

SATIE

NEWSLETTER

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Foreword

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

As every journey, also the SATIE adventure comes to an end. You now receive the fourth newsletter which updates you on the latest developments in the project and also closes the circle. About 30 months ago, we started this challenge and did not know what would happen and which challenges and issues will appear. Nobody in the team thought about exclusively working from home over months, nobody of us imagined to conduct simulations all virtual, nobody of the SATIE family ever conducted demonstrations in hybrid mode, and nobody thought that video conferences would be the new normal in our daily project work. It was not clear that travel expenses would not be used and like plenty of nicely planned and managed projects, SATIE had to extend its duration considerably from 24 to 30 months. Thankfully, the funding agency fully supported this and it was key to achieve the project goals and objectives as we finally did.

Now, as we almost went through these – sometimes painful – experiences, we can look back and state for SATIE, that we achieved everything we wanted and that we received much more acceptance from our stakeholders than we expected. One of the most impressive questions about our SATIE Toolkit was if it can be bought right away and directly installed at the end user's premise.

Amongst other positive comments on the SATIE Solution, this was a clear sign that full engagement of end-user project participants (as it happened for SATIE) is key to provide technology and solutions needed to improve the security in Critical Infrastructures.

During the duration of the project, we successfully set up, adapted the needed technologies and utilised them for simulation and demonstration of five different cyber-physical attack scenarios with live interaction from the airport partners and security operators.

These events took place at the three participating international airports. The “big bang” at the end of the project was for sure the Final Conference, which was conducted in a hybrid set up and which took place in Crete during October 2021. Together with our sister projects SAFECARE and SecureGas, we attracted about 60 participants to join on-site

and about 100 persons online. Looking at the fact, that dasadsasd the daily schedules needed to be extended considerably (speakers reported about large amounts of information), it can be concluded that the added value of such clustering events cannot be underestimated.



Demonstration in Zagreb Airport

After months of training on the simulation platform, the second SATIE online demonstration event took place at the Zagreb Airport on 27th of July, 2021 (see Figure 1) as both a physical and virtual event. More than 40 participants were connected through online platform, and took part in the demonstration, watching video broadcast from on-site cameras.

could have an impact on provided service. The SATIE Toolkit has shown fit for purpose against complex cyber-physical threats through prevention, detection, response and mitigation, while guaranteeing the protection of critical systems, sensitive data and passengers. The interoperable toolkit developed improves the relationship between existing airport systems and enhanced security solutions, in order to ensure more efficient threat prevention, forensics investigations and dynamic impact assessment at the airports.



Figure 1: The Zagreb Airport premises

The demonstrated scenario was the only one within the SATIE project to involve the Baggage Handling System (BHS) and the baggage registration service (see Figure 2 and Figure 3). Because of that unique aspect and, thanks to the project partner ALSTEF, the creation of an almost complete copy (digital twin) of the real BHS connected directly to the SATIE Toolkit was possible. The demonstration has been split up into four different sub-scenarios to allow more potential threats to be showcased and to take advantage of the aforementioned setup. The Zagreb demonstration took place during the night and after all flights departed, due to safety and security concerns.

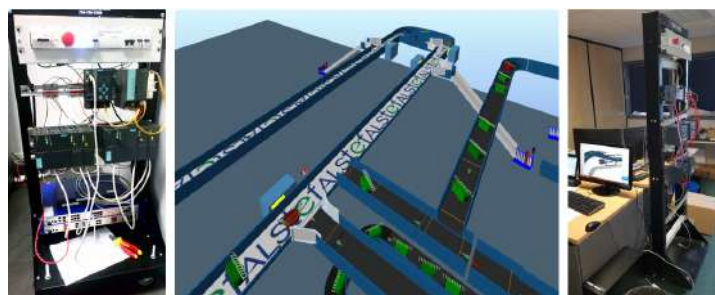


Figure 2: Systems used in the Zagreb demonstration



Figure 3: Preparation of the demonstration at Zagreb Airport

The Zagreb demonstration aimed to revolutionise the approach for securing airports and prevent disruptions of critical systems such as the BHS that

Four sub-scenarios of threats and attacks related to the BHS and the process of passenger baggage handling were presented with the help and involvement of all SATIE partners:

- Sub-scenario #1 “Extended Passenger Concept”
- Sub-scenario #2 “Ransomware attack”
- Sub-scenario #3 “Change destination flight”
- Sub-scenario #4 “Lost baggage”

Demonstration of all four sub-scenarios included previously recorded videos, live presentations, attack simulations, response of the SATIE Toolkit and related Q&A afterwards. SATIE Tools involved

at the Zagreb demonstration scenarios were: Correlation Engine (CE), Incident Management Portal (IMP), Passenger and Baggage Anomaly Detection (PAD), Vulnerability Management System (VuMS), Business Impact Assessment (BIA) and Risk Integrated Service (RIS). Successful demonstration would not have been achieved without the engagement of all SATIE partners and respectable guests, for which sincere gratitude was expressed.

Interviews and questionnaires that followed the event presented very useful feedback, including positive reinforcements and encouragements. Ultimately, this demonstration reaffirmed hope for creating a successful solution that could find its purpose and wide usage in the future.

Demonstration in Milan Malpensa International Airport

The third SATIE demonstration event was carried out on the 8th of September 2021 at the Milan Malpensa International Airport (MXP) premises in Lombardy, Italy (Figure 4). It was a hybrid – i.e. both virtual and physical – event, consisting of a combination of pre-recorded video materials, real-time live streaming and live-performance scenario demonstrations.



Figure 4: The Milan Malpensa Airport premises

The demonstration was structured with the clear idea of showing SATIE’s potential. Therefore, besides presenting the various tools and their functionalities, the scenario was designed with the

purpose of testing the capacity of the SATIE Solution to reveal the threats in real-time. The demonstration clearly showed that SATIE is an example of holistic security, giving the assets and the people continuous protection across all attack surfaces while taking into consideration the totality of all physical, software, network and human exposure.

Pilot operations in Milan Malpensa were organized and coordinated by SEA, the company that manages Linate and Malpensa airports, with the active involvement and technical support of all the partners, some of whom were physically present at Malpensa premises to install tools which were fundamental to performing the demonstration (Figure 5). In preparation of the event, a project training session was organized, followed by regular internal “hands on” meetings to give the operators the possibility to investigate the systems in more detail. The “hands on” meetings were particularly productive, because the operators, very well experienced ICT airport security specialists, gave some insightful inputs that the technical partners deemed useful and decided to implement.

During the event, the SEA team (see Figure 6), including the Security Operations Centre and the Airport Operations Centre (AOC – see Figure 7) operators, showed the performance of the SATIE Solution through the deployment of a realistic cyber and physical attack scenario - Scenario #3 “Land Side – Air Side and Physical Attack”.

The SATIE Tools involved in the Milan Malpensa demonstration scenario included: Unified Access Control (UAC), Malware Analyser (MA), Application Layer Cyber Attack Detection (ALCAD), Impact Propagation Simulation (IPS), Correlation Engine, Incident Management Portal (IMP), Crisis Alerting System (CAS), Investigation Tool (SMS-I) and Risk Integrated Service (RIS).

The demonstration event took place in Malpensa’s Crisis Room (see Figure 8) and was attended by over 70 participants. Due to the COVID-19 measures and travel restrictions, few people were allowed in the Crisis Room and most of the audience attended virtually, but SEA was lucky enough to have sufficient space to welcome 11 people to follow the event in person.

Thanks to the Project Coordinator, who managed the virtual conference, the audience following the demonstration remotely could take advantage of the online broadcasting and interactive process. During the event, to obtain exclusively unbiased opinions, only the participants external to the project - so called “independent externals” - were required to answer an evaluation questionnaire. The SATIE Solution was considered a significant



Figure 5: Installation of the Unified Access Control at the AOCC door at Milan Malpensa Airport premises



Figure 6: Presentation of SEA's SATIE team during the Milan Malpensa Airport demonstration event



Figure 7: The Airport Operations Centre (AOC) activities in the Airport Duty Manager Backup Room during the Milano Malpensa Airport demonstration event



Figure 8: Milan Malpensa Airport demonstration event in the Crisis Room

Second Awareness Event and Practitioner's workshop

The second SATIE Awareness Event took place on the 23rd of September 2021, as a remote event (see Figure 9). It hosted in total 57 participants, including guests from ACI EUROPE, DG CONNECT, ENISA, Hellenic Police, as well as guests from other research and industry companies. The event kicked-off with presentations from invited keynote speakers: Wide Hogenhout (DG CONNECT) and Emmanuel Isambert (EASA), stressing the challenges within the security domain. Afterwards, the SATIE team presented an overview of the SATIE Solution as-a-whole, as well as individual tools. Thereafter, those tools were presented in the context of the SATIE demonstrations. These demonstrations were all presented with introductory presentations and dedicated videos.

The Practitioner's Workshop was held online on the 24th of September and brought together professionals from the three airports. The unique

aspect of the Practitioner's Workshop was that – after the introduction to the SATIE concept, scenarios and tools (see Figure 10) – the experts from the three European countries had the opportunity to join dedicated sessions to express their thoughts in their mother languages. This effort was taken to make sure that the language barriers – which become especially important in case of professional vocabulary – do not negatively impact the experts' ability to express their feedback.

Both events can be seen as great successes attracting many external guests, especially given that the feedback received in both Awareness Events and Practitioner's Workshop was largely positive.

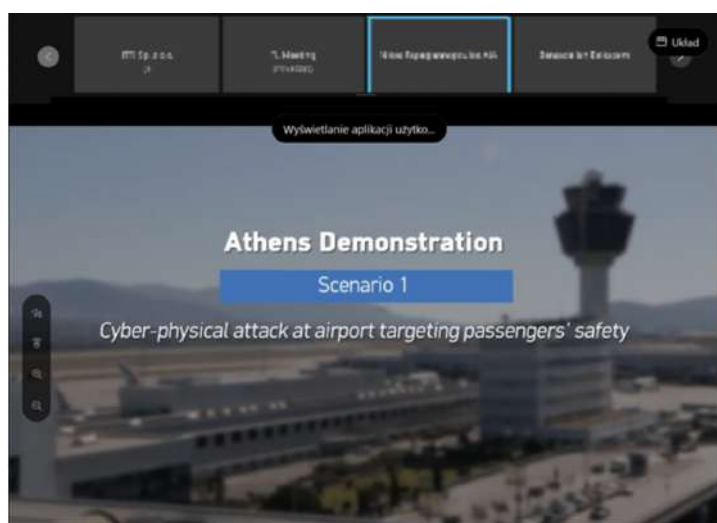


Figure 9: One of the demonstration videos being presented during 2nd Awareness Event (online)



Figure 10: Practitioner's Workshop – introduction of scenario 1

SATIE's Final Conference

SATIE's Final Conference took place on Crete (Greece) on 12-13th of October 2021. The event was combined with The 3S Clustering Event, which and was organized by the community of three H2020 Security R&D projects (see Figure 11).

This two-day event focused on multiple security-oriented research areas that have been identified as of high priority by the EU. Special focus was put on the results of the three H2020 Critical Infrastructures (CI) security projects – SATIE,

SAFECARE and SecureGas. The event was targeting a broad audience of delegates (see Figure 12), mainly constituted of specialists from practitioner organisations, EU and national policy makers, DGs, EU agencies, industry and research experts, representatives from related projects, etc. The conference was composed of keynote speeches – given by Mr George Theodoridis (JRC), Dr. Konstantinos Moulinos (ENISA), Prof. Dr. Gritzalis (Athens Univ. of Economics & Business), Dr. G. Lykou (Greek Civil Aviation Authority) – and

projects-oriented presentations. These latter presentations included concrete SATIE project results, results of the related projects and their associated solutions (see Figure 13). The two-day event attracted about 160 participants in total – about 60 on-site and 100 online (Figure 14). The technical part hosted over 30 presentations organised in four thematic sessions. The conference was organised in the last month of the SATIE project to ensure that a majority of project results were available and could be presented.



Figure 11: The event logo and information



Figure 12: SATIE's coordinator, Tim Stelkens-Kobsch from DLR opening one of the conference sessions



Figure 13: Thomas Oudin from Airbus Cybersecurity presenting SATIE's results



Figure 14: The 3S Clustering Event on-site participants



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