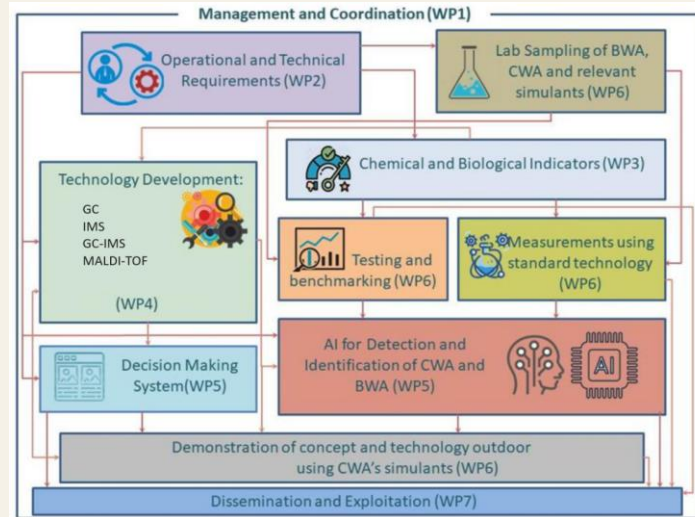


Context

In Europe, there are still technological gaps in several aspects of **the chemical, biological**, radiological and nuclear (CBRN) Security Cycle. Specifically in the devices for rapid detection, identification and monitoring of low-volatile chemical warfare agents and non-volatile biological warfare agents, mainly in complex natural environments.



Objective

TeChBioT aims for the development of a universal detection technology based on high-temperature (HT) **ion mobility spectrometry (IMS)** with optional **gas chromatography (GC)** pre-separation and **pyrolysis (Py)** for fast detection and identification of nonvolatile biological and low-volatile chemical agents.

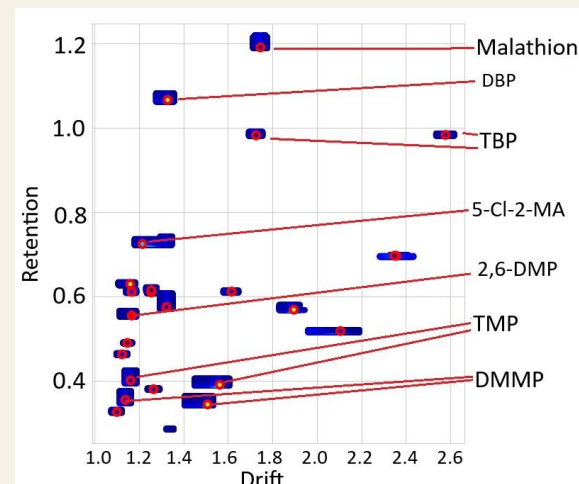
The technology is supported by **Artificial Intelligence (AI)** models to reduce dimensionality and enable distinguishing of bacteria, fungi, viruses, low volatile chemical warfare agents, and toxic industrial compounds.

EDF: TeChBioT

Surveillance and Reconnaissance Techniques for Chemical and Biological Threats

Methodology

Development of the **hardware oriented to rapid detection** of chemical and biological weapons at hazardous levels. A **database of substance signatures** is built to support **statistical learning models** for accurate identification and classification. This ensures fast, reliable, and data-driven detection in critical scenarios.



Partners



DEFENCE



Royal Military Academy



Leticia Velasco Fernandez
Coordinator (CHCH)



Skralan Hosteaux
Co-promotor (MWMW)



Oscar Olarte Rodriguez
Researcher (MWMW)

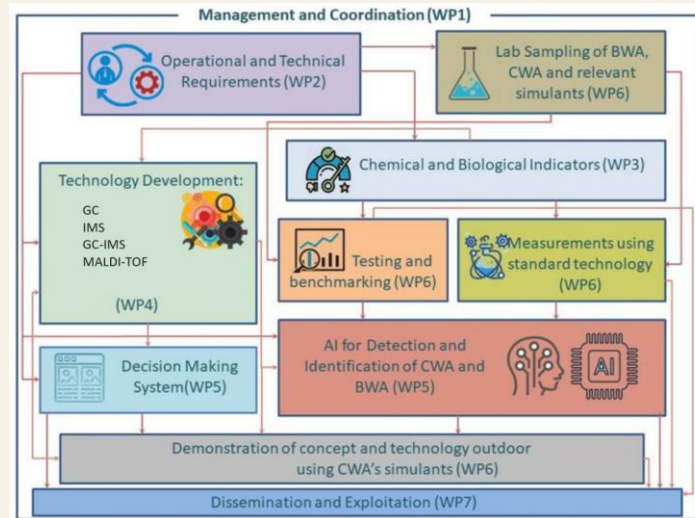


Darius Couchard
Researcher (MWMW)



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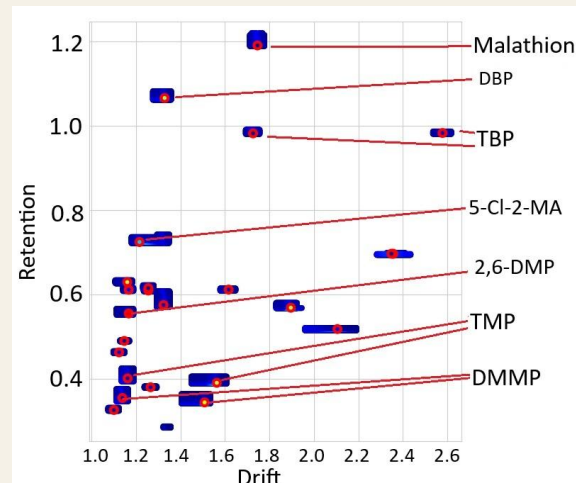
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