ALADDIN

Advanced ho**l**istic **A**dverse **D**rone **D**etection **I**dentification & **N**eutralization

Project Main Objectives

> Develop a counter-drone system

> Take into account Operational Constraints

> Enhance Security and provide tools for operational support to LEAs

Targeted audience

> Law Enforcement Agencies (LEAs)

- National/Civil Police

- Land Border Guards

- Coast Guards

> Critical Infrastructure Planners & Operators

- Governmental Facilities (Parliaments, Ministries, Prisons)

- Transportation (Airports, Rail, Ports, Roads)

- Energy & Environment (Nuclear, Electricity, Gas, Water)

- Events and sport installations

- Health & Emergency Services

- Financial Services

- Information & Communication Technology

Study and develop a state-of-the-art, global and extensible system to Detect, Localize, Classify and Neutralize suspicious, and potentially multiple, light drones over restricted areas.
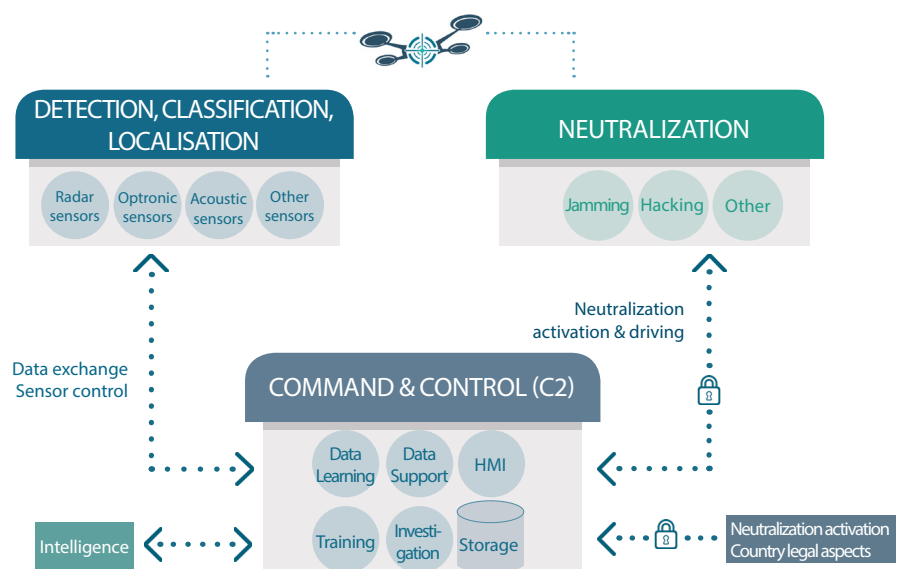
ALADDIN will study, design, develop, and evaluate, in series of complementary pilots, a counter UAV system as a complete solution to the growing UAV threat problem, building upon a state-of-the-art system and enhancing it by researching on various technologies and functionalities.

ALADDIN will follow a holistic and heavily user-centric methodology involving a large number of LEAs and critical infrastructure operators, as well as an External Advisory Board ensuring end-user diversity, as they all face different kinds of threats and work within different regulatory frameworks.

This diversity is important to shape EU-wide system specifications and the innovative training curricula that will be realized to share the knowledge gained and raise awareness.

Within the project all regulations, social, ethical and legal elements will be studied thoroughly and continuously with an impact assessment produced and its results monitored during the project's lifetime.

Notional Architecture

DETECTION, CLASSIFICATION, LOCALISATION

Radar sensors | Optronic sensors | Acoustic sensors | Other sensors

NEUTRALIZATION

Jamming | Hacking | Other

Data exchange Sensor control

Neutralization activation & driving

COMMAND & CONTROL (C2)

Data Learning | Data Support | HMI

Training | Investi-gation | Storage

Intelligence

Neutralization activation Country legal aspects

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ALADDIN Project

ALADDIN sensing arsenal is comprised of a set of custom, innovative, and unique technologies as well as established and standard sensors used for UAV detection and localization:

1) 2D/3D paired radars;
2) Innovative optro and thermal panoramic imaging;
3) Custom designed acoustic sensors.

ALADDIN will study and offer a set of neutralization effectors (jammers, physical and hacking).

These sensing and countering capabilities will be operated through an advanced command and control (C2) system. To improve detection and classification accuracy the C2 will fuse data acquired from all sensors through state-of-the-art deep learning techniques. Operator's efficiency will be enhanced through a novel mixed-reality interface with 3D cartographic and situational elements and will be complemented by support to operations like investigation and trainings.

ALADDIN Training

ALADDIN will offer innovative training curricula to act as a self-training tool. The purpose for that is the users of ALADDIN to have an overall understanding of all the aspects related to UAV threats and to be able to be completely autonomous with the use of the system. The main objectives of the ALADDIN training are:

> To raise awareness & share knowledge
> To effectively operate & use ALADDIN platform

The training will be broken down to theoretical (e-learning, classroom based learning) and practical (simulation, on-field) training. The learning content will be engaging, adaptive and interactive for trainees.

To start the training experience visit us at elearning.aladdin2020.eu and request your access by email info@aladdin2020.eu.

Consortium

> 18 partners, including 12 technical partners and 6 Law Enforcement Agencies (LEAs)

  - Coordinated by DIGINEXT (France)

> Grant Award in August 2017

  - Grant Agreement - 740859

> 3 years duration

  - Sept. 2017 to Aug. 2020

> 2 releases

  - Beta version - February 2019

  - Final version - August 2020

> Experiments in real environments

  - Open field & Urban area

Members of the ALADDIN consortium

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