

IBATECH



Your CBRN partner



Antonio Menéndez – R&D Director

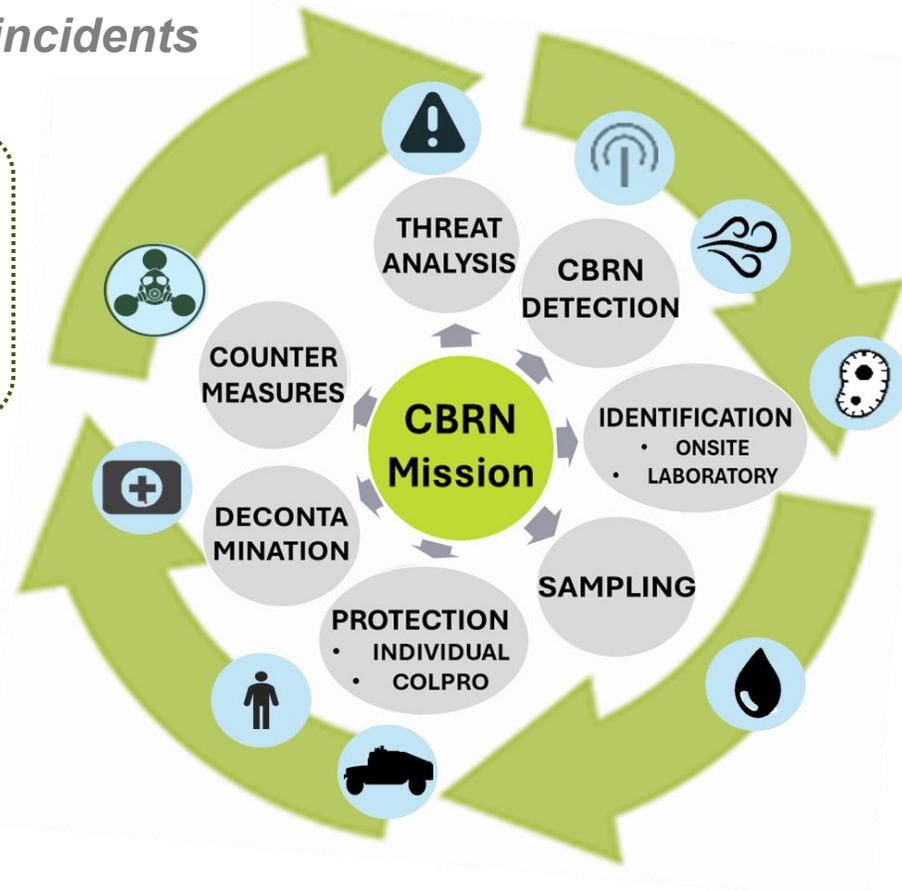
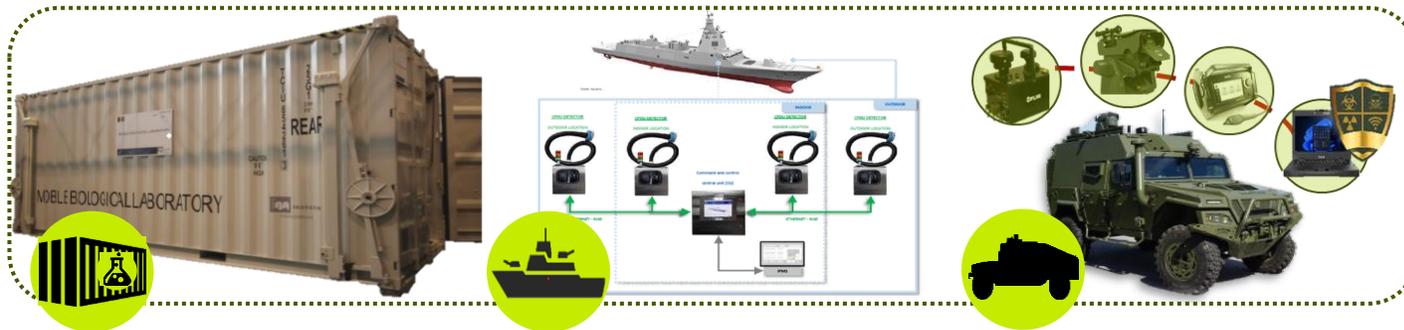


1. Expertise: Mission & CBRNe solutions

Spanish SME, engineering firm founded in 2009, following **+25 years'** professional experience and have **focused on** chemical, biological, radiological, nuclear **CBRN solutions** ever since in **defence and security sectors**.



Management & assessment of CBRN incidents



Our mission is to support security in the **CBRN field** for key stakeholders & end users:

- NATO
- MoD & Armed Forces
- Spanish law enforcers
- First Responders
- Large companies

IBATECH's core

R&D programs

CBRN integration projects

Consultancy + international cooperation & Adelfas

CBRN Equipment distribution maintenance & training

2. CBRN solutions

Applications



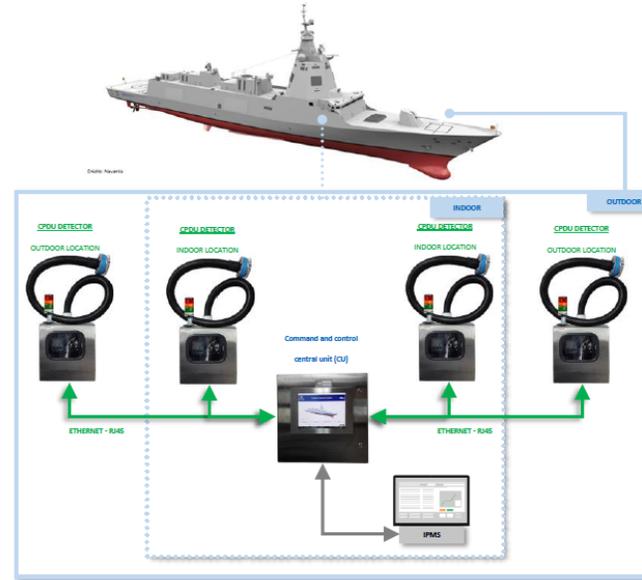
- Response to CBRN events (Natural or Intentional)
 - Defense & Civil Protection
- Protection of Critical Infrastructures, Personnel
 - Buildings, Vehicles, Ships
- Identification and forensic systems:
 - Deployable Labs
- CBRN Networks and Payloads
 - UGV, UAV
- New technologies, R&D, research programs and international cooperation.
- Training, work procedures and maintenance.



2.1 CBRN platform integration: Naval CBRN monitoring



AVANTE 2200 chemical detection system, Saudi Arabian corvettes designed by Navantia, providing chemical warfare agent (CWA) and toxic industrial chemical (TIC) protection integrated to ship IPMS.



Hazardous gas detection and monitoring solution – new frigate F110 CBRN monitoring integrating chemical, biological and radiological detection systems to the ship IPMS. Gas detection



2.3 CBRN platform integration: UAV & UGV developments



UAVs payload. Tasks within WP1-7: requirements, studies, design, prototyping, testing, etc.

Chemical hazard payload 

TELEDYNE FLIR MUVE® C360 

CO, Cl2, O2, NO2, H2S, SO2, LEL PID VOC 10.6 eV (ppm)

EnviroNics



CWA detection y TICs
Sensors: IMS and y semiconductor sensors
Comms: WLAN, WPAN, radio and USB.



Radiological hazard payload 

TELEDYNE FLIR

MUVE® R430 



kromek® AARM

LIDAR and GPS
Sensors: CZT, CsI (TI), SiPM.
Comms: GSM, radio and USB



Biological hazard payload 

TELEDYNE FLIR MUVE® B330 

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UGV payload   

(FYI: out of scope)

TELEDYNE FLIR

FirstLook® - PackBot® 510



2.4 Integration – mobile laboratories



Biological Laboratory (MALE)



Biological aerosol laboratory (INTA)



Biological safety lab – DIMLAB – (NATO)

Biological BSL-3 Lab Moldova (NATO)





3. Consultancy & international cooperation

European Centres of Excellence



Project	Partners
P-23 - Building capacity to identify and respond to threats from chemical, biological, radiological and nuclear substances <i>(Tunisia, Senegal, Iraq, Cambodia, Albania & Moldova)</i>	 
P-34 - Strengthening capacities in CBRN response and in Chemical and medical emergency <i>(Iraq, Jordan & Lebanon)</i>	 
P-35 - Management of hazardous chemical and biological waste in the African Atlantic Façade region and Tunisia <i>(Tunisia, Morocco, Gabon & Mauritania)</i>	 
P-72 - Developing and strengthening the capacities for the management of risks associated with the land transport of chemical and biological materials (SECTRANS NAS) <i>(Algeria, Burkina Faso, Mali, Morocco, Niger, Tunisia)</i>	  
DIMLAB project for NATO-SPS Managing and design <i>(Morocco and Tunisia)</i>	    



4. CBRN equipment: capabilities



Confirmed identification
(PCR, Cultures, microscope)



Provisional ID
(Proteins, BTA, Elisa)



Sampling
(Aerosols, solids, liquids & surfaces)



Bio aerosol detection



Stand-Off



Confirmed ID
(Traces)



Preliminary ID
(Bulk)



Individual detection & Monitoring



Basic detection and sampling



New focus



Detection & Identification



Radiological detection



Dosimetry



Decontamination & Protection



5. Background in R&D Programmes



IBATECH promotes and manages R&D work for new technologies or existing capabilities. We enhance user CBRN capabilities in close collaboration with **more than 25 organisations**.

EU and Spanish R&D Projects

Customer

ESCUDO CBRN - CBRN communication and detection system



ASTROLABIO. Laser excitation-induced fluorescence multispectral for biological detection

QUIXOTE (QUICK XOr TEchnology for B&C cold-plasma decontamination decontamination)



ROCSAFE - Remotely operated CBRNe scene assessment forensic examination



NAIADES - A holistic water ecosystem for digitization of urban water sector



QUIXOTE II (QUICK XOr TEchnology for B&C cold-plasma decontamination II)

SOBID (Stand-off biological detection)



MASC-CBRN – Methodology for assessing States Capacity for Countering the Hostile Misuse of CBRN knowledge and material.



(External contributor) eNOVATION - Extended Network of CBRN Training Centres for Innovation



COBRA - Cold Plasma Decontamination for Indoor Environments (IDI)



ARGUS – Portable Advanced Sensory Platform for CBRNE Threats (*Misiones*)

AIDMAN – All In one Device for Monitoring of Airborne viruses by Non-experts



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Your CBRN partner in R&D!



5.1. R&D Programme - Main interests

CBRN solutions



Land-based CBRN system



Naval CBRN monitoring

DECON sensitive material



2024-2027



Ongoing



2026-2029

Next steps, our role, as CBRN partner:

- Studies
- Design
- System prototyping
- Validation with security practitioners



2017-2023



Finished

- Naval gas detection – AVANTE – Saudi Arabia 2200 corvettes
- CB laboratories NATO
- Bio laboratories (MALE / INTA)
- Land based CBRN vehicle
- CBRN for UGV & UAV
- Naval CBRN: F110 frigate
- Naval gas detection system: F110 & UK FSS
- Land based CBRN systems + filtration
- Decontamination system – Quixote II
- CBRN monitoring networks



CBRN integration systems roadmap

New R&D actions

Main programmes

(expected partners)

- European Defence Fund
- Horizon Europe Cluster 3 - Civil security for society, or 1, 5, 6.
- NATO – Science for Peace & Security
- European Defence Agency tenders
- LIFE Programme

Coordinator: Large industry or MidCap

- Eurostars *Other SMEs and RTOs*
- Misiones CDTI (Spain)
- Coincidente (Spain)

- PCP or PPI *Large industry, Midcaps, SMEs or RTOs*

5.2 R&D - NTP / Cold plasma: R&D projects roadmap



2015-2018



QUIXOTE. Atmospheric Pressure Plasma Chamber (APPC)- NTP lab device with 25 l of chamber capacity



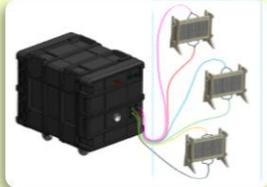
2025-2027

Sensitive material DECON station



- SMALL CHAMBERS**
- Pendrives / USB
 - Handheld devices
 - PCBs
 - Electronics
 - Medical equipment

COBRA. NTP device without chamber for confined spaces like vehicles cabinets



2022-2025



QUIXOTE II. NTP prototype with 1m3 of chamber capacity



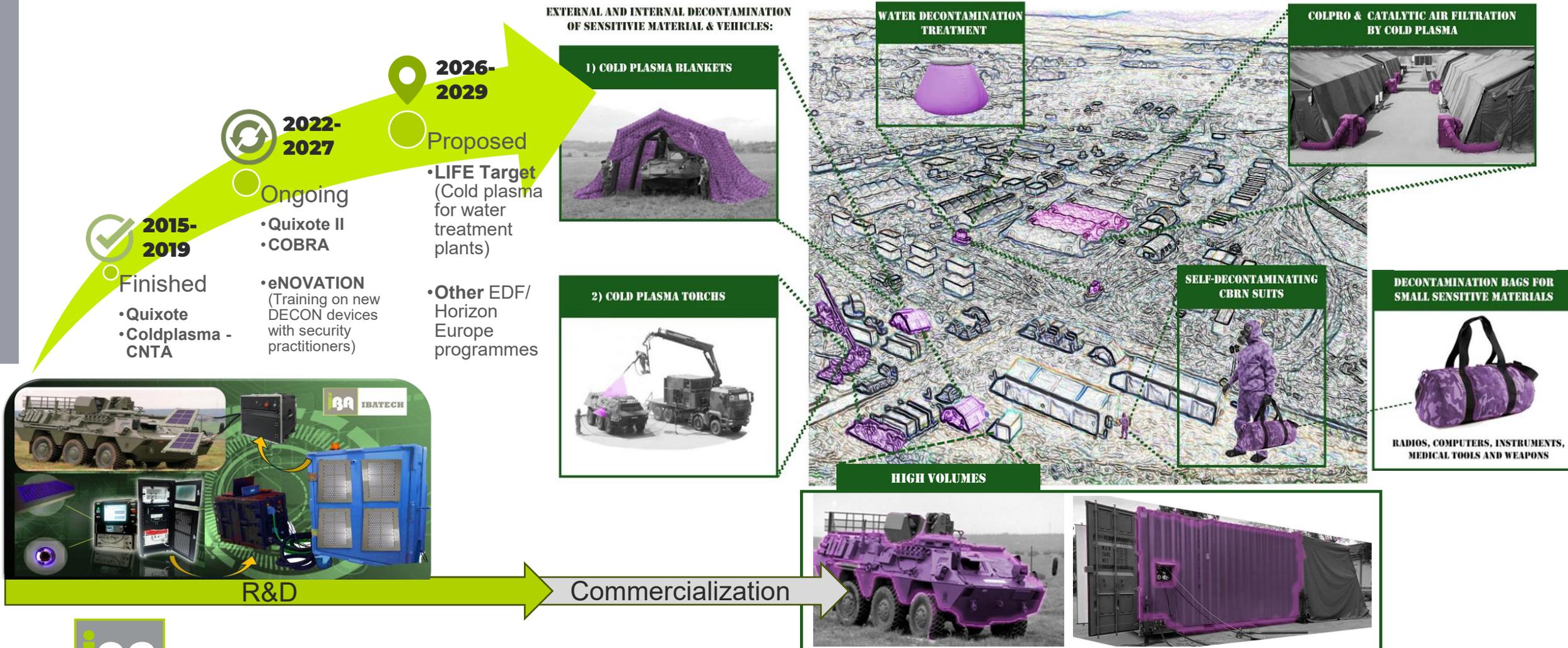
R&D

Commercialization



Your CBRN partner in R&D!

5.3 R&D - NTP / Cold plasma: R&D projects roadmap & Commercialization of DECON potential applications

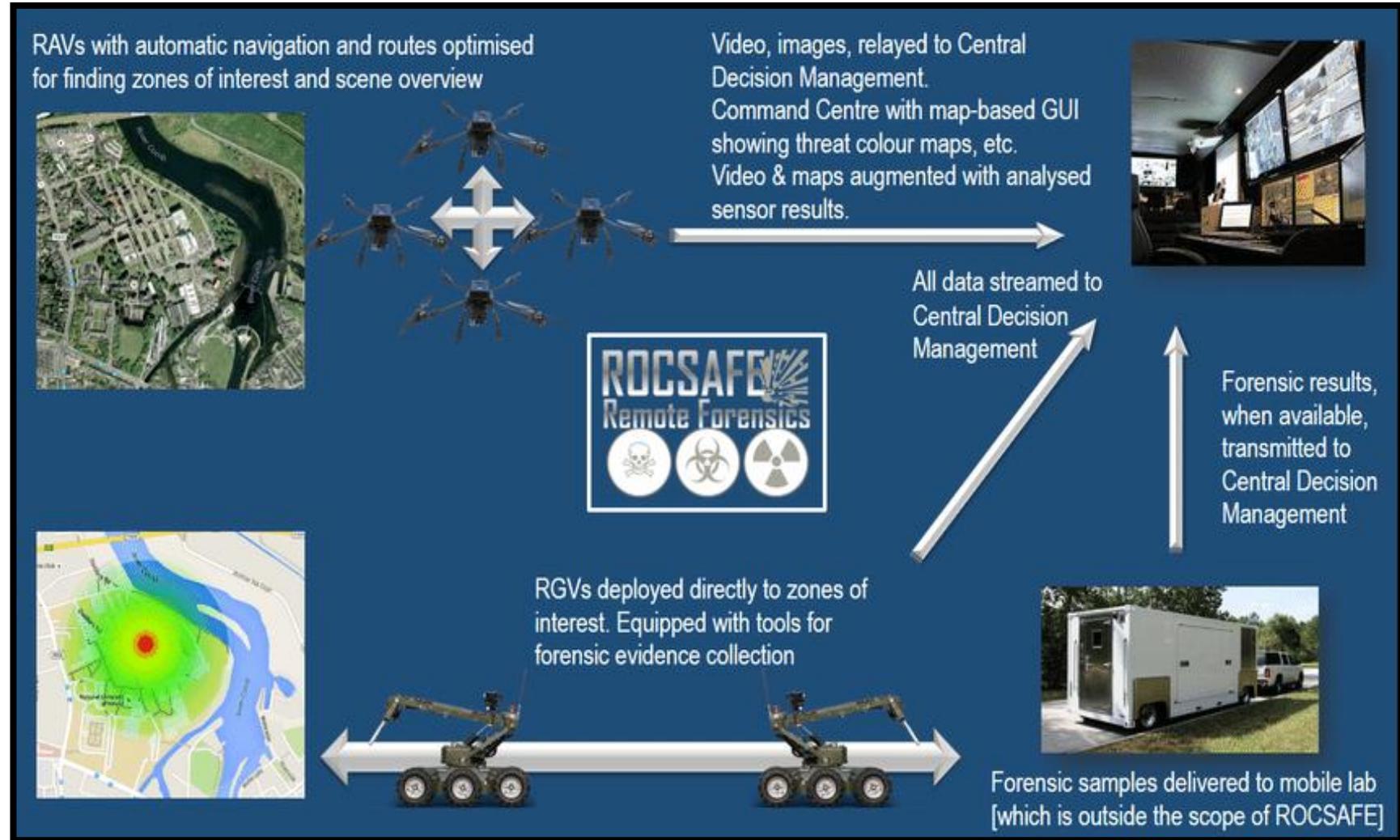


5.3 R+D – management & assessment of CBRN incidents



H2020 ROCSAFE “Remotely Operated CBRNe Scene Assessment Forensic Examination”

H2020 Project finished whose main aim was the harnessing of robotics and AI to gather forensic evidence in the event of chemical, biological or nuclear incidents



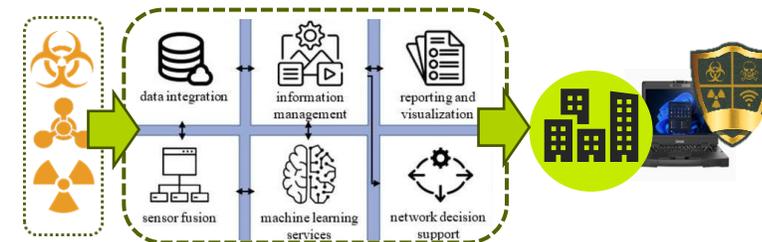


5.4 R&D – CBRN multipurpose system in critical infrastructures: urban environment scenarios.

CBRN monitoring network tailored to the urban scenario's specific requirements.

Background

IBATECH provides background in R&D demonstration cases in public spaces. Successful trials were carried out, at TRL5, with a portable CBRN monitoring system on *Thyssen-Bornemisza National Museum*, receiving around 84,000 monthly visits.



Biological Alert System



R&D of new capabilities for AI and CBRN data fusion, communications, software for CBRN management

Proactive CBRN-E response scheme

Multi-domain CBRN sensing networks



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6. CBRN Integration & DECON projects roadmap

Products



DECON sensitive material



2024-2027

2025-2029

Next steps

Ongoing

2017-2023

Finished

- Naval CBRN: F110 frigate
- Naval gas detection system: F110 & UK FSS
- Land based CBRN systems
- Decontamination system – Quixote II

- Naval gas detection – AVANTE – Saudi Arabia 2200 corvettes
- CB laboratories NATO
- Bio laboratories (MALE / INTA)
- Land based CBRN vehicle

- Kuwait
- Qatar
- Saudi Arabia
- Morocco
- Tunisia
- Romania
- Poland
- Finland
- Moldova



CBRN integration systems roadmap

Commercialization

Roadmap to international market expansion

- Other EU-27 Member States
- Other European countries
- MENA countries
- Middle East countries



Your CBRN partner!
Join us in this challenging adventure!

**Thank you very
much for your
attention !**



amenendez@ibaconsultores.es



+34 628 28 11 31



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