COMPREHENSIVE For the High Speed Rail System



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about Security in High Speed Rail

Five

Key Ideas



#1. Safety & Security are like twins: different, but close to each other





- No malicious intent
- Technical / human failure / hazards
- Accident
- Risk assessment (probability)
- Predictable
- Safety Management System
- Treatment
- Culture

- Malicious intent
- Threats
- Attack
- Threat assessment
- Unpredictable
- Security approach
- Protection
- Culture



Risks and threats for railways...





Pickpocketing Begging Property Damage

Power Blackout

Migration

Labor Dispute

Mass Events

Violence

Border control

















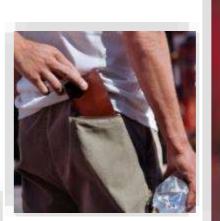
Pandemic Harassment Extreme Weather **Freight Theft** Derailment Cyber Attacks Media Reports Terrorism Graffiti Metal Theft Suicide Trespassing

Sabotage

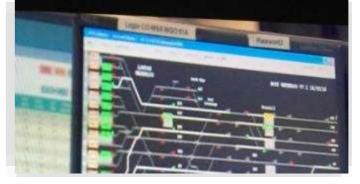
Accidents

Ticket Fraud

CBRN incidents











Concept of comprehensive protection

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monio Morza alerta Vittoria Concetta Praciliola Edit

Railway Infrastructure Security

5 Springs

Towards Integrated Railway Protection

Jacques Colliard

Abstract Since their inception, railways have been built upon the need for transport to be as safe as possible. Although incidents remain a fact of life in railway field due to the volumes carried, the density of traffic and the extent of services offered by railways, rail transport remains one of the safest mode of transport. However, another threat is jeopardizing the railway sector: crime and terrorist. Over the past 10-20 years, security issues have increasingly come to the fore, requiring strong sector action. This chapter presents a briefly overview about the present challenges for security in railway system. It provides a clear picture of the current scenario illustrating the most relevant threats, experiences, best practices and possible counter measurements all matured by the experience of UIC, in about one century of activity in the railway sector.

https://link.springer.com/chapter/10.1007%2F978-3-319-04426-2_2

Integrative approach: safety + security + natural hazards

Open system" security model: fluid transport and security by design

Integrating all devices and actors in the security chain: interdependence and interactions across several security layers







#2. Risks & threats have a higher impact in HS compared to conventional rail

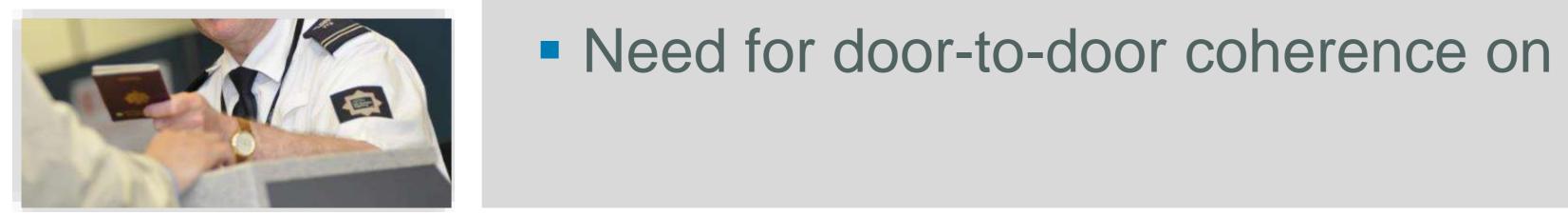


Security challenges within the High Speed Rail system









- Worse consequences because of the high-speed
- Attractive target for terrorist attacks: iconic aspects
- Protection of important public funding
- Special requirements (e.g. stations)
- Delays are incompatible with HS concept
- Vandalized HS trains are unacceptable
- Need for door-to-door coherence on international trains





The costs of security

Who decides? Who implements? Who pays?

Economic costs

- investment
- deployment + integration of different technological systems
- operation
- maintenance

Social costs

- Ionger door-to-door travel time
- reduced freedom and privacy for citizens
- public perception, acceptability
- internal changes, staff training

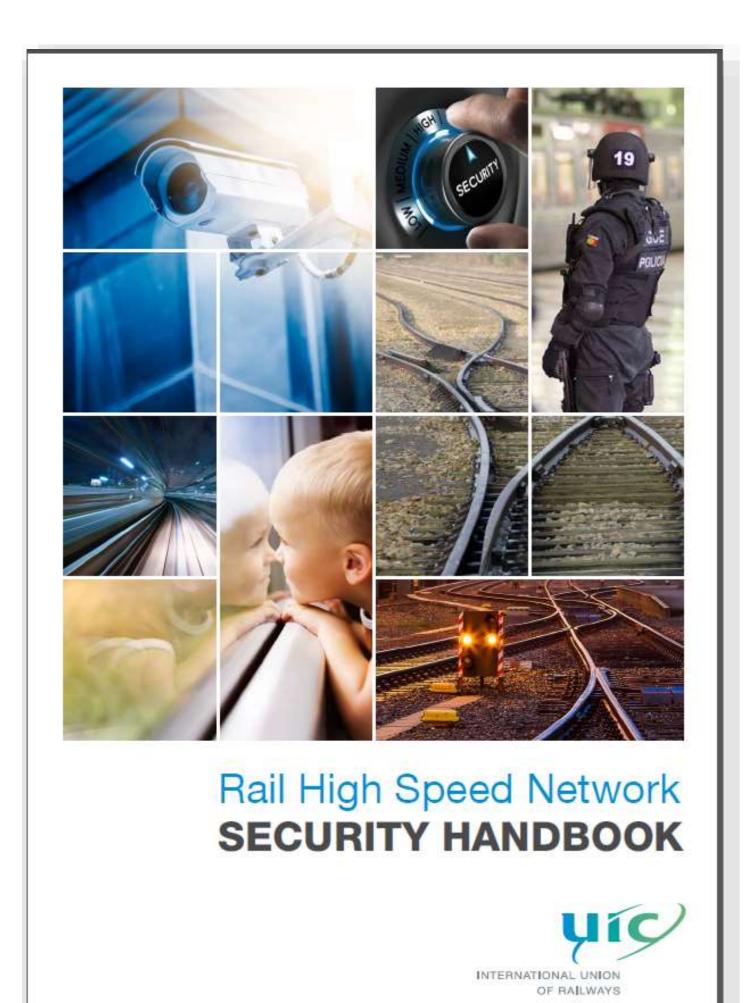
Legislative framework and ethical aspects

- compliance with (inter)national laws
- sensitivity to environmental issues



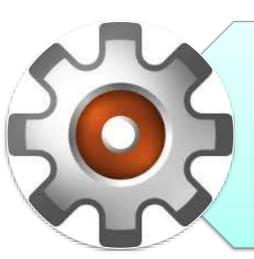


High Speed Rail Security Handbook http://uic.org/IMG/pdf/2015-hs-security_handbook_public.pdf



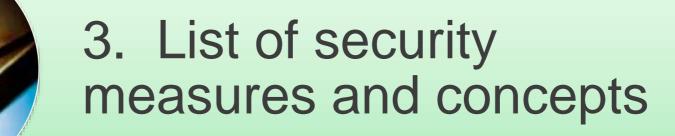


1. Theoretical and practical aspects of HSR security requirements



CONFIDENTIAL

2. Proposal of Railway Security Management System (RSMŠ) concept





#3. Security is: technology, procedures, human factors and design



Example: access control to trains Security levels ranging from an "open model" to a "fortress model"

Open model

Semi-open models



Temporary X-RAY and body scanners (physical security) E.g. Thalys (Paris)



Access gates and automatic turnstiles (digital security) E.g. Italy

No or very limited access control to HS trains

"Fortress"/ airport model



X-RAY scanners (physical security) E.g. Spain



ID control + luggage & body scanners + ticket screening (digital and physical security) E.g. Eurostar







Security by design Large stations & transport hubs

CPTED principles

- Natural Territorial Reinforcement
- Natural Access Control
- Natural Surveillance
- Maintenance
- Activity support









Station Security Handbook https://uic.org/IMG/pdf/station_security_for_station_business.pdf



Station security for station business

HANDBOOK ON EFFECTIVE SOLUTIONS



Technical Measures

- Access control gates
- Body cameras
- CCTV + Video Analytics
- Drones
- Passenger and baggage screening
- Security dog

Institutional, organizational and procedural measures

- Alcohol prohibition
- Interaction with third parties
- Security Operation Centre
- Security concept

Human Factors Measures

- Help applications
- Help points at stations
- Information for passengers about security actions
- Pre-designed signage for evacuation
- Railway staff presence
- Reception desks
- Social Media analysis

Design, construction and ambience

- Calming ambience
- Car barriers
- Transparent materials



#4. Safety & Security are basic needs of passengers



Feeling of security

Abraham Maslow's pyramid of human needs





Esteem needs: prestige and feeling of accomplishment

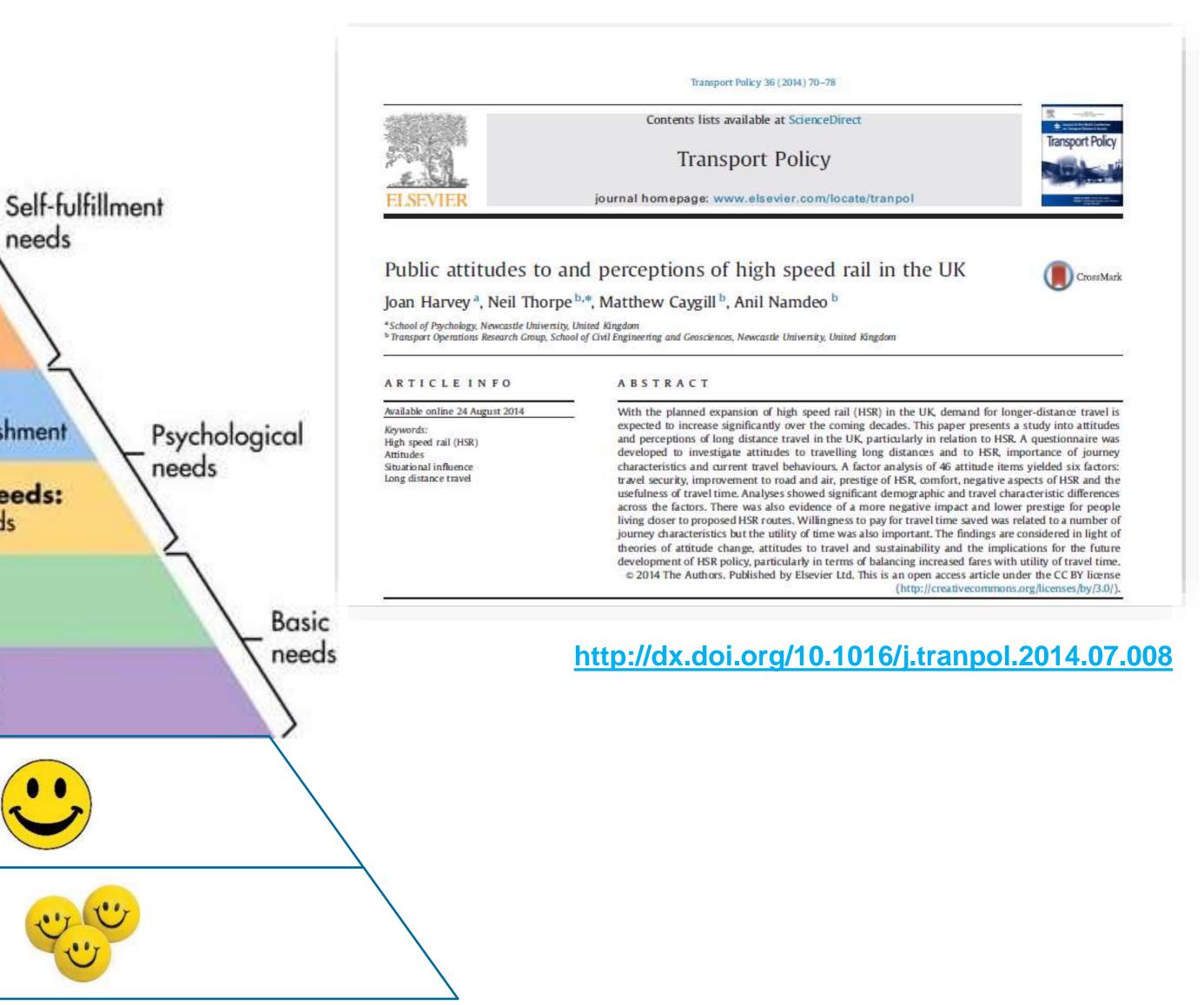
Belongingness and love needs: intimate relationships, friends

> Safety needs: security, safety

Physiological needs: food, water, warmth, rest









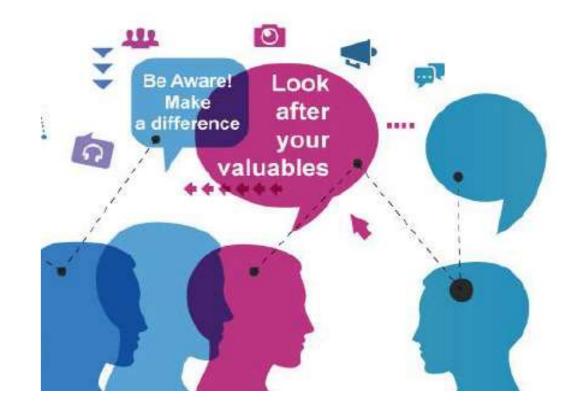
Creating a security culture

- Presence and visibility of railway staff
- Training non-technical security skills among railway staff
- Training railway staff on emerging threats (e.g. CBRN attacks)
- Mass surveillance and its ethical limits
- Profiling criteria and their ethical limits
- Citizens' awareness level and involvement in the security chain

staff kills among









#5. There are similar ways to manage the negative consequences of risks & threats



Cover the whole Crisis Management cycle

Before event	During event	Post event
Preparedness & Prevention	Response	Recovery
 Awareness Risk Management Precautions Authorities Organization, Staff Passengers Measures Training, Exercises Plans Coordination 	 Decision-making based on crisis level Operations (Emergency Management) Security (Crisis Management) Evacuation Communication 	 Resilience (operations, staff, passengers) Business Continuity Management Up / down scaling of measures Debriefing
	Quite similar approaches, independent of the event origin (safety / security)	



Crisis Management Guide http://uic.org/IMG/pdf/crisis_management_report.pdf



Outline

- Introduction and method
- Crisis Management Plan
 - Risk analysis
 - Priorities in CM
 - Structure and Content of the CM plan
 - Alert levels
 - CM team
 - CM infrastructure
 - Crisis communication
 - Training
 - Cooperation
 - Evaluation of the CM plan
- Conclusion and outlook
- Annex with checklists



- 1. Safety & Security are like twins: different, but also close to each other
- 2. Risks & threats have a higher impact in HS compared to conventional rail
- 3. Security is: technology, procedures, human factors and design
- 4. Safety & Security are basic needs of passengers
- 5. There are similar ways to manage the negative consequences of risks & threats







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- Thank you for your kind attention!