What can a drone means for security/safety in Belgium?!

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Safeshore-ALFA Common Dissemination Event

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Why do we participate?

- ↗ illegal use of drones → demand for detection equipment (reliable and inexpensive)
- Value Safeshore: detect **small** targets (generally) not visible with traditional systems
- Can be integrated in MIK (Maritime Data Crossroad) → collecting, analysing and sharing data
- Examples Safeshore can be useful:
  - Detect small vessels with drug shipments or use for human trafficking
  - Faster reaction when vessels or persons are in need
  - Provide information for decision taking:
    - Events
    - Security institutions

Legitimate use of UAVs for deliveries

- Commercial drones and UAVs are an affordable technology that started to be used in pilot projects for delivery of goods.

- Such a pilot project has been run by Amazon for parcel deliveries since 2014, under the name "**Amazon Prime Air**".

- UAVs have been used in proof-of-concept projects to **deliver first-aid equipment** in case of emergencies (run by TU Delft University in Netherlands).

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Why do we need a system? - Illegal use of UAVs

- UAVs can be used for smuggling items over borders or in restricted areas, in order to avoid detection of illegal items or to avoid taxing.

- Such a UAV has been found crashed in Tijuana while carrying **high risk drugs** (**Mexico**, 20 January 2015).

- In another incident, a drone was used to deliver a container with **radioactive material** on the roof of the **Japan**'s Prime Minster's residence (9 April 2015).

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Why do we need a system? – Illegal use of UAVs

- Despite drones being banned in France, 56 cases of drones **illegal surveillance of nuclear power plants** since October 2014

- France has started a 1 million EUR program to develop drone detection solutions.

- Drones were used in a public event during the **Angela Merkel** election campaign in 2013.

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Why do we need a system? – Illegal use of UAVs

- Criminals use drone to **deliver drugs** straight to prisoner's cell window in unique smuggling bid (Manchester 22 April 2016) – also observed in Belgium
- The same event has been caught on CCTV in Wandsworth Prison, London
- Drones are being used as **tactical intelligence gathering platform by organized crime**, in order to plan and coordinate border traffic

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Why do we need a system? – Migrants in rubber dinghies

- With the crisis in the Middle East and Africa, 1000s of migrants arrived on the European shores in **rubber dinghies which are not detected by conventional radar systems**.
- Refugees rescued trying to get to UK in inflatable dinghy (Dunkirk 1 April 2016)

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H2020 Call BES-02-2015 Maritime Border Security

Topic 2: Affordable and easily deployable technologies for EU coastal border surveillance with reduced impact on the environment

Specific challenge
- The use of **low cost and "green" technologies** is expected to become mandatory for future border control systems in environmentally sensitive areas. Passive systems fit this application, due to electromagnetic invisibility, **lower detectability** and cost and the possibility of use practically anywhere.

Scope
- Further development of **devices and sensors for maritime targets and environment** (e.g. fit for mobile platforms) easily deployable on field and with **limited impact on spectrum environment**.
- Development of specific, early identification, **tracking and fusion** algorithms
- Operation in **network configurations** together with other systems for improved performances

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What do we need?

Design of C-UAV solutions in Belgium – Operational deployment-matrix
[Conclusions R&D – WG RPAS@Police]

Scenario	Type event	Type risk	Detection – Classification – Identification Safeshore			Neutralization Additional need		
			Type of action	Method	Operator	Type of action	Method *effectors*	Operator
Incidents involving a drone	not-planned unforeseen event	Public order Public safety safety - security	reactive action	visible with priority → *localisation dronepilot/-operator*	police *(intervention due to 101-call)*	reactive action	interception dronepilot/-operator	police *(intervention due to 101-call)*
							kinetic physical	
			permanent fixed installation	radar	Army (CRC Glons)		non-kinetic electronic	DSU *(activated as specialized support)*
							kinetic physical	Army

Adaptability to other uses

Protection of Critical Infrastructure

- Rogue drones can be used to deliver explosive charges or CBRN agents as part of a terrorist attack against **Critical Infrastructure sites**
- Early detection of such drones can be used in **combination with various counter-drone measures** (entanglement nets, ballistic)

Protection of government officials

- Drones are a risk factor in case of public events where **government officials** or other VIPs can be the target of **attacks using drones** as means of delivery
- Early detection of such drones can be used in combination with various counter- drone measures (entanglement nets, ballistic) or evacuation measures

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Thank you!!!

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