KR10 – Detection of ground based and aerial intruders
KR16 – UAV neutralization mechanism

Modules

KR10

- PLS - Perimeter Laser Sensor V3.0
- LFS - Laser Fence Sensor V3.0
- 3D MND - 3-Dimensional Mini Drone Detector V3.0

KR16

- FH - Flying Hunter V3.0

Purpose

In **KR10**, 7SHIELD is bringing Perimeter Laser Sensor V3.0 (PLS) and Laser Fence Sensor V3.0 (LFS) for **ground level intrusion detection** against humans and vehicles; 3-Dimensional Mini Drone Detector V3.0 (3D MND) for **detection of intrusion by mini drones** in the air space above pilot sites..

In **KR16**, 7SHIELD is bringing Flying Hunter V3.0 (FH) for **"catching" the intruding mini drone** and bringing it to the predesignated location on the ground, enabling forensic analysis of the intruder.

Scope

PLS, LFS and 3D MND perform the role of **physical protectors to detect the intruders**, rise the alerts and give the coordinates information of the intruders (Human / Vehicle / Mini Drone) to 7SHIELD Platform.

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 883284

Partners

DFSL
Israel

Dr Frucht Systems Ltd (DFSL) focuses its activities on LIDAR based products. DFSL's products are already installed in various airports, power stations, jails and sensitive civilian and military sites. DFSL has developed Flying Hunter (FH), a **novel, state-of-the-art, green and robotic method** for neutralisation of Remotely Piloted Airborne Systems (RPAS)/Mini-Drones.

Contribution

DFSL's sensors and FH are produced by DFSL itself. Sensors communicate with 7SHIELD Platform in sending the **detection messages via Kafka broker**.

Stakeholders

These products are most useful in Home Land Security requirements (HLS) for **Critical Infrastructures** as well as for lesser critical ones.

All the modules developed in the frame of 7SHIELD have been designed with the consultancy of identified external stakeholders, first responders and following the **requirements** provided by the partners working in the space sector acting as Pilots, who provided the Critical Infrastructures for **testing and demonstration**.

KR10

Detection

Sensors Technologies

PLS

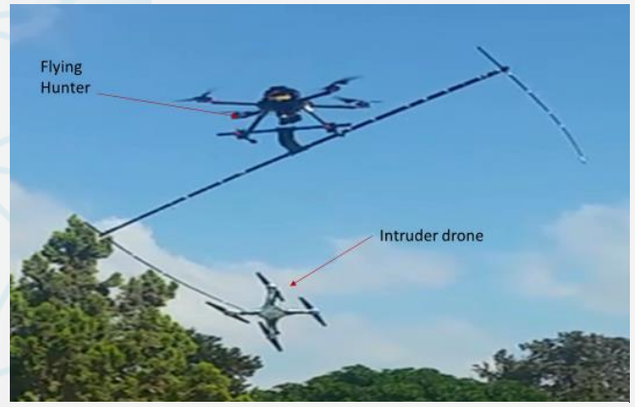
3D MND

LFS

KR16

Response

Crisis Management



FH

Technology

DFSL's sensors are based on **LIDAR** Technology - using Lasers. FH is a **very specialised drone** designed and assembled by DFSL: FH flies to the intruding mini drone captured using under-belly net and brings it to a predetermined location on the ground and drops it there.

This way, forensic analysis of the mini drone can be carried out as the mini drone is not destroyed.

Future Improvements

With further innovation and technological improvements, **detection probability** of the sensors can be maximized.

Moreover, autonomous mini drone neutralization can be thought of where **automatic launching** of FH can be achieved and **automatic travel** of FH towards mini drone is done followed by **autonomous "catching"** of mini drone without any external operator involvement from the ground.

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