
SAFETY AND SECURITY IN LAND TRANSPORTATION

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AGENDA

- Foreword
- The challenges
- Solutions
- Research needs



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Foreword

- Efficient logistics and land transportation is core work of Fraunhofer IML
 - Safety and Security
 - must and can be a result of efficient processes
 - measures should be implemented in the process design
 - depend on level of preparedness and maintenance
- ➔ ***Business is to assure excellent logistics with safety and security***



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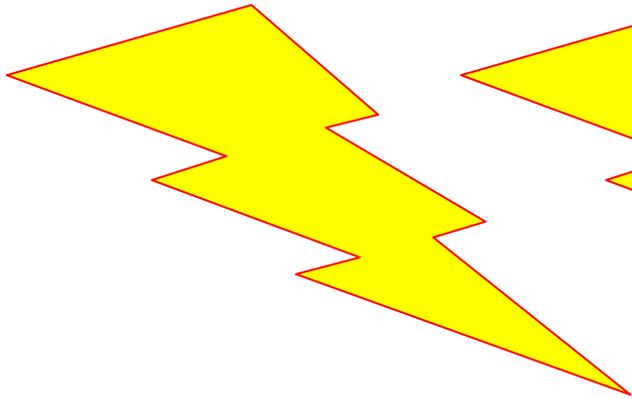


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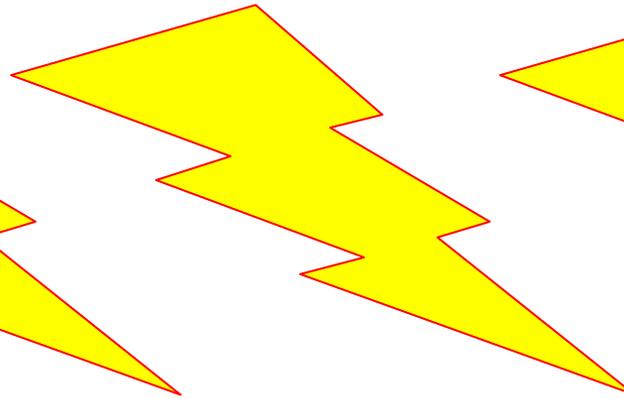
The challenges - Overview

This presentation is about **external challenges** apart from the day to day operative, financial and administrative aspects in logistics

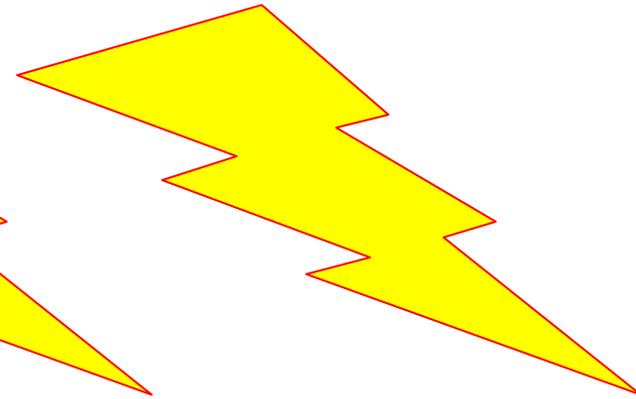
Terrorism



Crime



Extreme weather



The supply chain

The challenges - Classification



Latest news about **crime** in land transport

- TAPA reports in September 2014¹:
 - Importance of metal theft is rising
 - Need of secured parking places for road transport
 - $\frac{3}{4}$ of reported cargo thefts are located in Germany, The Netherlands, The UK, Spain and South Africa
 - 39% on unsecured parking places and 21% on the road
- Theft of high risk products in Europe in excess of €8.2 billion a year²
- Frequent successful activities against smuggle reported

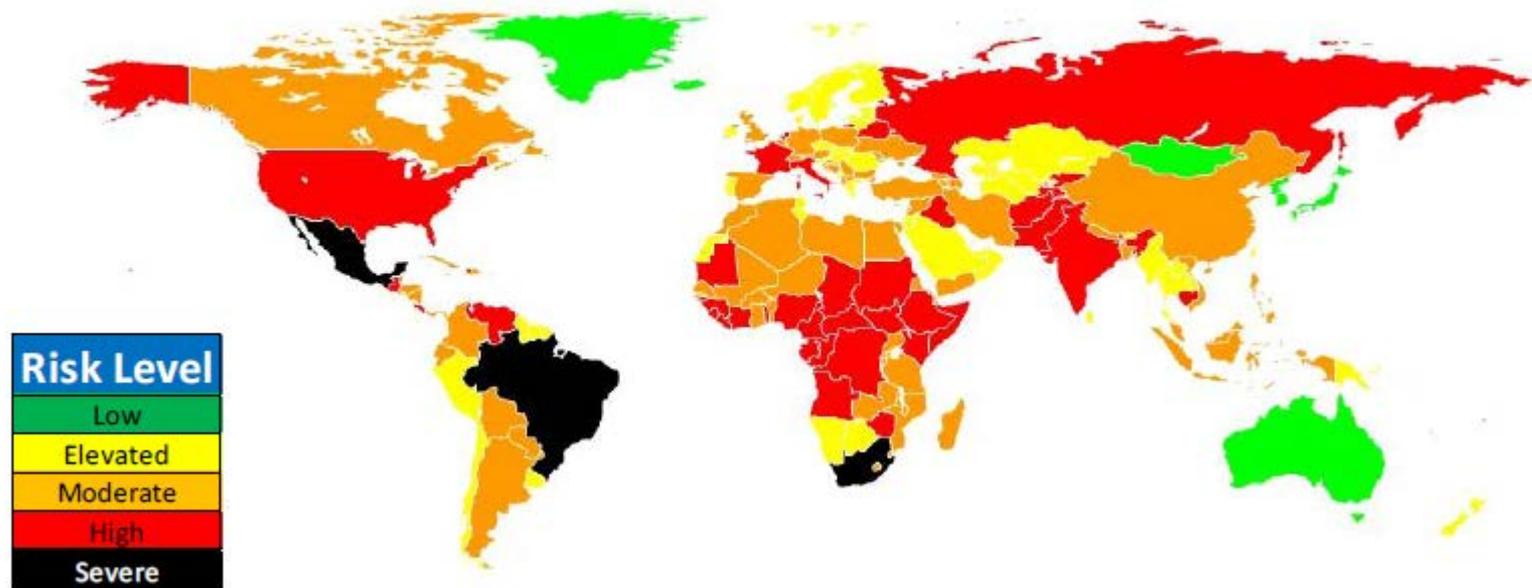
1: vigilant, the monthly TAPA CRIME update, TAPA = [Transported Asset Protection Association](http://www.tapaemea.com/)

2 <http://www.tapaemea.com/> (17. October 2014)

The challenges - Classification

- More and more hijackings of trucks are reported
- Freight Watch identifies France, Italy and The Netherlands as severe including a high level of violence (in comparison with Germany)

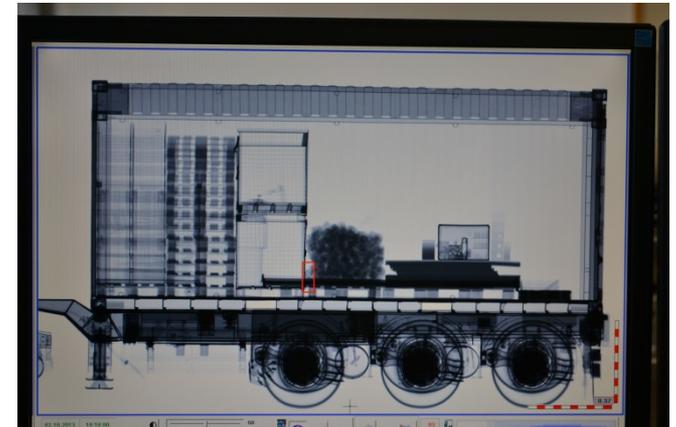
Global Cargo Theft Risk: Threat Assessment



The challenges - Classification

Terrorism

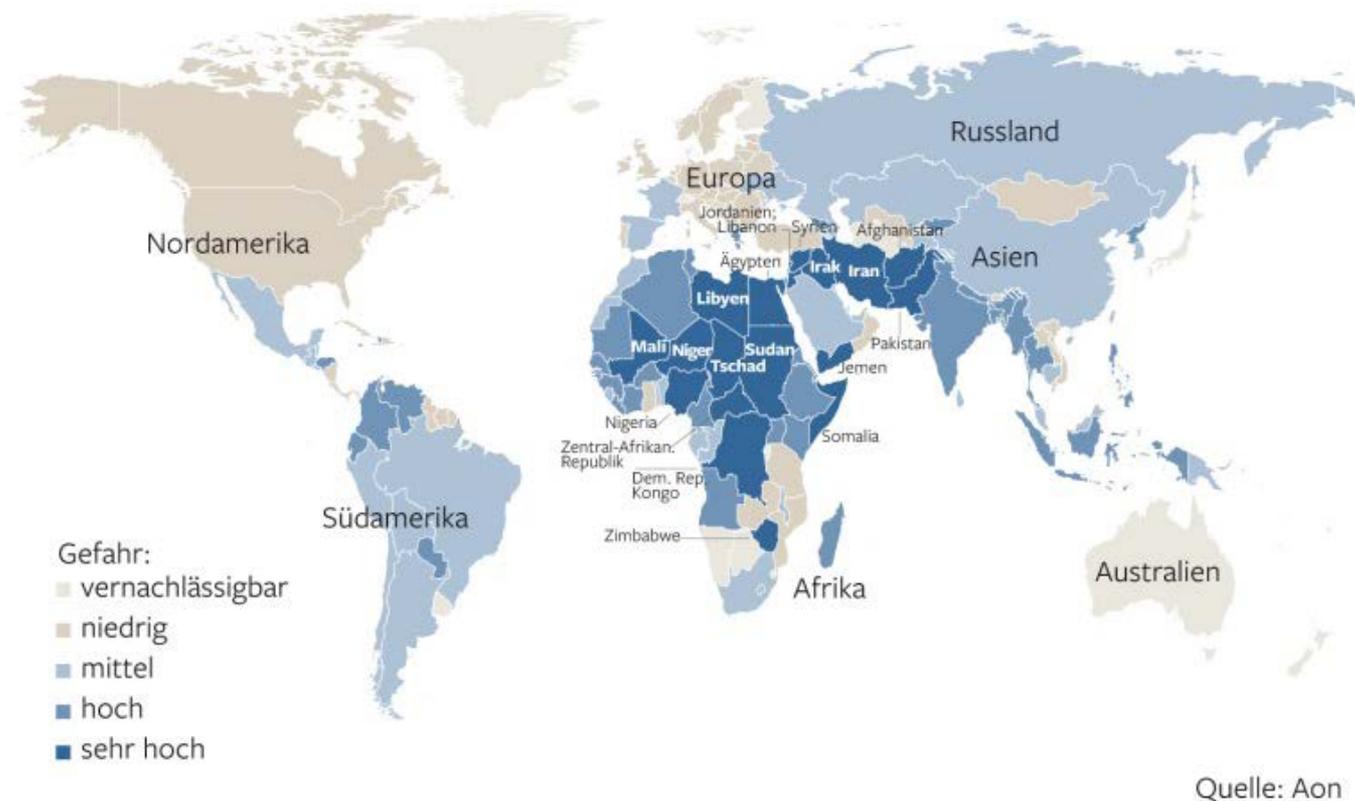
- Since 2001 more than 400 regulations and initiatives for trans atlantic shipments
 - ISPS, modified customs code , AEO, CSI, C-TAPT,...
- 100% scanning of containers postponed from mid 2012 to 2014 but not yet active
- 195 terror incidences up to 17. October 2014
 - “Only” 6 with trucks (in Near East)
- No terrorist attacks with containers identified



The challenges - Classification

Terrorism

- According to the AON Terror Map, risks are low in Europe



The challenges - Classification

Extreme weather

- “once-in-a-hundred-years events” appear more frequently
 - flooding in Saxony 2002 and 2013,
 - extreme thunder storms (Kyrill (2007), Gudrun (2005), Ela (2014))
 - heat waves,...



The challenges - Classification

Extreme weather

- Most affected: railways
 - special intelligence searching for alternatives in case of interrupts in road transport
 - (feeling of) bad preparation, bad maintenance of infrastructure and vehicles in some cases



Frozen coupling on ICE in Berlin
(Source: Eisenbahnrevue International 2/2011)



High-Speed-Line Hannover Berlin
(Source: Eisenbahnrevue International 8-9/2013)

The challenges - Classification



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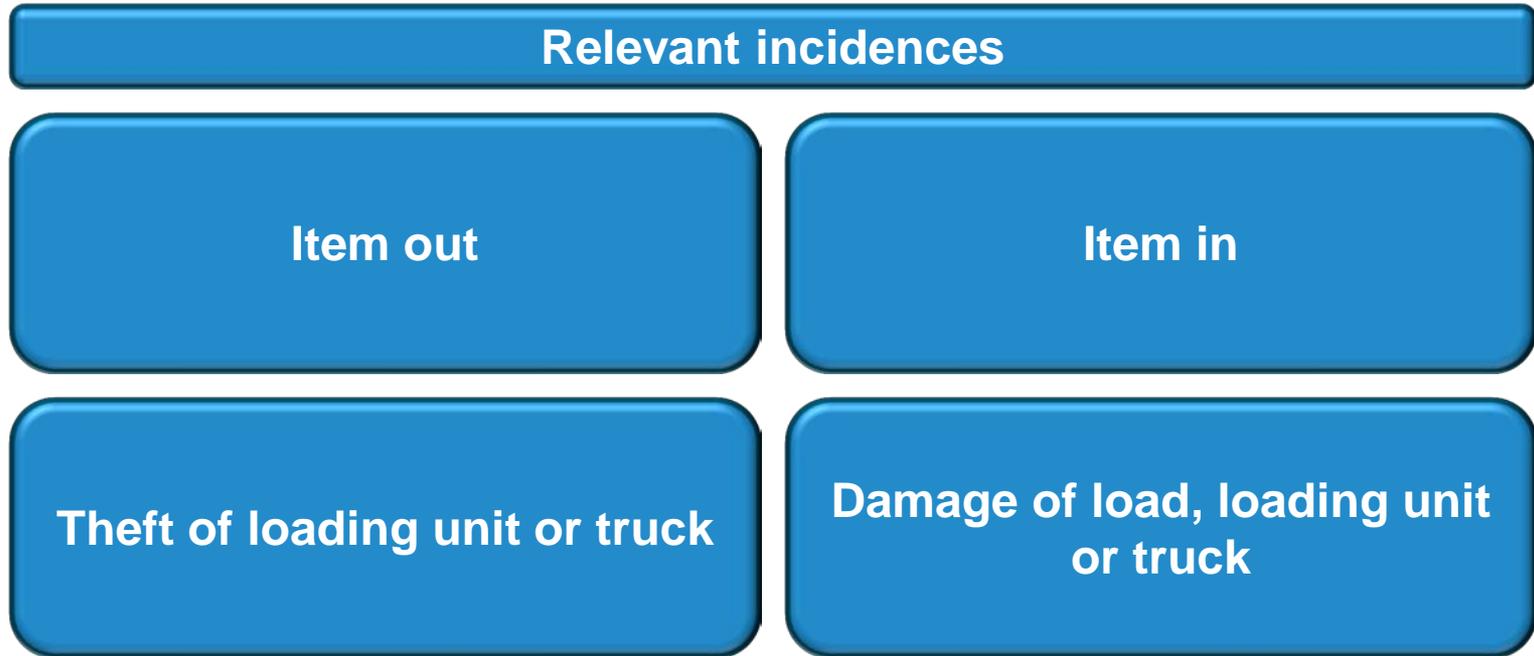
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Ways to solutions - the logistics view

This is what shippers, haulers and forwarders see and cope with:



→ Avoiding these incidences leads directly to protection against terrorism and crime

Solutions – some projects



*Secure and efficient logistic processes :
prevention, identification and coping*



Creating an Agenda for Research On Transportation sEcurity

Solutions

- Risk assessment and risk management
 - Concentrate on relevant points
 - Identify weak points / vulnerabilities
- Use experiences from experts, experienced staff members or local inhabitants



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Solutions

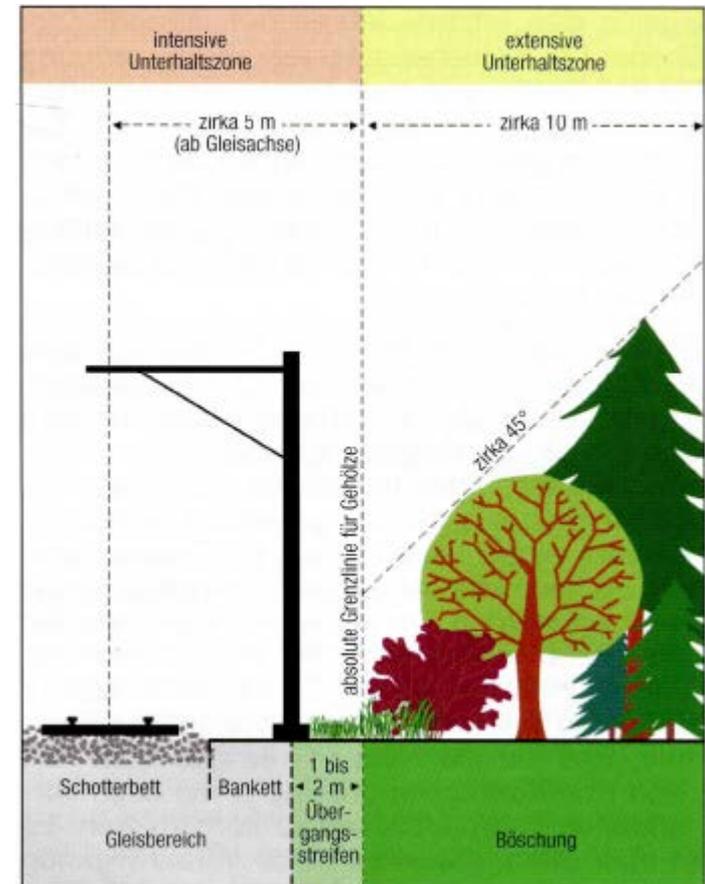
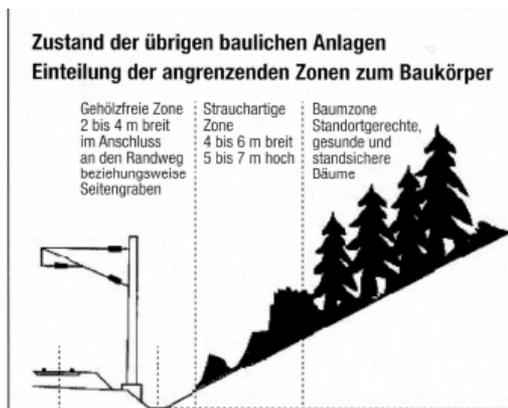
- **SefLog main recommendations** for security in Land Transportation:
 - Consider and design security initiatives as integrated technical, personal and organisational (processes) approach
 - Importance of security plans
 - Consider the weak point human (motivate, assist, check)
 - Secure routing and parking
 - Use certificates not only as a nice to have
 - Collaborate with authorities
 - Restrictive use of data and information



Solutions

- An aspect concerning maintenance preparedness in advance
 - green cut has been shrunken extremely
 - instructions to assure that no trees becomes as high that it could fall on the track remain active
- ➔ one important reason for problems in winter, with heavy rain or storm

© Source of the graphs:
Eisenbahnrevue
International 8-9/2014, page
424; Hans Leister



Solutions – Technical

- Wide range of technical methods and innovations
 - sensor technology (noise, light, gases, temperature)
→ becoming cheaper, more reliable and manageable
 - software solutions for risk detection, profiling or video detection
 - Tracking&Tracing
helps to identify weak points and enables real-time interaction
- ➔ ***Use technology as low as possible and as much as needed***
- ➔ ***Effect depending on personal and organisational measures taken in parallel***
How to react in alarm cases, who is responsible for what, assuring in-time reaction,..



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Research needs and fields

- What is the value of resilience, safety and security?
- Establishment of Multi-Modal Risk Management
- Event management and fall back processes along the supply chain
- Solutions for real time decision making and simulation of results in case of hazards and criminal / terrorists attacks
- Strategies for storing and concentration of equipment and staff in case of hazards (diesel-engines, mobile bridges, repair teams and equipment,.....)
- For Security see CARONTE results and mid term event





Final aspects

- ➔ ***ICT solutions and strategic ideas are depending from collaboration especially from competing companies***
- ➔ ***Relay on motivated staff, reliable and established business relations , maintenance and best processes***

