



ODYSSEUS

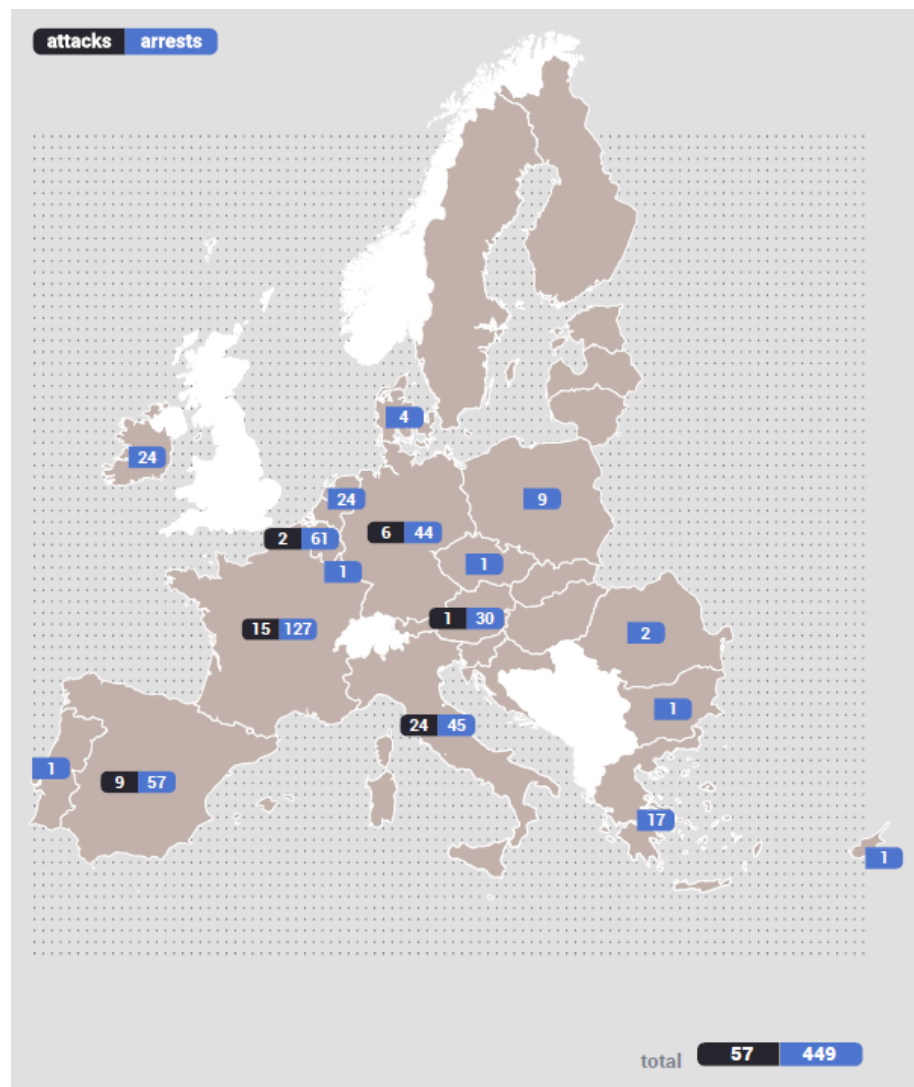
PREVENTING, COUNTERING, AND INVESTIGATING TERRORIST ATTACKS THROUGH PROGNOSTIC, DETECTION,  
AND FORENSIC MECHANISMS FOR EXPLOSIVE PRECURSORS

*PREVENTING, COUNTERING, AND INVESTIGATING  
TERRORIST ATTACKS THROUGH PROGNOSTIC,  
DETECTION, AND FORENSIC MECHANISMS  
FOR EXPLOSIVE PRECURSORS (**ODYSSEUS**)*

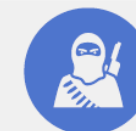


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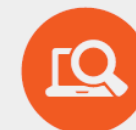
# European Union Terrorism Situation and Trend report 2021



NUMBERS OF TERRORIST ATTACKS APPEAR TO HAVE REMAINED LARGELY STABLE.



MODE JIHADIST



JIHADISTS OPERATING ONLINE CONTINUED TO STRUGGLE TO REBUILD THEIR NETWORKS AFTER THE 2019 TELEGRAM TAKEDOWN.



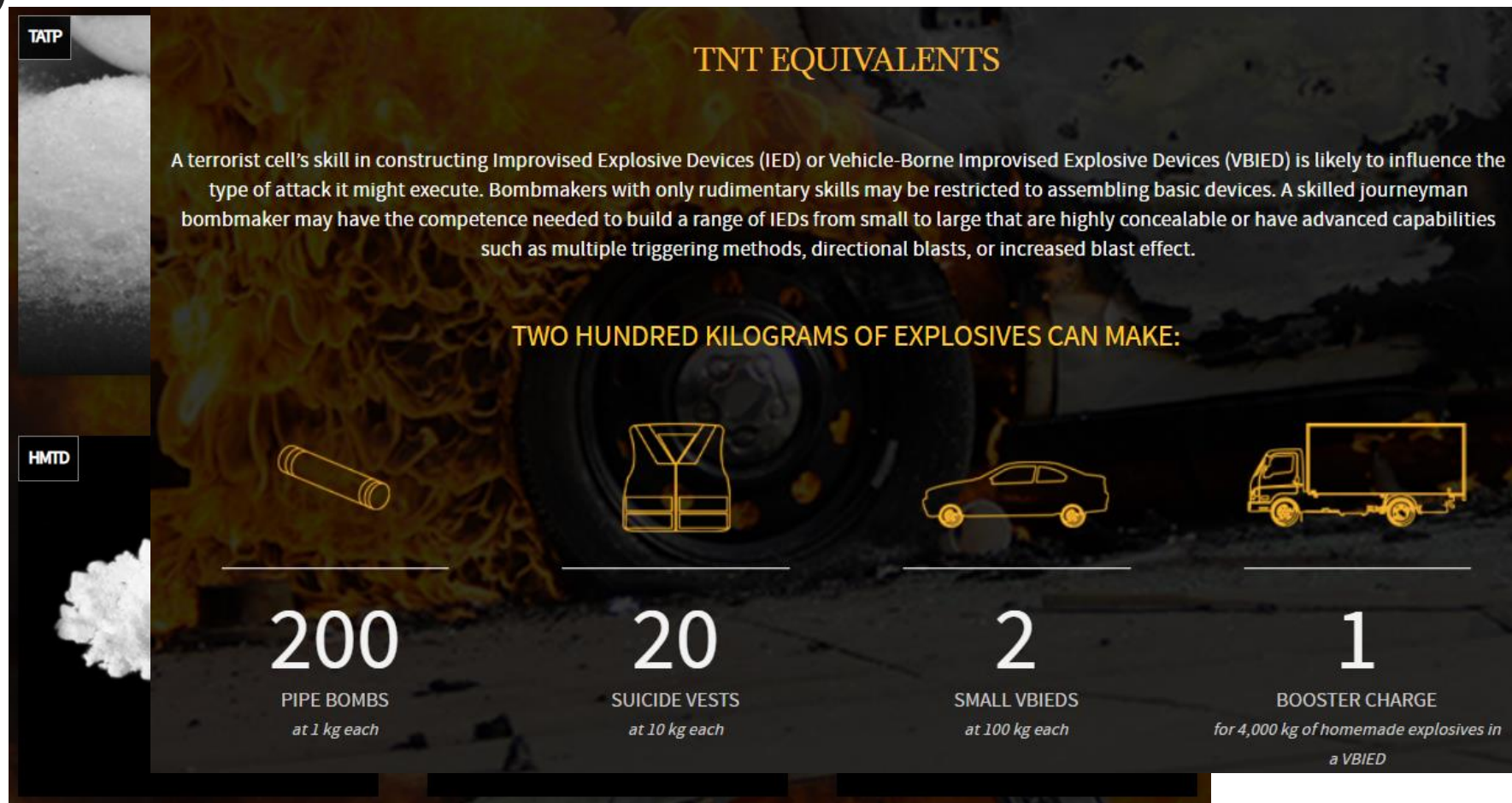
JIHADIST ATTACKERS CONTINUED TO



COVID-19 DID NOT FUNDAMENTALLY MODIFY CORE TERRORIST MODI OPERANDI.



# Setting the scene



Source: <https://www.dni.gov/nctc/index.html>



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# *Aim*

ODYSSEUS aim is to increase the knowledge on a continuously revised list of explosives and explosive precursors, including precursors not previously studied, and also develop effective and efficient prognostic, detection, and forensic tools and solutions to improve the capabilities of LEAs and Competent Authorities towards the prevention, countering, and investigation of terrorist incidents involving HMEs.

- (i) online HMEs recipes collection, analysis, and characterisation;
- (ii) chemical supply chain monitoring for irregularity detection;
- (iii) advanced sensors for detecting in (near) real-time explosive precursors in gas phase and also in water;
- (iv) robotised tools for improved mobile detection and in-situ forensic support; and
- (v) automated threat detection, localisation, and assessment; these tools will also be integrated into a configurable platform that will assist LEAs' operations in diverse terrorism-related scenarios



# *Our approach*

## **ODYSSEUS aims to improve the prognostic intelligence, detection, and forensic capabilities**

- (1) Discover potentially hitherto unknown information about explosive precursors and HMEs
- (2) Monitor chemical supply chain operations in order to identify anomalous patterns that may predict future threats
- (3) Detect potential threats in identified areas of interest
- (4) Facilitate mobile detection of explosive precursors by using Unmanned Autonomous (Aerial and Ground) Vehicles
- (5) Support forensic investigations through automated sample collection by robotised tools





# ODYSSEUS will address

## Online HMEs recipes collection and information extraction

1. Discovery & crawling of HMEs recipes on online sources
2. Multimodal data analytics on online HME recipes



## Explosive precursors identification, characterisation, and analysis



## Chemical supply chain ecosystem analysis for irregularity detection

1. Collecting and simulating data from online and offline chemical marketplaces
2. Detection of suspicious transactions in chemical marketplaces
3. Identification of irregularities across the marketplace ecosystem



# *ODYSSEUS will address*

## **Sensor development/deployment for the detection of explosive precursors**

1. Detector adaptation for gas phase precursor detection and identification
2. Sensor optimisation for substance detection in water in (near) real time



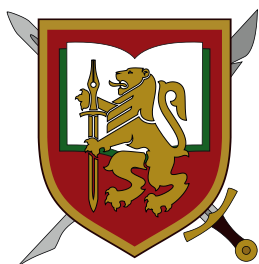
## **Robotised tools for improved mobile detection and in-situ forensic support**

### **Threat detection, localisation, and assessment**

1. Airborne and non-airborne threat detection and localisation



# Our Consortium Partners



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*Thank you for your attention!*

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ODYSSEUS Project



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