



# CHARIOT – 3<sup>rd</sup> Workshop

Wednesday 22 October 2020 (online)

## PREVENT

### PRocurEments of innoVativE, advaNced systems to support security in public Transport

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## Context

- **Topic:** SU-GM02-2018 - Strategic pre-commercial procurements of innovative, advanced systems to support security
- **GA N°:** 833444
- **Duration:** 15 months
- **Start date:** 01/05/2019
- **End date:** 31/07/2020
- **Website:** <https://prevent.eng.it>
- **Coordinator:** Engineering Ingegneria Informatica SpA



# What is PREVENT about?



- **PREVENT focuses on pre-empting attacks in public transport by:**
  - **enabling earlier detection** of terrorists activities and potentially dangerous objects;
  - **tracking** of detected individuals or potentially dangerous situations;
  - **coordinating the response** of security forces.



Picture source: UITP



Picture source: Transport for Greater Manchester (TfGM)



## Motivation

- Public transport represents a **privileged target for terrorist attacks**, for many reasons:
  - **high concentration of people**
  - **high number of potential targets for explosive, shooting or stabbing attacks**
  - **ease movement of terrorists and multiplicity of weapons** in different countries



# Motivation – real case

## **Berlin, Germany, 19/12/2016**

A ram truck rushes into the crowd gathered at the Christmas market in Berlin. Twelve people are killed. After interrogating a first suspect, who was quickly released, the police found in the truck, identity papers belonging to Anis Amri. A European Arrest Warrant is issued Tuesday night.



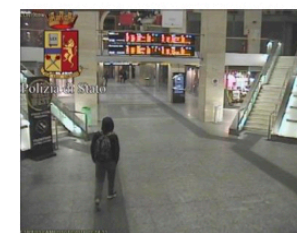
## **Lyon, France, 22/12/2016**

Anis Amri is filmed by CCTV cameras at the Lyon-Part-Dieu train station inside the station and on a platform. The suspected terrorist bought a ticket for Milan, with a correspondence in Chambéry



## **Milan, Italy, 23/12/2016**

- The Italian police broadcast an image of a man identified as Anis Amri. This shot is taken from the CCTV cameras of the Milan train station. It is 00:58 on the night of Thursday to Friday night two hours before being shot by police during an identity check.
- Anis Amri is controlled in Sesto San Giovanni, north of Milan. He joined this neighborhood by bus. During an identity check, he tries to pull out his gun, the police replicate and shoot him down.



## **Brussels, Belgium**

Anis Amri is filmed by the CCTV cameras inside the Brussels North train station



## **Nijmegen, The Netherlands, 21/12/2016**

The alleged perpetrator of the Berlin bombing took a bus at a bus station in Nijmegen, near the border with Germany. He mounted armed in the bus.



## Motivation – other real cases

- **August 2015:** attempted mass shooting on **Thalys from Amsterdam to Paris** / assailant with assault rifle, 270 rounds of ammunition, pistol, knife and bottle of petrol / subdued by passengers
- **March 2016:** coordinated suicide bombings by different individuals acting as a coordinated group in Brussels, one of which took place in **Maelbeek subway station** / terrorist carried explosives on the middle carriage.
- **October 2017:** fatal stabbing of 2 civilians at **train station Marseille Saint Charles** / assailant killed by French soldiers on site



## Operational approach

- ✓ **PREVENT** involves **25** organisations **active as** practitioners and public buyers, of which **12** are consortium partners and a further **13** collaborate through the **PREVENT User Observatory Group (UOG)**.
- ✓ **PREVENT** builds on the results of other **relevant Research & Innovation projects**
- ✓ **PREVENT** includes an **open mechanism** and **targeted dissemination activities** to enlist **external practitioners and public buyers** to join its activities, and participate to the **preparation steps of a PCP**.



# PREVENT Consortium

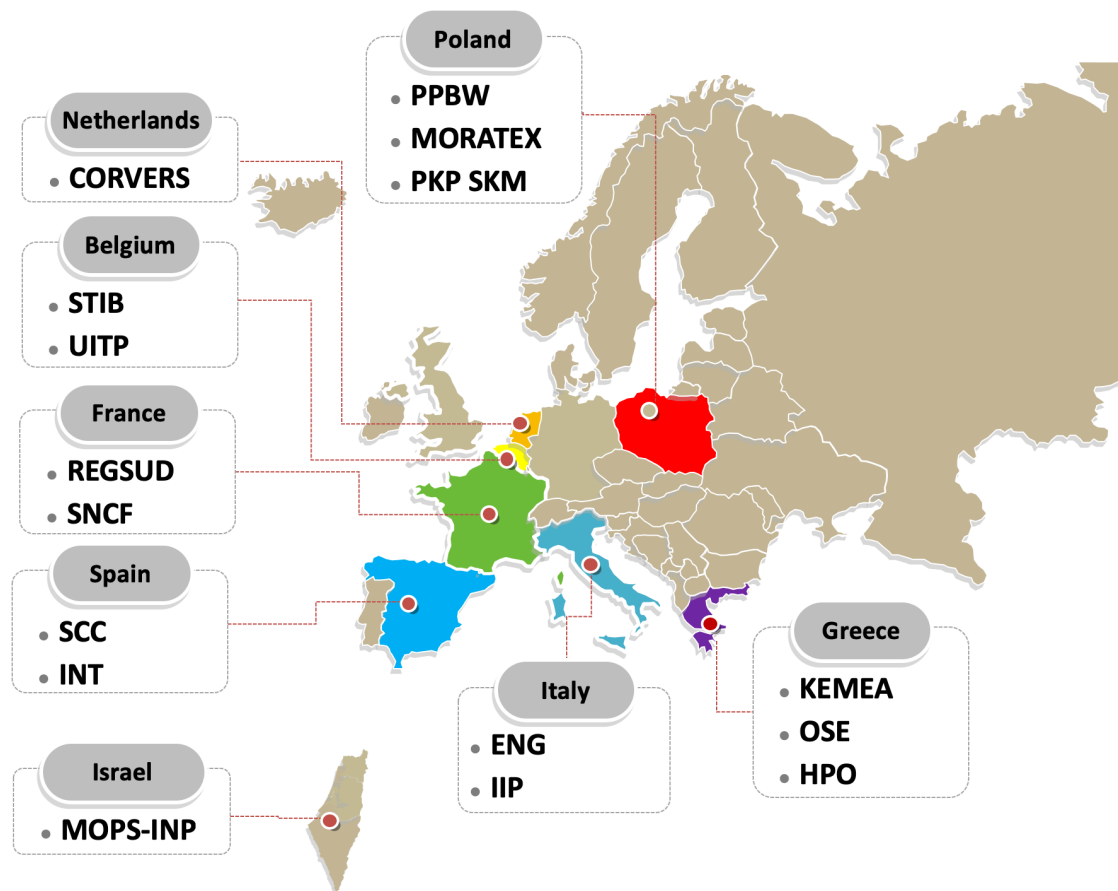
PREVENT Consortium:

16 Partners

8 Countries

9 Practitioners

5 Public Buyers







## User Observatory Group Structure

13 organisations from 7 countries  
(Austria, France, Italy, Poland, Portugal, the Netherlands and Switzerland)

### 8 public transport organisations:



ZTM Warsaw



Lisbon Metro



Autonomous  
Parisian  
Transportation  
Administration



Arriva Netherlands



Vienna Lines



Azienda Transporti  
Milanesi



Metro in Porto



Public Transport  
of Geneva





## User Observatory Group Structure

13 organisations from 7 countries  
(Austria, France, Italy, Poland, Portugal, the Netherlands and Switzerland)

### 2 security services/LEA:

### 2 authorities:

### 1 infrastructure management:



**Milano  
Carabinieri**



**Ministère de la  
Transition  
Ecologique**

**ProRail**



**Łódź Police  
Regional  
Headquarters**



**Ecole Nationale  
Superieur De La  
Police**



## What we do?



1. Analyse the existing processes and practices in public transport infrastructures (existing technologies, Legal, regulation, processes, etc.)
2. Analyse and assess the **threats** and the **vulnerabilities**
3. Build **security scenarios** through use cases highlighting the gaps between the existing and what would be needed
4. Analyse the **technologies** in order to address the process and solutions gaps
5. Analyse the data protection, legal and economic aspects of the technologies
6. Determine the overall need and prioritise it, to prepare one **Pre-Commercial Procurement**



## Project outcomes



- A common ***security diagnostics and vulnerability*** taxonomy
- A ***scenarios elaboration*** methodology
- A set of **6 use cases** consolidating the key security challenges in public transport, and integrating the GDPR and economic capabilities dimensions
- A ***roadmap of innovation needs*** to address these key challenges, integrating the gaps with respect to available solutions
- A fully detailed and agreed **Common Challenge** focused on the highest prioritised need from the roadmap
- To ***initiate a PCP***, speeding up its implementation through a follow-up activity beyond the end of PREVENT



# Cartography of vulnerabilities and threats scenarios

## POTENTIAL THREATS

### ABANDONED OBJECTS

- A suspect object / an abandoned object / left behind object
- Bag, box, package ...
- Without owner and abandoned in a public place (train station for example)
- Suspected to contain an IED.

### INTRUSION

- The intrusion is the fact for a person or an object to penetrate, in a defined space (physical, logical or relational) where its presence is not desired.



### INTERNAL THREATS

- Intentional action or error from employees and internal people who have access to the company's assets


### SUSPICIOUS ACTIVITIES

- All activity that comes out of the normal
  - An unusual situation or element: parked vehicle, abandoned luggage, open door ...
  - Obtain information: questions asked by a person on specific points that go beyond curiosity;
  - Recognition operation: loitering, observation with video camera ...




# Cartography of vulnerabilities and threats scenarios


## REAL THREATS




**ACTIVE SHOOTER**  
Perpetrator of a mass murder defined by the shooting of several people in a short period randomly or systematically.




**BOMB ATTACK**  
A bomb attack occurs when an explosive charge is placed with the intention of killing people or destroying property.




**KNIFE ATTACK**  
Violent physical assault, during which at least one person is armed with a knife or a non-firearm weapon.




**SABOTAGE**  
Act of deteriorating or putting out of use voluntarily an equipment.




**HIJACKING**  
Taking control of a vehicle by one or more persons.



**HOSTAGE TAKING**  
Action to detain people against their will, in most cases to demand something in exchange for the hostages.



**CYBERATTACKS**  
Attempted breach of information systems for malicious purposes.

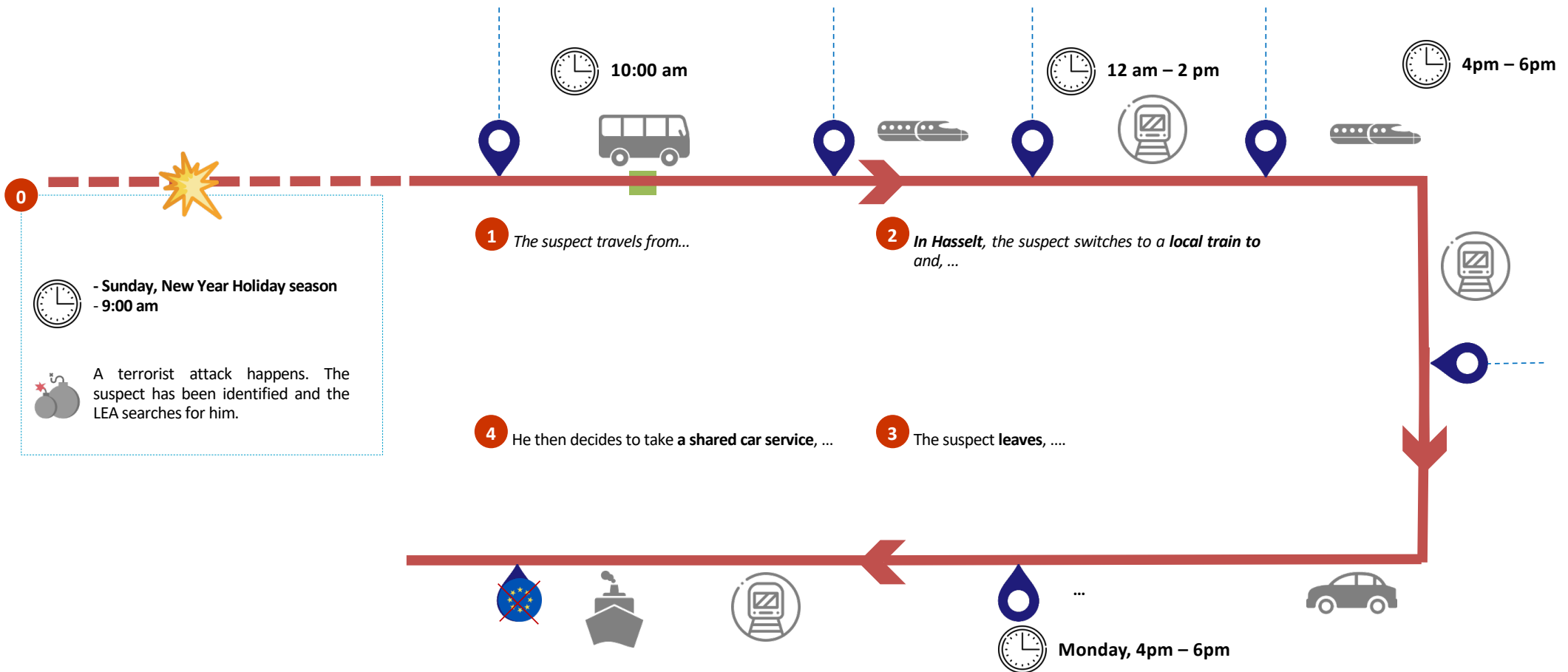


**CBRN**  
A chemical, biological, radiological and nuclear (CBRN) material is a weapon of mass destruction, in the sense that their effects are difficult to control and confine because of their power of dissemination in the environment.

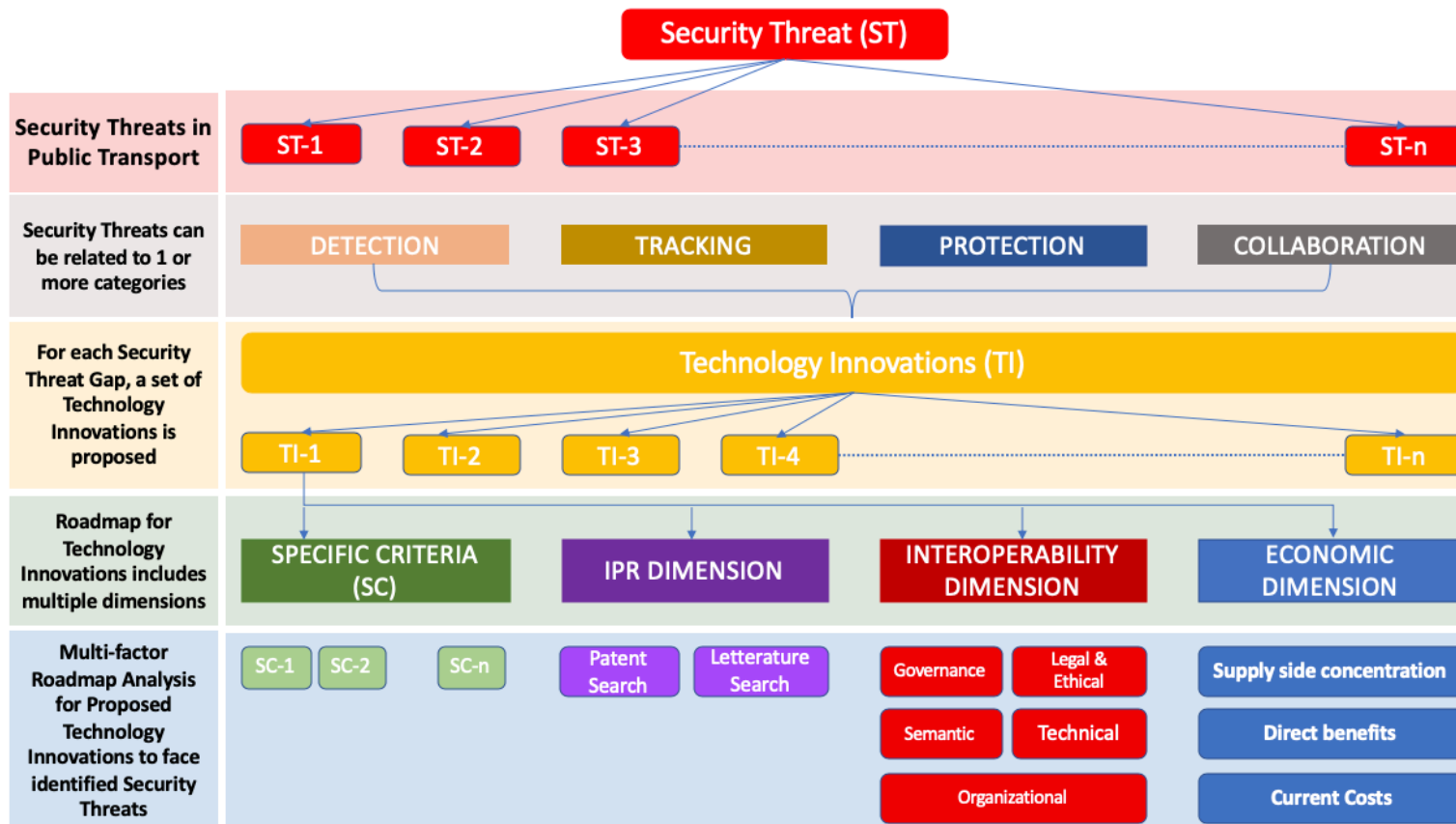


# Results: example of a security scenario:

Story line scenario



# Innovations and solutions roadmap





**SU-GM02-2018-2020: Strategic pre-commercial procurements of innovative, advanced systems to support security<sup>45</sup>**

Specific Challenge: Innovative solutions are needed when resources from different countries are required to work more closely together. Such solutions should support the development of the EU's Security Union.



PREVENT PCP



# PREVENT PCP → Common Challenge

Enhanced security situational awareness through:

- i) timely automatic detection of potentially dangerous unattended items in Public Transport Infrastructure and, in public areas in the vicinity;
- ii) identification and tracking of perpetrators, and
- iii) advanced crisis management system.





## PREVENT PCP

Public buyer	Location/Country
FERROVIE NORD	Italy
AMT GENOVA	Italy
Public Transport Barcellona - FGC	Spain
Seville City Council - SCC	Spain
Metro of Barcellona - TMB	Spain
Transport Operator Seville - TUSSAM	Spain
French Railway Operator - SNCF	France
Metro of Paris - RATP	France
Provence-Alpes-Côte d'Azur - Région Sud	France
Center for Security Studies - KEMEA	Greece
Urban Rail Transport SA - STASY	Greece
Lisbon Metro	Portugal
ProRail - National railway network infrastructure	Netherlands
<b>Total</b>	<b>13</b>

**KPI: at least 3 PB from 2 different countries**



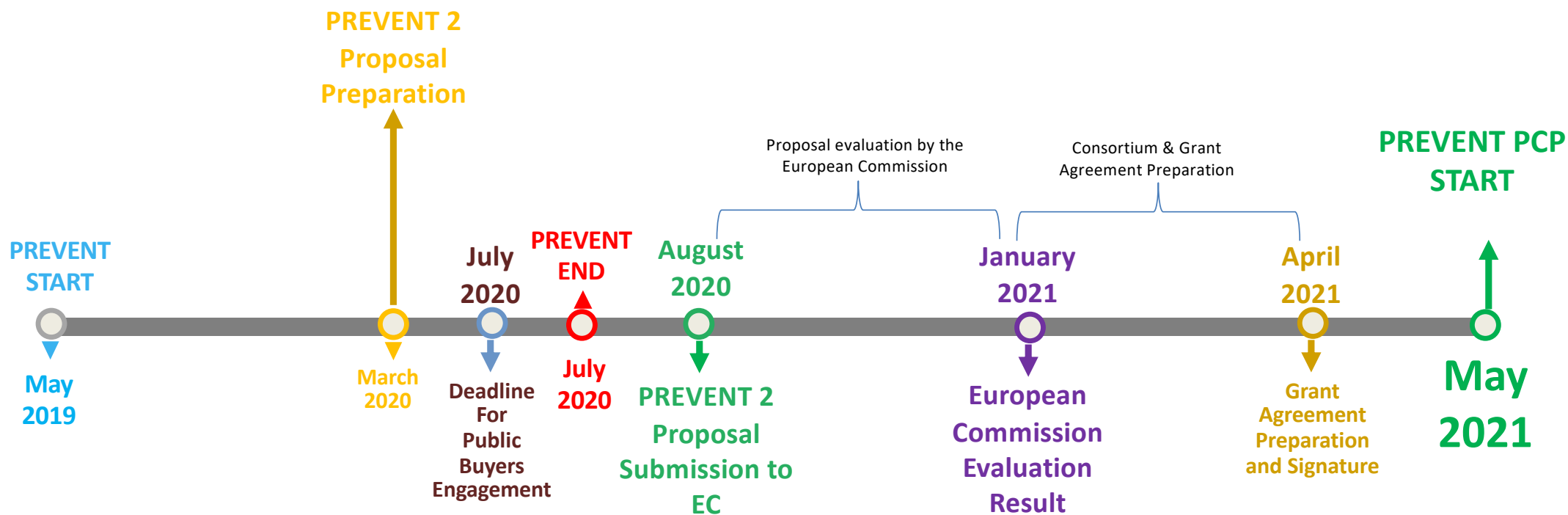
**12 Public Buyers from 6 different countries**

### List of User Observatory Group members (UOG)

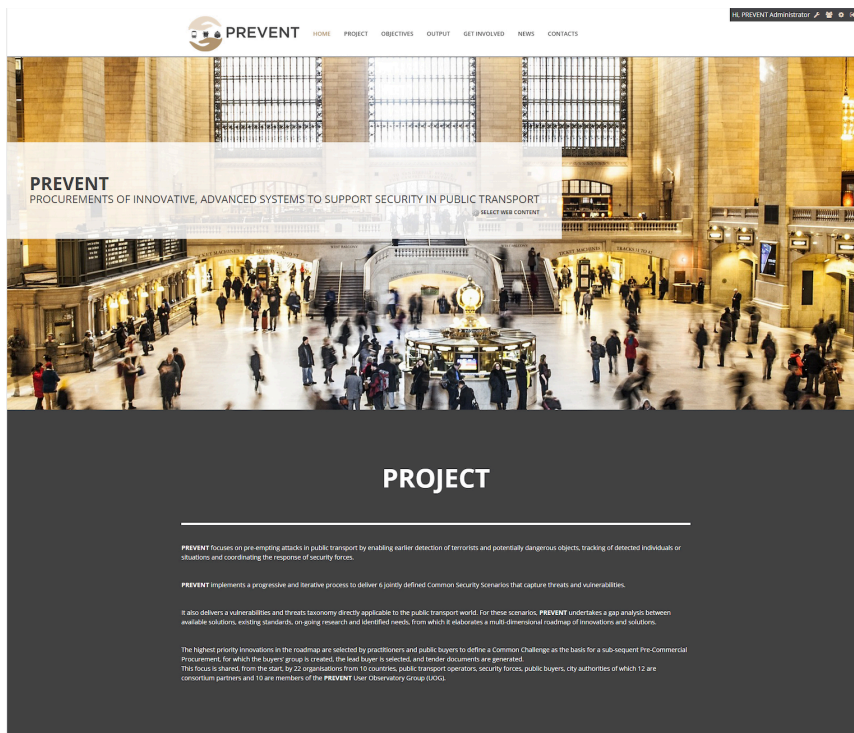
- ARRIVA;
- Wiener Linien;
- ATAC (Transport Company of the Municipality of Rome);
- FNM Group (Ferrovie Nord Milano);
- UIC (International Union of Railways);
- Lodz Police, Ireland Police;
- ZTM (Public transport in Warsaw);
- CARRIS (Lisbon Tramways Company);
- Metro de Madrid;
- VGF Franckfurt;
- NS (Nederlandse Spoorwegen railway operator in the Netherlands);
- Polish Internal Security Agency - Terrorism Prevention Centre of Excellence
- Metro de Bilbao



## Beyond PREVENT



# PREVENT dissemination & outreach

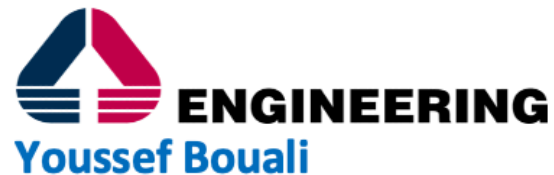


<https://prevent.eng.it>

[twitter.com/PreventH2020](https://twitter.com/PreventH2020)




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