

RUAG VIRTUAL INNOVATION FORUM

Virtual secondary Drone based screening

Presenter: Reto Nobs

Function: Managing Partner responsible for Sales and Partnerships



ARTKIS RADIATION DETECTORS

1 | WHO WE ARE

Mission: Making the world a safer place

Base: Swiss Company, located in Zürich

Products/services: Gamma- and Neutron Detectors

Team: 15 highly qualified employees in research, development, sales

2 | CUSTOMERS

Government Agencies (Darpa, Arma-Suisse, EU), Industry and Recycling companies, Nuclear-Decommissioning, Borderpatrol, Nuclear Agencies, Military, Harbors and Airports.

3 | OUR FUTURE

Digitalization of radiation detection, Machine learning algorithms

Integration for 1st responders in existing CBRNe solutions and Security enhancement such as X-rays scanners at Airport

4 | PROJECT WITH THE RUAG INNOVATION ACCELERATOR

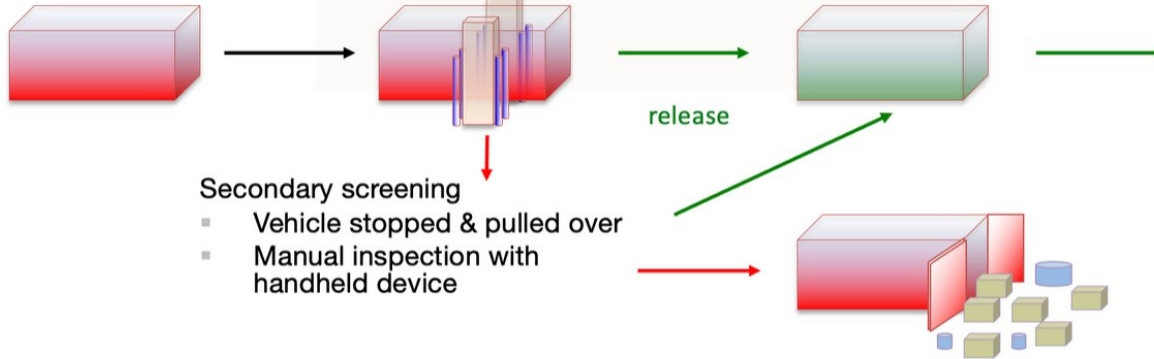
UAV based secondary screening equipped with proprietary radiation sensor technology

PROJECT: DRONE ASSISTED SECONDARY INSPECTION

Legacy Operations

Primary screening using Arktis RPM

- few seconds
- 0.5-2% alarm rate

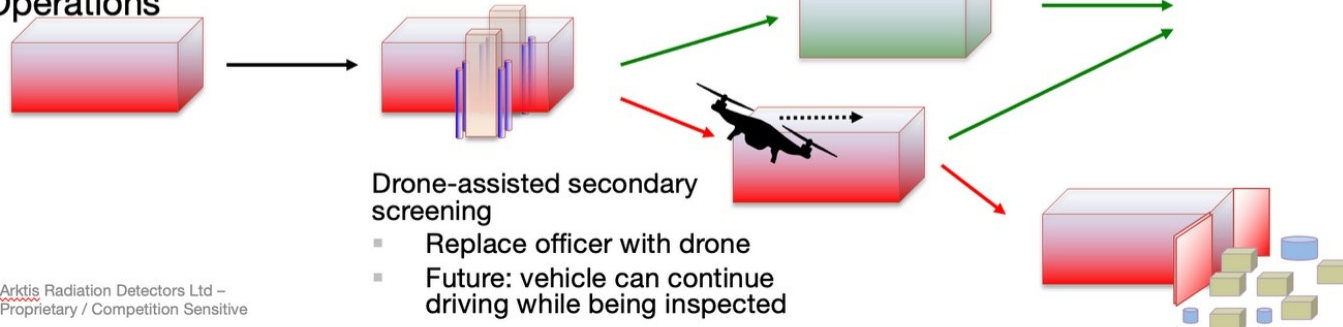


Secondary screening

- Vehicle stopped & pulled over
- Manual inspection with handheld device

Drone-assisted Operations

Primary screening using Arktis RPM



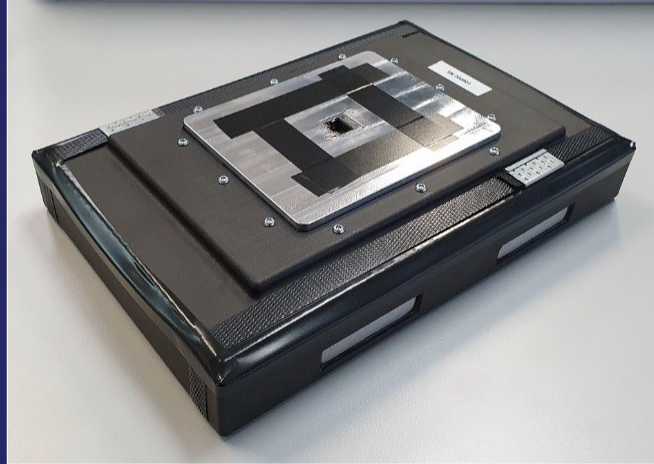
Drone-assisted secondary screening

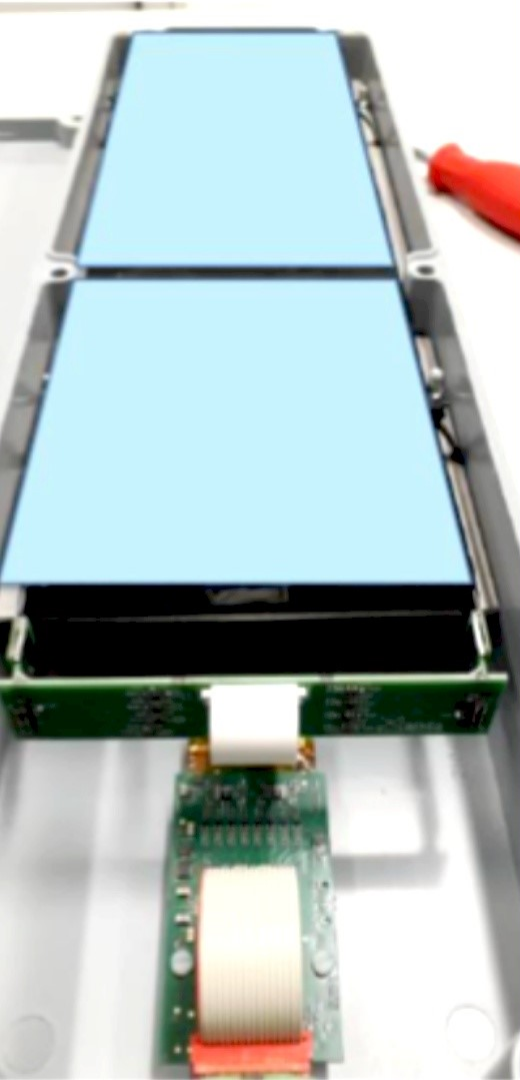
- Replace officer with drone
- Future: vehicle can continue driving while being inspected



CORE TECHNOLOGY OF THE PROJECT

Flat Panel Gamma Detector





THE FLAT PANEL GAMMA DETECTOR

The advantages

90% COGS REDUCTION

Fully digitized with standard components. Easy set up for mass production. Independent of rare resources.

99% LESS SURPLUS VOLUME FOR READOUTS

Very small form-factor. Possibility of pixelation by using many FPGs combined. Solid State optical readout vs. vacuum Photomultiplier tube

LOWER POWER CONSUMPTION

Power over Ethernet, no internal Powersupply necessary

FULLY DIGITIZED

Low cost of integration (PoE)

Not affected by electromagnetic noise such as X-Ray. More rugged than "glass tube"-technology

WHERE?



GAMMA DETECTION EVERYWHERE

Flexible Gamma Detection in different scope of work, such as Security, 1st Responders or integration in existing screening technologies



APPLICATION

Due to the form factor and weight and the low power-consumption makes it possible to use it in Drones, Robots or include it in existing systems such as X-Ray, Conveyor Belts etc



MARKET

Airports, First Responders, Drones, Nuclear decommissioning, Official Buildings, Mail Forwarder, Container Ships, Harbours etc.

MEET THE MANAGEMENT TEAM



ULISSE GENDOTTI



RICO CHANDRA



RETO NOBS