SP3 PRESENTATION FOR THE KICK-OFF
AGENDA FOR SP3

• Scope
• Objectives
• Partners presentation
• Status of D.O.W.
• Deliverables
• Planning / milestones / dependencies / risks
• Summary of the threats and technologies addressed within SP3
• The scope of SP3 is to demonstrate the feasibility of solving the identified railway protection sub-missions.
  – These sub-missions will focus on key fixed assets
  – Key fixed assets are: Stations and buildings; Structures; Tracks; Signaling, interlocking, command & control, power distribution; Communications and information systems; Rolling stock clearance; Staff clearance

• Recommendations
  – Each sub-mission has to iterate from Prioritised Stakeholders Requirements (WP2.3), Attack Scenarios (WP2.3), Specifications (WP2.4&5), General Architecture (WP5.1) and Sub-Missions
OBJECTIVES FOR EACH SUB-MISSION

- **Objectives**
  - **For each sub-mission (WP3.x):**
    - Selection of the appropriate protection (technologies) devices suite
    - Definition of the specific ICT architecture requirements to allow a proper information flow within the integrated sub-system
    - Definition, design and implementation of the data processing and fusion mechanisms
    - Design and set-up of control posts for crisis managements
    - All design must grant interoperability to allow SP5

- **Outputs**
  - **Sub-Mission related Architecture**
  - **A set of in-laboratory proof-of-concept performance demonstrators able to demonstrate the feasibility of the protection sub-missions**
    - Sub-systems technical and interface specs
    - Interoperability of different solutions
Sub-Mission **Station and Building Control (WP3.1)**

- Monitoring and control of the railway station assets, particularly buildings and the public sites within the precinct (railway tracks, passenger premises, short-term and long-term parking areas, office building, taxi and bus stations etc).

- Technologies
  - **Intrusion Detection**
    - (radar, infra-red, fence sensors, motion detection)
  - **CCTV**
  - **Fire Detection**

- **Participants:**
  - **ED** - 22 MM
  - **TNO** - 10 MM
  - **BT** - 1 MM
  - **ALS** - 4 MM
  - **T3S** - 15 MM
Sub-Mission **Structures Control (WP3.2)**

- Monitoring and control of in particular tunnels, bridges, embankments and railway yards that have been defined as one of the security risk areas within the railway system.

- Technologies to address:
  - Intelligence (situational awareness)
  - Detection and Neutralization
  - Mitigation and Protection

- **Participants:**
  - *TNO* - 17 MM
  - *BT* - 1 MM
  - *ALS* - 3 MM
  - *ESL* - 25 MM
Sub-Mission **Tracks Clearance (WP3.3)**

- Monitoring and control of track clearance both by direct detection of the track status and by means of strict continuous surveillance of the railway line accesses
- **Technologies**
  - Video-inspection of ballast
  - Dimensional measurement of the ballast (laser ranging techniques)
  - Gamma detection of explosive on or under ballast.
  - CCTV services
  - Array of cameras from the visible region all the way to Far IR
  - Active imaging technology (laser illumination)
  - Acoustic and radar sensors

- **Participants:**
  - **EPPRA** - 17 MM
  - **BT** - 2 MM
  - **ALS** - 4 MM
  - **T3S** - 17 MM
  - **ESL** - 16 MM
  - **KU** - 8 MM
  - **MERMEC**-12 MM
Sub-Mission **Signalling and Power Distribution (WP3.4)**

- **Protection of signalling and power distribution systems through monitoring technologies, track-side physical security and ICT protection of computer-based signalling devices and power distribution SCADA**

- **Technologies**
  - Monitoring technologies, (signalling and power distribution systems);
  - Track-side physical security;
  - ICT protection of computer-based signalling systems.

- **Participants:**
  - **ASTS** - 36 MM
  - **ED** - 6 MM
  - **BT** - 1 MM
  - **ALS** - 3 MM
Sub-Mission **Communication and Information Systems (WP3.5)**

- **Integrated secured communication and information systems**
- **Technologies:**
  - Bandwidth monitoring
  - QoS monitoring
  - Emerging technologies
- **Participants:**
  - T3S - 35 MM
  - ED - 18 MM
  - BT - 2 MM
  - ALS - 4 MM
Sub-Mission **Rolling Stocks Clearance (WP3.6)**

- Monitoring and control of Rolling Stocks Clearance before and after service
- Technologies:
  - Access Control
  - Video Analytics
  - Audio Detection
  - Gantries (to be evaluated)
  - Integration of on-board systems (TCMS)

- Participants:
  - **ALS** - 17 MM
  - **T3S** - 12 MM
  - **MERMEC** - 8 MM
Sub-Mission **Staff clearance and access right management (WP3.7)**

- Monitoring and control of staff clearance and access rights management covering the driver cabin, the supervision of the driver during a journey, the logical access control to the information systems and to any sensitive building
- Technologies:
  - Token with credential (like smart cards),
  - Biometrics (like facial recognition),
  - Fingerprint recognition
- **Participants:**
  - **SAG** - 22 MM
  - **ED** - 8 MM
  - **BT** - 3 MM
  - **ALS** - 3 MM
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STATUS/CHANGE WRT. D.O.W.

• No main change to be envisaged for the D.O.W.

• Improvements will be on technologies to better match with state of the art
  • Audio to complement video
  • Track video inspection techniques improved with dimensional measurement
  • Communication network technologies will be reviewed either for wired or wireless systems.
## DELIVERABLES

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<tr>
<th>WP</th>
<th>Title</th>
<th>Architecture</th>
<th>In Lab Demo</th>
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<td>Staff clearance and access rights management</td>
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# PLANNING

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<td>Prioritised requirements (WP2.7) M4</td>
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<td>Receipt of technical and functional specifications from SP2 (WP2.4, WP2.5) M6</td>
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<td>Delivery of architectures for each WP M8</td>
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<td>Integration (SP5) M23</td>
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DEPENDENCIES

WP2.4 Security Functional Specifications

WP2.5 Security Technical Specifications

WP2.7 Stakeholders Advisory and validation Group

SP3

Constraints

In-Lab prototypes

General Architecture

WP5

Project Kick-Off
## SUMMARY OF THE THREATS AND TECHNOLOGIES WITHIN SP3

<table>
<thead>
<tr>
<th>Threats (terrorist, accident, natural disaster)</th>
<th>Technologies</th>
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<tbody>
<tr>
<td>Explosion</td>
<td>Monitoring and control including detection of behaviour</td>
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<td>Fire</td>
<td>Physical protection measures</td>
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<td>Release of hazardous material</td>
<td>Software models for simulation and exercising</td>
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<tr>
<td>Collapse of infrastructure</td>
<td>Detection techniques</td>
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<tr>
<td>Collision</td>
<td>ICT systems including protection measures</td>
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<td>Shooting</td>
<td>Access / entrance control</td>
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<tr>
<td>Sabotage</td>
<td>Decontamination technologies</td>
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<tr>
<td>Violence (kidnapping, hi-jacking)</td>
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<td>Disruption in service systems</td>
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<tr>
<td>Cyber crime</td>
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Thank you!