



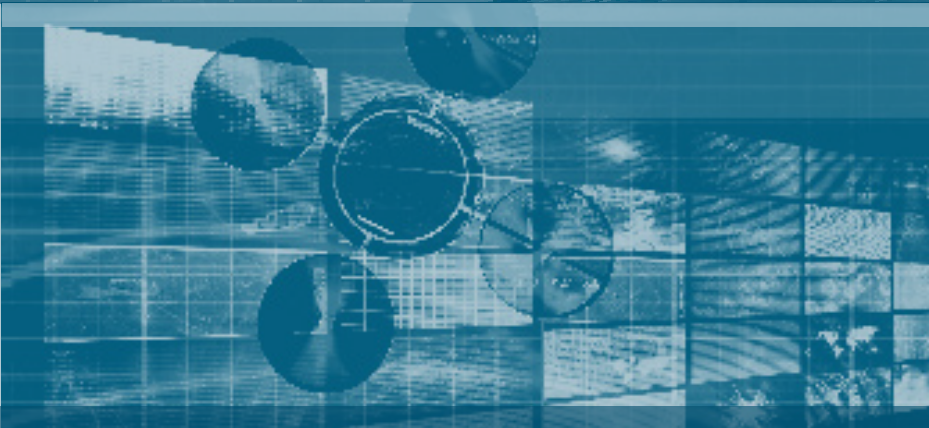
NEWSLETTER #4

JULY 2020

Resilient to defeat crime and virus

ALADDIN

**Advanced hoListic Adverse Drone Detection,
Identification & Neutralization**



European
Commission

Horizon 2020
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ALADDIN RESILIENT TO DEFEAT CRIME AND VIRUS

Dear Reader,

While the COVID-19 pandemic is spreading around the world, affecting the calendar of ordinary activities in all sectors, the ALADDIN project is gradually progressing towards its completion. Despite the difficulties brought by the Coronavirus outbreak, ALADDIN is resolute to keep going and make every effort to help defeat crime and the virus collateral damages.

This issue of the Newsletter brings you the main outline of the period:

- Successful **integration of ALADDIN sensors with the C2** in Toulon, France, in February 2020
- **Final Pilot experiments and demo day** in Athens, Greece, rescheduled to October 2020
- ALADDIN's active role in enhancing **Counter-Drone standardization** and awareness of **security research**
- Release of the public version of the **ALADDIN state-of-the-art (SOTA)** report and research on Societal, Ethical and Legal (**SoEL**) aspects
- Forthcoming **milestones and events**

Enjoy reading and keep up to date with the project through the events published on the website.

The Project Coordinator

THE ALADDIN CONSORTIUM

There has been a noticeable change in the composition of the Consortium since the last newsletter. On May 1st 2020, the coordinator and beneficiary, Diginext, merged into its sole shareholder company, CS Systemes d'Information, and concurrently changed its name to **CS GROUP**. The merger enforced a universal transfer of the entire DIGINEXT undertaking into CS GROUP. There is no impact on the current execution of the Grant Agreement.

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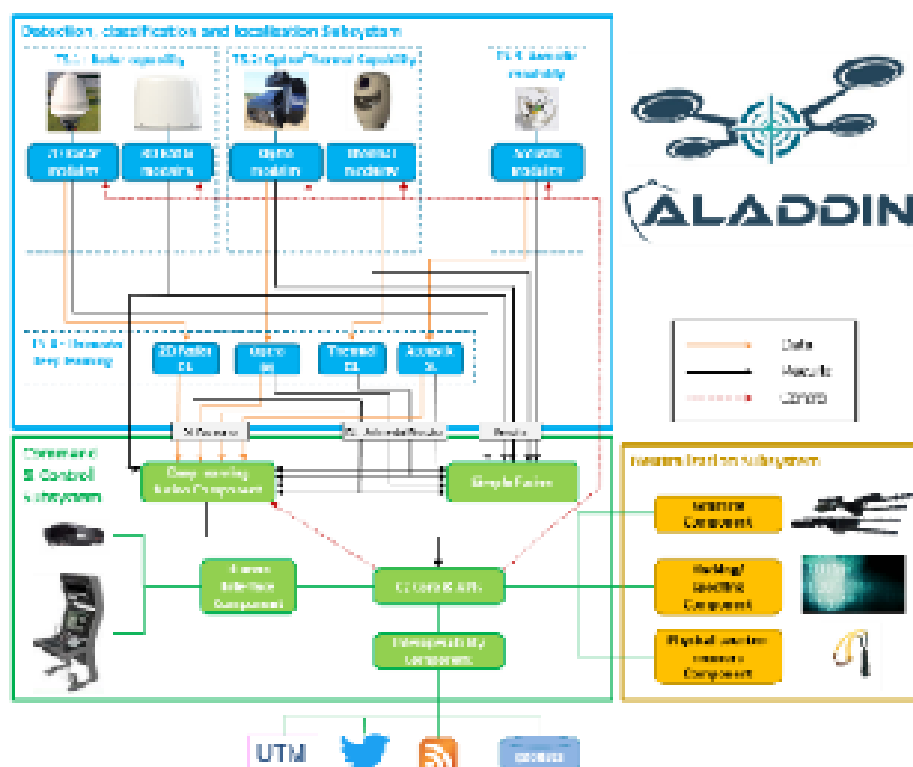
SUCCESSFUL UNIT INTEGRATION OF ALADDIN ELEMENTS WITH C2

ALADDIN achieved another milestone with the successful unit integration of the ALADDIN system in February 2020. The consortium technical partners gathered at CS GROUP premises in Toulon, France, for testing the unitary integration of each detection and neutralization components of the final version of the ALADDIN system with the Command and Control (C2) subsystem.

This busy time was an important step for achieving equipment integration. The ALADDIN Command & Control software with open architecture is able to host numerous sensors and effectors. CS GROUP has the skill and ability to design, build and run interfaces adapted for each piece of equipment. The consortium decided to conduct face-to-face meetings and physical individual integration at CS GROUP premises, in Toulon. This provides opportunities for team building, solving technical problems immediately and discovering potential system improvements.

The following components were successfully integrated with the C2: IDS 2D radar, HGH thermal sensor, SIRC 3D radar, IDMT acoustic sensor, PIAP tracking camera, DIGINEXT virtual reality device, MC2 jammer. Deep Learning module integration was not possible at this time, because of agenda constraints and is being carried out remotely.

To improve efficiency of the ALADDIN system, it is necessary to propose other kinds of sensors and effectors. RF detector and physical neutralisation means developed outside of the ALADDIN project, will be presented during final demonstration.



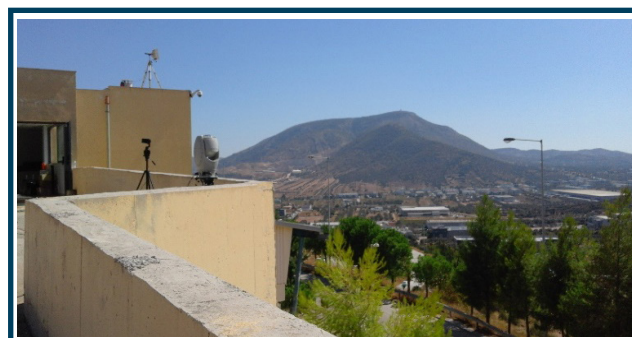
Sketch of the final version of the ALADDIN system



ALADDIN C2 Console presented by CS GROUP at Milipol 2019



SECOND PILOT TESTS AND DEMO IN GREECE RESCHEDULED TO OCTOBER 2020



Aerial view of Markopoulo Training Facility (Athens, Greece) and data capturing session in October 2019

ALADDIN is getting ready for its second pilot experiments and final demonstration to end users in Greece. This important event, which marks the completion of the ALADDIN project, was originally scheduled to take place in May 2020 at the Markopoulo training facility operated by Hellenic Police, near Athens (Greece), hosted by partner KEMEA. The lockdown produced by the COVID-19 crisis, which caused travel restrictions and the cancellation of numerous events, imposed a 4-month extension of the project with the final Pilot tests and DEMO rescheduled to October 2020.

The second pilot tests will take place at the same site as the data capturing session held in October 2019, useful for the final refinement of the Deep Learning and Data Fusion modules. With built-up and rural areas, the test site is representative of both the '*urban*' and the '*open field*' use cases.

This final ALADDIN event includes a training session on the Final version of ALADDIN platform, targeting the members of ALADDIN User Group (AUG), External Advisory Boards (EAB) as well as interested Law Enforcement Agencies (LEAs) across EU Member States. The members of the above-mentioned groups will have the opportunity to participate in training that aims to provide end-users with general fundamental information about drones, regulations, sensors and Counter-drone systems, as well as to train and prepare them to use the ALADDIN system.

A live demonstration, planned for 16th October 2020, will display the ALADDIN Final version in operation and will disseminate the major project achievements to the domain practitioners and interested authorities. The demonstration will include both rural and urban scenarios using different types and/or quantity of drones to achieve the best possible representation of a real incident. The evaluation of the ALADDIN system by the end-users is a key priority of the consortium and concludes the activities of the second Pilot.

ENHANCING COUNTER-DRONE STANDARDIZATION AND AWARENESS OF SECURITY RESEARCH

The ALADDIN consortium is active in promoting standardization actions concerning the integration of counter-drone technology in airport environments and in raising awareness of the progress in this particular area of security research among the scientific community, general public and at institutional level.



WG-115 Counter UAS

In October 2019, EUROCAE, the European leader in the development of worldwide recognised industry standards for aviation, launched a new working group: [WG-115 - Counter UAS \(C-UAS\)](#).

Sightings of Unmanned Aircraft Systems (UAS) in the vicinity of major airports and close encounters with aircraft have a great impact on flight safety. In order to avoid the massive flight disruptions experienced in recent times, **standards** will be needed to specify minimum performance of the surveillance system, interface requirements with airport stakeholders and interoperability requirements for the defensive capabilities.

[WG-115](#) is established to develop standards to support the safe and harmonised implementation of Counter-UAS Systems into airport and air navigation service provider (ANSP) systems.

ALADDIN partner **CS GROUP** has been appointed **Secretary of the WG-115** and is actively involved in drafting the above documents, contributing experience gained from the ALADDIN project.



Security Research Event – SRE 2020

The ALADDIN project has been selected by the Research Executive Agency (REA) to present at the [Security Research Event](#) (SRE) that will take place on **25 - 26 November 2020 at the World Conference Center in Bonn, Germany**. This would have been a great opportunity to raise awareness of European research and innovation in counter-drone technology to support the fight against crime and terrorism.

The Security Research Event (SRE) is the annual meeting where industry, governments and knowledge institutions come together to discuss the state of play and current challenges for security research in Europe. The SRE also features a large exhibition area dedicated to the EU funded security-related projects.

SRE 2020 was planned to be organized by the European Commission and the Ministry of the Interior of Germany as an event of the Germany's Presidency of the Council of the European Union.

Unfortunately, due to the COVID-19 pandemic, the **2020 Security Research Event / Innovation Forum (SRE/IF 2020) was cancelled**.

PUBLIC VERSION OF ALADDIN SOTA REPORT AND SOEL FRAMEWORK

ALADDIN SOTA report

The Consortium is proud to announce the release of the **Public version of the ALADDIN SOTA report** on counter-drone progress, available through the [ALADDIN website](#).

The continuous monitoring of the evolution of the drone threat and counter-drone response, contained in the semi-annual issues of deliverable *D4.x - Report on standardisation, regulation, and SOTA progress*, is a notable contribution of the ALADDIN consortium to the fight against rogue drones. By gathering relevant information and data from public sources, this deliverable aims at providing an overview of the State-Of-The-Art (SOTA) progress in countering malicious drones from a standardisation, regulation and technological perspective.

To enhance the public awareness of the project and its outcomes, and as recommended during the mid-project review, the consortium has decided to produce an unclassified (Public) version of the SOTA report, by extracting the most relevant information and avoiding sensitive details, so that it can be disseminated to external entities (out of consortium and European Commission). The Consortium proposes to deliver the confidential document to namely identified practitioners and researchers, in exchange of a Confidential Undertaking preventing public release or dissemination. Interested readers (scientific community, standardization bodies or trustful organizations) may request a copy through the ALADDIN email (info@aladdin2020.eu) or [contact form](#).





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SoEL framework



The Vrije University Brussels (VUB), as lead beneficiary for WP3 on Societal, Ethical and Legal (SoEL) aspects, will be delivering the **final version of the legal framework** (deliverable D3.2) designed to guide the ALADDIN project to meet the SoEL requirements. The outcome of D3.2, available through the [ALADDIN website](#), could be beneficial for both industry and future research projects dealing with similar security-related topics. VUB approached this complex matter in phases :

- The first task was to identify the applicable principles of law and ethics in order to establish a benchmark against which the project development has to be assessed. The **identification of the SoEL requirements** considered the applicability of data protection law, cyber law, frameworks on hijacking, spoofing, and jamming activities. Deliverable D3.1 (Feb 2018) summarises the detailed version of this analysis. The ALADDIN research is considered by specialized press as one of the *few studies on the legal implications of C-UAS in Europe* and a notable exception to the global scarcity of efforts to evaluate *how to mitigate privacy risks that could arise from the use of these system*.
- The second task was to define the methodology for the Impact Assessment of the ALADDIN project development against the identified legal and ethical frameworks. This **Impact Assessment framework**, described in deliverable D3.4, focuses on three critical elements: Data protection and Privacy, Ethical, and Liability.
 - The *Ethical impact assessment* takes into consideration the special features of the ALADDIN system and includes recommendations to the consortium partners to make the project ethically acceptable.
 - The *Liability impact assessment* also focuses on specific features of the ALADDIN system in terms of their criminal and non-criminal liability. A strict observance of these legal requirements is recommended until the completion of the project.

- The third task consists of conducting the periodical impact assessment, analysing the risks and producing the **Impact Assessment report**, including recommendations for risks resolution to the partners. To assess the impact of the ALADDIN system on the SoEL aspects, a questionnaire is prepared and sent to consortium partners. The answers are analyzed to calculate the risks. Depending upon the risk, a recommendation table shows whether a particular risk should be avoided, transferred, mitigated or accepted.

Monitoring is done on a periodic basis to check the proper application of SoEL frameworks and provide recommendations to be applied in future tasks. It is compulsory to apply the recommendation.

So far, the Impact Assessment framework, first **impact assessment report**, and first monitoring on the observance of SoEL requirement have been performed and well documented in the deliverables.

VUB and the project team are currently compiling recent legal publications, regulations, recommendations, and opinions (AESAs for instance) to produce the second legal framework report which will be released shortly after this newsletter.

(*) Arthur Holland Michel "Counter-Drone Systems" 2nd Edition, December 2019.

NEXT ALADDIN MILESTONES AND EVENTS

The project is progressing towards its completion, with the final **integration tests** of the ALADDIN platform rescheduled for late September 2020 and the second **pilot experiments** to October 2020. We warmly invite interested end users and Law Enforcement Agencies (LEAs) to join us during the **final ALADDIN demo** on 16 October 2020 in Athens, Greece, where the full capability of the system will be demonstrated. Scientific dissemination is ongoing with FADA CATEC presenting a paper at the 2020 International Conference on Unmanned Aircraft Systems [ICUAS'20](#) and CERTH contributing to the organization of the [2020 Drone vs Bird Detection Challenge](#). Despite the cancellation of the IEEE AVSS 2020 and the related WOSDETC workshop, due to the COVID-19 pandemic, the challenge is still running through a virtual meeting platform.

RELATED EVENTS



[ICUAS '20](#) - The 2020 International Conference on Unmanned Aircraft Systems, 1-4 September 2020, Athens, Greece.



Security Research Event 2020 (SRE 2020), 25-26 November 2020, Bonn, Germany
<https://www.securityresearch-cou.eu/SRE-2020>



Contact us:



For more information, please visit the **ALADDIN website**: <https://aladdin2020.eu/>



Send us an email to info@aladdin2020.eu



Join the LinkedIn group: [Counter-Drone group managed by Aladdin](#)

You may get involved in ALADDIN activities by joining the **External Advisory Board (EAB)** and the LinkedIn **Counter-Drone group managed by Aladdin (CDGMBA)**, a professional group with participants only by invitation. Send us an email (to info@aladdin2020.eu or through the ALADDIN contact form <https://aladdin2020.eu/contact-us/> if you are interested in joining the EAB or CDGMBA.

[Issue1](#), [Issue 2](#) and [Issue 3](#) of the Newsletter are available at the webpage: <https://aladdin2020.eu>.

