7SHIELD

# INFODAY

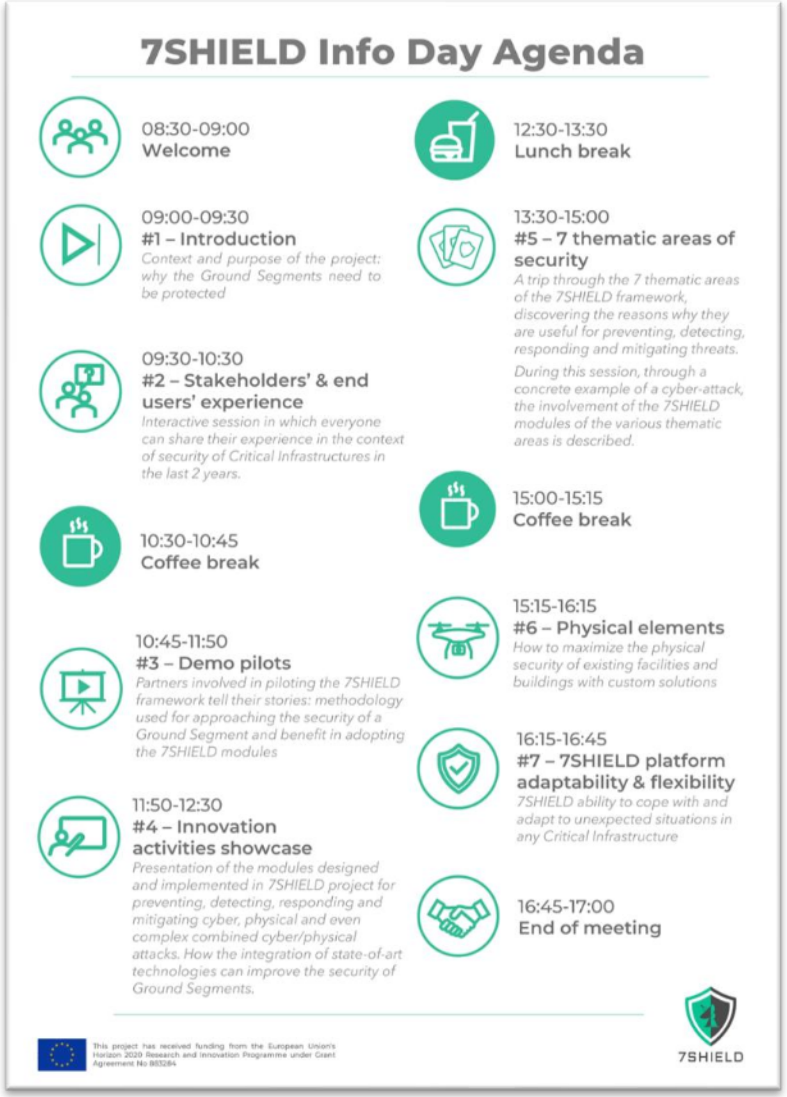
14 December 2022

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 883284

Organized by serco

# Objectives

Share how the 7SHIELD framework can protect the Satellite Ground Segments and inform about its flexibility and adaptability in different situation and contexts



## 7SHIELD Info Day Agenda

08:30-09:00
**Welcome**

09:00-09:30
**#1 – Introduction**
*Context and purpose of the project: why the Ground Segments need to be protected*

09:30-10:30
**#2 – Stakeholders' & end users' experience**
*Interactive session in which everyone can share their experience in the context of security of Critical Infrastructures in the last 2 years.*

10:30-10:45
**Coffee break**

10:45-11:50
**#3 – Demo pilots**
*Partners involved in piloting the 7SHIELD framework tell their stories: methodology used for approaching the security of a Ground Segment and benefit in adopting the 7SHIELD modules*

11:50-12:30
**#4 – Innovation activities showcase**
*Presentation of the modules designed and implemented in 7SHIELD project for preventing, detecting, responding and mitigating cyber, physical and even complex combined cyber/physical attacks. How the integration of state-of-art technologies can improve the security of Ground Segments.*

12:30-13:30
**Lunch break**

13:30-15:00
**#5 – 7 thematic areas of security**
*A trip through the 7 thematic areas of the 7SHIELD framework, discovering the reasons why they are useful for preventing, detecting, responding and mitigating threats.*

*During this session, through a concrete example of a cyber-attack, the involvement of the 7SHIELD modules of the various thematic areas is described.*

15:00-15:15
**Coffee break**

15:15-16:15
**#6 – Physical elements**
*How to maximize the physical security of existing facilities and buildings with custom solutions*

16:15-16:45
**#7 – 7SHIELD platform adaptability & flexibility**
*7SHIELD ability to cope with and adapt to unexpected situations in any Critical Infrastructure*

16:45-17:00
**End of meeting**

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https://www.7shield.eu/7shield-info-day/

# Outcomes

Knowledge of the key results of the 7SHIELD project

Information about the 7SHIELD applicability in the context of the security of Space Ground Segments

# Hybrid conference – Instructions

## Remote Participation

- There are several interactive sessions but, in case of questions, please use the “hand” button on the Microsoft Teams to raise your hand and talk when we will ask you to do it or use the chat for writing your answer

## Physical Participation

- There are several interactive sessions but, in case of questions, please raise your hand and talk when you get a microphone
- Write a post-it and put it on the flipchart on the bottom of the room

Note: the meeting will be registered, pictures will be taken and will be used for LinkedIn posts

# Live questionnaires

Use your smartphone to access to a set of questions

- Scan the QR code
- Go to the indicated website and include the code provided
- (no need to download any app or register to any site)

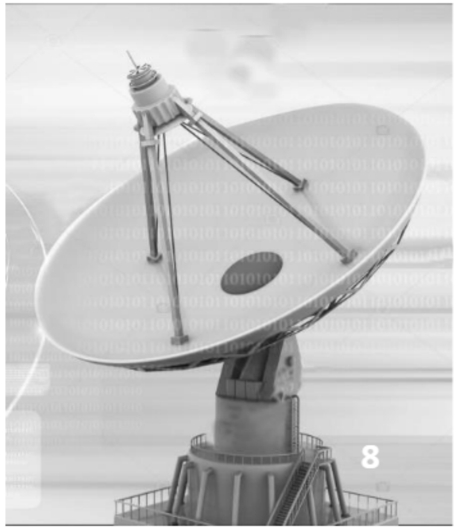
**Wi-fi connection provided by the hotel**

# #5 – 7 thematic areas of security

*A trip through the 7 thematic areas of the 7SHIELD framework, discovering the reasons why they are useful for preventing, detecting, responding and mitigating threats. During this session, through a concrete example of a cyber-attack, the involvement of the 7SHIELD modules of the various thematic areas is described.*

Adriana Grazia Castriotta (SERCO)

Project manager



# Working groups done

7 groups found the "reasons why" the thematic area of 7SHIELD are useful in a security framework

Decision Support Systems

KR02 - Secure Authentication Mechanism
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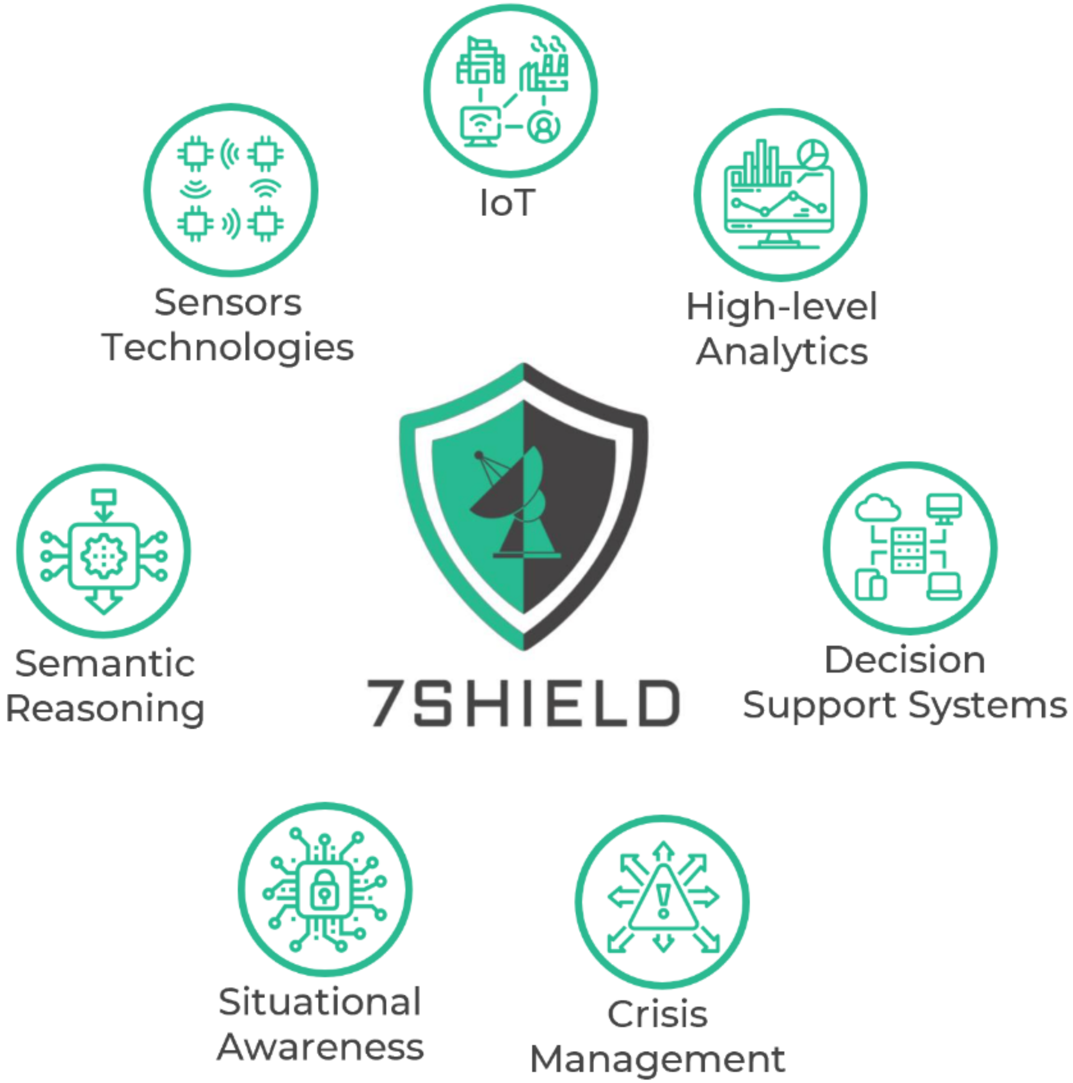
7SHIELD



IoT

Sensors Technologies

High-level Analytics

Semantic Reasoning

7SHIELD

Decision Support Systems

Situational Awareness

Crisis Management

# Sensors Technologies

A sensor is a device, module, machine, or subsystem that detects events or changes in its environment and sends the information to other electronics, frequently a computer processor.
Sensors are always used with other electronics.

# SENSORS TECHNOLOGIES

Sensors Technologies

1. KR05 Data Collection and Edge Processing Module
2. KR06 Face detection and face recognition module
3. KR07 Object Detection at the Edge (ODE), Video-Based Object Detection (VOD) Module, Activity Recognition (AR) Module
4. KR08 Cyber-Attack Detection Framework
5. KR09 Multi-Modal Automated Surveillance (MMAS)
6. KR10 Perimeter Laser Sensor V3.0 (PLS), Laser Fence Sensor V3.0 (LFS), 3-Dimensional Mini Drone Detector V3.0 (3D MND)
7. KR11 Availability Detection Monitoring (ADM), Radio- Frequency Interference Detection and Identification (RFIDI),
8. KR14 First Responders’ Support System (FRSS)

IoT

The Internet of things (IoT) describes physical objects (or groups of such objects) with sensors, processing ability, software, and other technologies that connect and exchange data with other devices and systems over the Internet or other communications networks

# IOT

IoT

1. KR04 Cyber and Physical Threat Intelligence (CPTI) Module, CTI Detection (CTID)
2. KR05 Data Collection and Edge Processing Module
3. KR14 First Responders’ Support System (FRSS)

Physical sensors are the source of the processing chain

# Semantic Reasoning

Semantic reasoning is the ability of a system to infer new facts from existing data based on inference rules or ontologies. In simple terms, rules add new information to the existing dataset, adding context, knowledge, and valuable insights.

# SEMANTIC REASONING

Semantic Reasoning

1. KR11 Geospatial Complex Event Processing Engine (G-CEP), Hyper Combined Correlator (HCC), Availability Correlator (AC), Situational Picture Generation and Update (SPGU)
2. KR12 7SHIELD Knowledge Base

## High-level Analytics

High-level analytics can provide an advanced level of data-driven decision making, informing decision makers about different choices with their anticipated impact on specific key performance indicators.

In many cases expert-driven techniques are also integrated, offering domain knowledge. They should quickly guide the user to areas where there might be opportunities to improve a process, a state or resilience in general.

# HIGH LEVEL ANALYTICS

High-level
Analytics

1. KR01 Critical Infrastructure Resilience Platform (CIRP-RAT), Digital Vulnerability Assessment (DiVA)
2. KR13 Crisis Classification (CRCL) Module

## Decision Support Systems

A decision support system is an information system that supports business or organizational decision-making activities. Decision support systems serve the management, operations and planning levels of an organization (usually mid and higher management) and help people make decisions about problems that may be rapidly changing and not easily specified in advance—i.e. unstructured and semi-structured decision problems.

# DECISION SUPPORT SYSTEM

Decision Support Systems

1. KR02 Secure Authentication Mechanism
2. KR20 ENGAGE CSIM, Cyber and Physical Threat Monitoring Dashboard (CPTMD)

# Crisis Management

Crisis management is the process by which an organization deals with a disruptive and unexpected event that threatens to harm the organization or its stakeholders.

# CRISIS MANAGEMENT

Crisis Management

1. KR14 First Responders' Support System (FRSS)
2. KR15 Warning Message Generation (WMG)
3. KR16 Flying Hunter V3.0 (FH)
4. KR17 Emergency Response Plan (ERP), Service continuity Module (SCM)
5. KR20 ENGAGE CSIM, Cyber and Physical Threat Monitoring Dashboard (CPTMD)

Situational
Awareness

Situational awareness or situation awareness (SA) is the perception of environmental elements and events with respect to time or space, the comprehension of their meaning, and the projection of their future status.
An alternative definition is that situation awareness is adaptive, externally-directed consciousness that has as its products knowledge about a dynamic task environment and directed action within that environment.

# SITUATIONAL AWARENESS

Situational Awareness

1. KR03 Model Based Design and Assessment (MBDA) Module
2. KR08 Cyber-attack Correlator
3. KR11 Geospatial Complex Event Processing Engine (G-CEP), Hyper Combined Correlator (HCC), Availability Correlator (AC), Situational Picture Generation and Update (SPGU),
4. KR13 Crisis Classification (CRCL) Module
5. KR20 ENGAGE CSIM, Cyber and Physical Threat Monitoring Dashboard (CPTMD)

# Video presenting how 7SHIELD acts against a cyber attack scenario: brute force attack