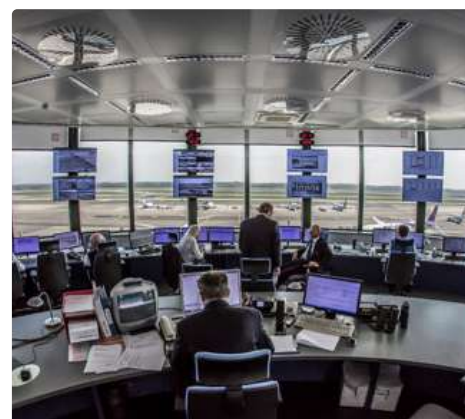
SEA/Milan ATC tower during SATIE requirements gathering meeting tour, November 2019