

NEXTSTATION

MARRAKECH 2015

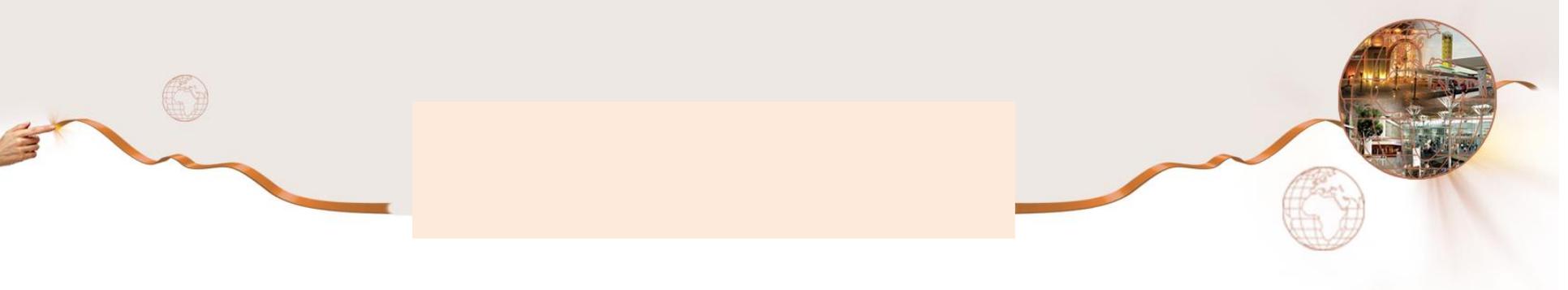


5TH INTERNATIONAL CONFERENCE ON RAILWAY STATIONS



Palmeraie Palace

Marrakech, 21-22 october 2015



The New Challenges of Security In Railway Stations

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- 1-B – Comprehensive protection



Outline

- ❑ The EU CARONTE project in brief
- ❑ Railway stations security vulnerabilities & issues
- ❑ Attack tactics and threats directed at stations
- ❑ Key challenges of security in railway stations





The EU CARONTE project in brief



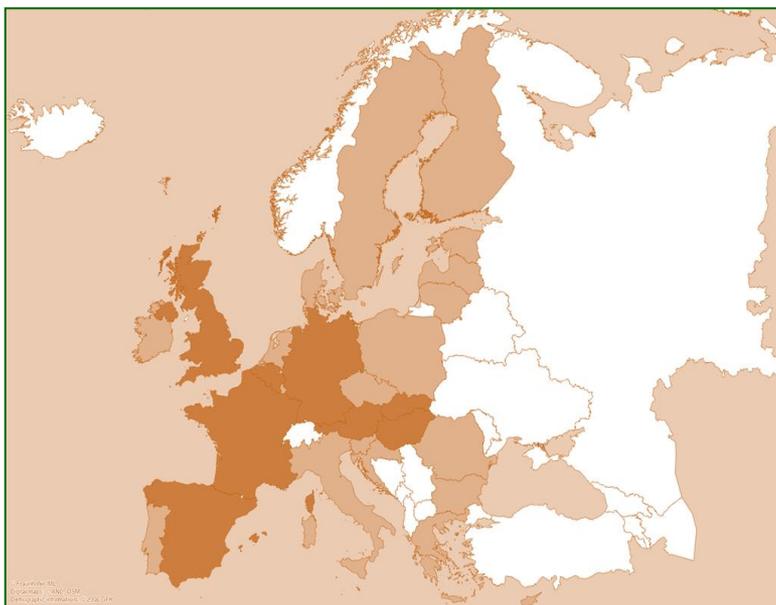
Creating an Agenda for Research On Transportation sEcurity

- CARONTE is a FP7 project but contributes to H2020
 - H2020 reinforces support to EUs security policies
 - EU Internal Security Strategy
 - Improving competitiveness of EU industries to address security gaps and prevent threats (incl. cyber-threats)
- Duration: September 2014 to February 2016





The EU CARONTE project in brief



11 Partners covering 8 Member States from North to South and from West to East and all transport modes



University of Security Management in Košice(USMKE)





Railway stations security vulnerabilities & Issues

- Open architecture
 - Dense urban landscapes that may offer multiple attack points and easy escape
 - Diverse outdoor and indoor facilities, accessible at all hours
- Passenger density
 - The logistics of a passenger rail attack are comparatively simple
 - The measures used to secure airports are likely to be impractical with rail stations
- The assumption of “security by obscurity” no longer valid or acceptable
 - Many safety critical control systems/equipment rooms, which are computer-based, have access via train stations





Attack tactics and threats directed at stations

- Common attack tactics

More than 30% of attacks against the railway system concern Stations

- **Bombing / Sabotage**

- Statistically the preferred and the more common ways to carry out attacks
- Difficulty to detect potentially dangerous individuals and explosive material

- **Armed attack**

- Brought back into the limelight following the **Thalys attack** (access from Brussels station)
- Great density of travelers
- Different security practices in place between countries stations (international trains)



Picture: AP Photo/Francois Walschaerts



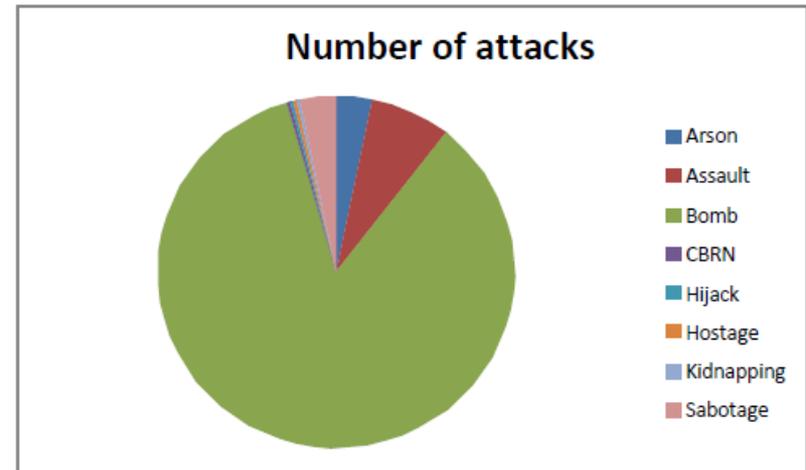
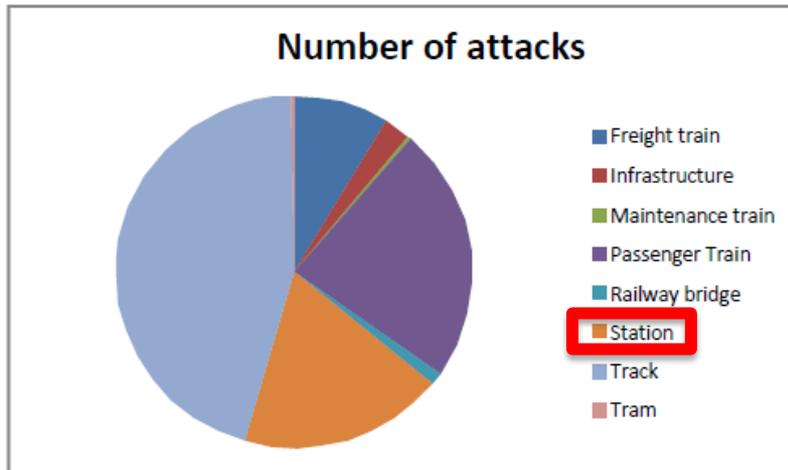


Attack tactics and threats directed at stations

Attacks directed at railway stations

- Madrid bombings of 11th March 2004
- London bombings of 7th July 2005
- Poland cyber-attack of January 2008

The attacker trespassed in tram depots to gather information needed to build the device



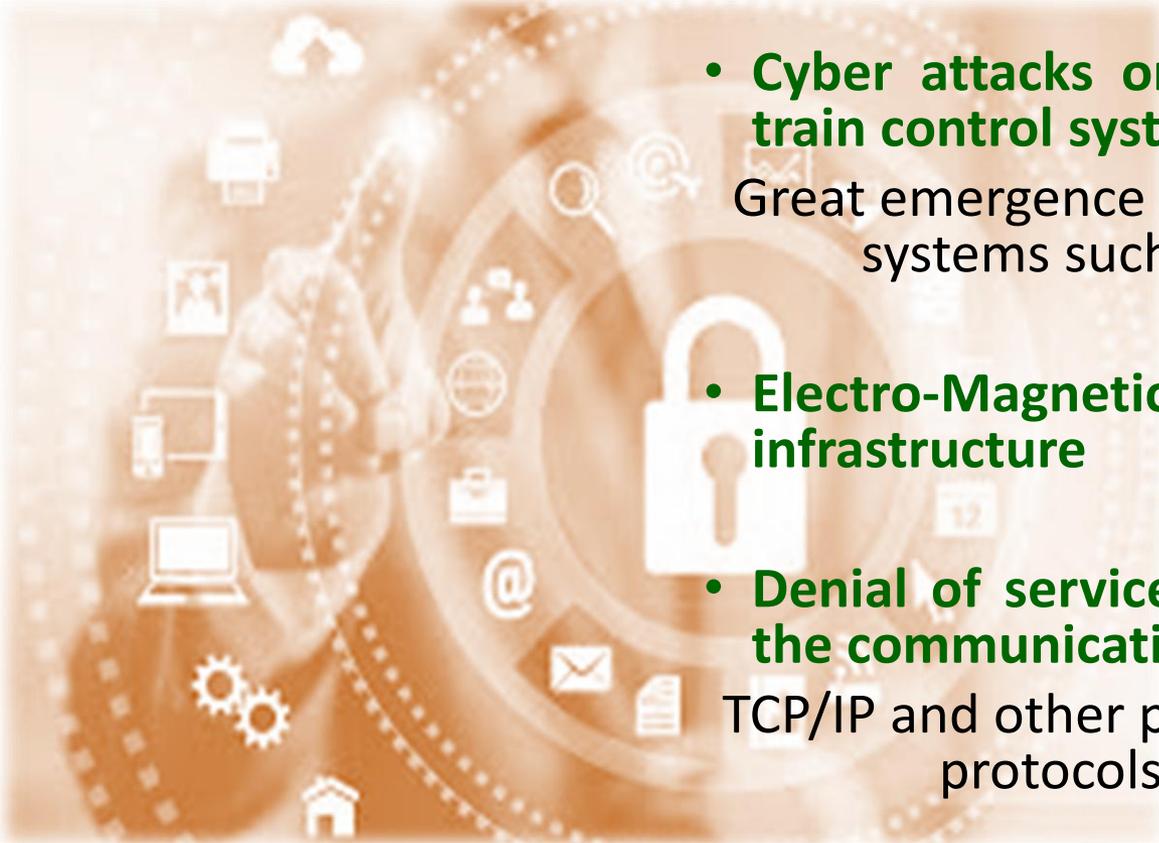
Source : SECURESTATION EU Project





Attack tactics and threats directed at stations

- Emerging cyber threats
- **Cyber attacks on on-board and track-side train control systems**
Great emergence of computer based control systems such as ERTMS, CBTC, CBI...
- **Electro-Magnetic attacks on the rail infrastructure**
- **Denial of service attacks by compromising the communication networks**
TCP/IP and other published industry standard protocols (often not secured)





Key challenges of security in railway stations

- Design security solutions as resilient as possible to any possible scenario

Not according to existing or imaginable scenarios (since they keep evolving)

- Find mitigation solutions with acceptable costs, delays and need of resources
- Motivate and convince politicians about the value of transport security

The vital importance of stations in business activity depends on their attractiveness

- Find a balance between safety and security (a security measure shouldn't compromise safety): Integrate Safety and Security by design
- Think of immediate measures to take after the detection of threat (detection of a kamikaze or an armed person)





Key challenges of security in railway stations

- Define an organization approach to human and technology at a local level for crisis management
- Add cybersecurity awareness and cyber defense measures to the transport operators culture
- Reduce the growing cyber risks led by technology advance
 - Communication based train control / Automatic train supervision,
 - European standards: ERTMS/ETCS,
 - Migration to a computer based safety: CBI, ATC/ATP
- Consider security as a business issue, and not only as a technical issue
- Re-think Risk assessment methodologies (I.e. include motivation ...)



**When these challenges are successfully met,
it gives employees and passengers
confidence in the security of railway stations
and the global rail system**

MERCI



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