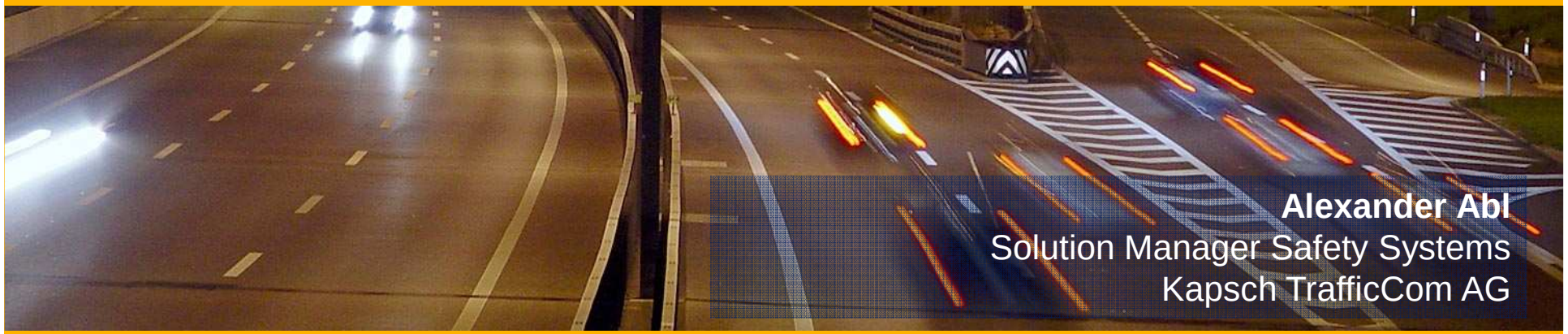
Road Safety: Technologies and Solutions

2nd ASECAP Road Safety Event Prague – 1st March 2010



Alexander Abl
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Tolling as a Mainstay for Road Safety

Indirect via trans-action data from ETC system

New investments in road infrastructure

- Income is used for new infrastructure to increase road safety
- Traffic analysis for more goal oriented investments

Enhancement of road operation

- Income is used for a more sophisticated road operation
- Data from ETC used for more specific road user information

Indirect via trans-action data from ETC system

Direct via income

Direct via income

Electronic Toll Collection System

ASECAP Activities in Road Safety

- ASECAP is co-chairing the eSafety forum (together with ACEA and ERTICO)
  - Aims of eSafety are to promote the development and deployment of integrated road safety systems and it is driven by the European Commission
  - eCall as an example of an eSafety initiative. ASECAP coordinates all stakeholders interested in the quick implementation of a pan-European eCall service
- Memorandum of Understanding with Easyway
  - EasyWay aims a seamless ITS deployment all over Europe's main corridors

ASECAP is engaged in strategic ITS development in Europe

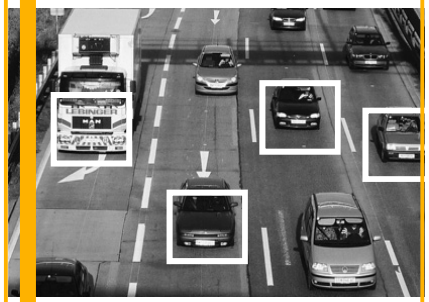
The ETC System as Basis for further ITS Applications

Electronic Toll Collection System

1. Traffic Information, Management & Planning

- High accurate data through capturing traffic data from the toll system

2. Safety & Security



- Improved safety and security through better traffic enforcement and observation

3. End-user Mobility Services

- Better service for the driver through value added services

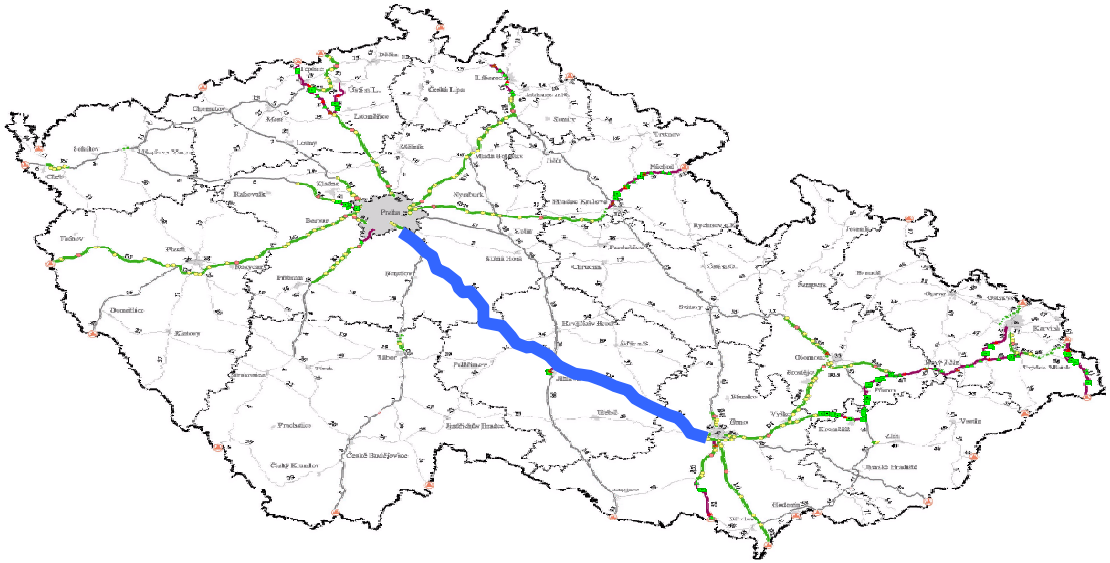
4. Industry Solutions

- Additional revenues through utilizing the ETC infrastructure for implementing industry solutions

Traffic Management System for CZ

Overview:

- Traffic management system on highway D1 (Prague - Brunn)
- Traffic and weather sensors
- CCTV
- Variable message signs
- Integration into Traffic Management Center (Ostrava)



Highway Traffic Management in CZ

- Provisioning of the data to the national traffic management centre in Ostrava
- Observing traffic using CCTV
- Detection of road surface conditions
- Sending information and warnings to road users (e.g. road works on 3 lanes)

→Increasing Traffic Safety

→Optimized Traffic Flow

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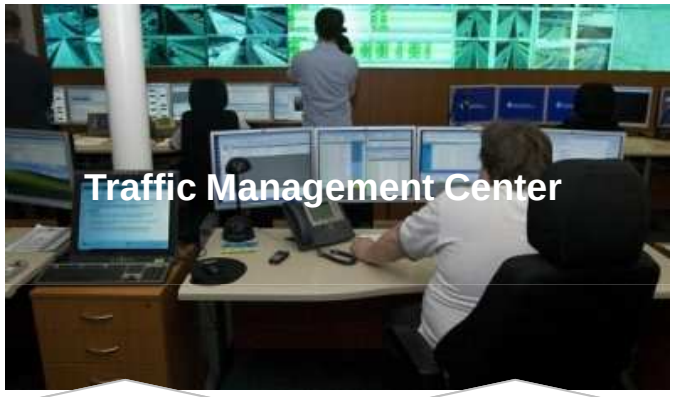

Telematics Platform

The ETC System as Basis for further ITS Applications

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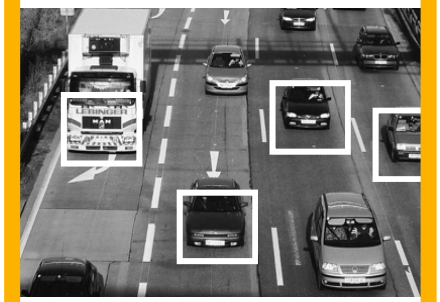


- Improved safety and security through better traffic enforcement and observation

Traditional Speed Measurement (Advantages/Disadvantages)

Laser based

Radar based

Video based speed and distance measurement

Stationary radar systems

Mobile systems

Very efficient due to the surprise effect

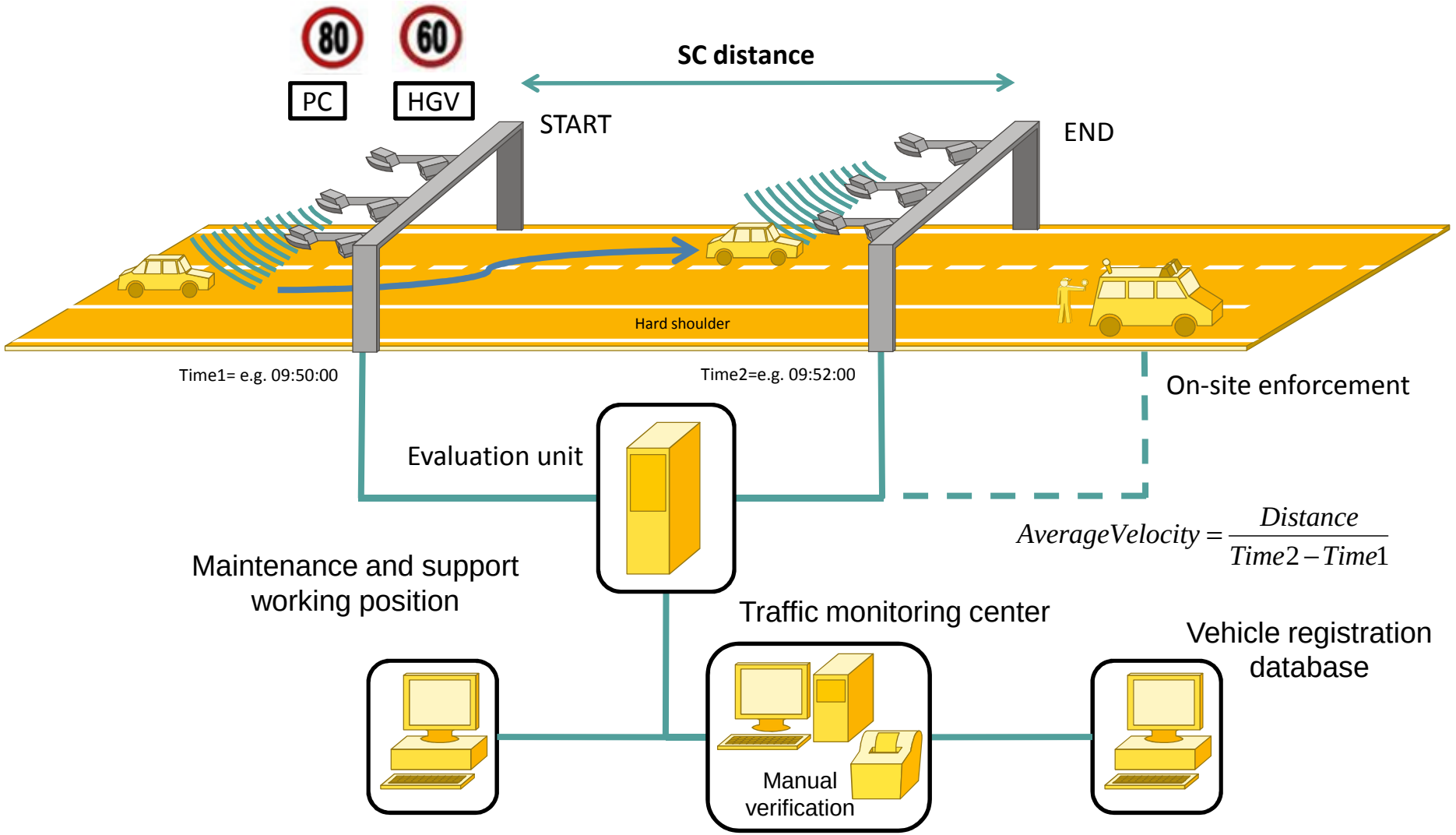
Are personnel-intensive and a continuous operation is not possible

Fixed systems

Operate 24/7

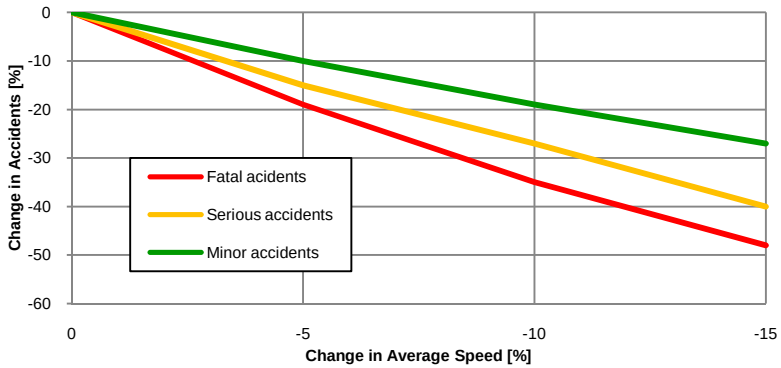
Effect is very local

Section Control Solution



Combining Advantages – Section Control

- **Average speed measurement combines the advantages of mobile and stationary speed enforcement**
  - Reduce accident probability and severity on dangerous road sections
  - Reduce the average velocity on a longer road section
  - Harmonize traffic flow (avoid abrupt breaking at speed traps)
  - **Reduce environmental pollution and noise (due to speed reduction)**
  - Automatic operation (24/7)
- **Extendable by additional system features**
  - Distance measurement
  - Wrong way driver detection
  - Height check



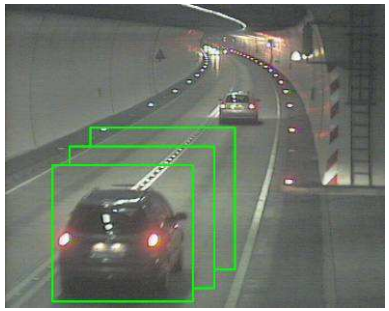
Improving Tunnel Safety - Incident Detection System

Traffic jam and stopped car

Wrong way drivers, wrong lane drivers

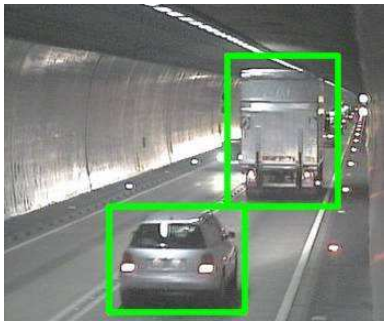
Break down

Smoke



Measurement of speed

Measurement of distance



Vehicle classification

Real Life Examples handled by the Kapsch IDS

Press report about wrong way driver in Tyrol

Navigationsgerät machte 27-Jährige in Tirol zum Geisterfahrer

Navi ließ Frau in Tunnel wenden

- Navigation device instructs 27 year old women to do a U-turn after missing an exit on the S16 in Tyrol/Austria
- She follows this instruction in the Strengen Tunnel
- An IDS recognized that and triggers an immediate information to other drivers
- **No accident happened!**

Geisterfahrt: Wegen Navi Umkehr im Tunnel

Die Abfahrt Ischgl auf der Arlberg Schnellstraße (S16) hat am Samstag eine deutsche Autofahrerin verpasst. Ihr Navi riet, bei nächster Gelegenheit umzukehren. Was die 27-jährige tat – in einer Nische im zweiröhrigen, sechs Kilometer langen Strengen Tunnel. Sie fuhr 1,5 Kilometer zurück zum Tunnelportal, dort wartete bereits eine Kolonne vor der roten Ampel.

Accident in Semmering Tunnel S6/Austria

Semmering-Tunnel: Lkw in Flammen

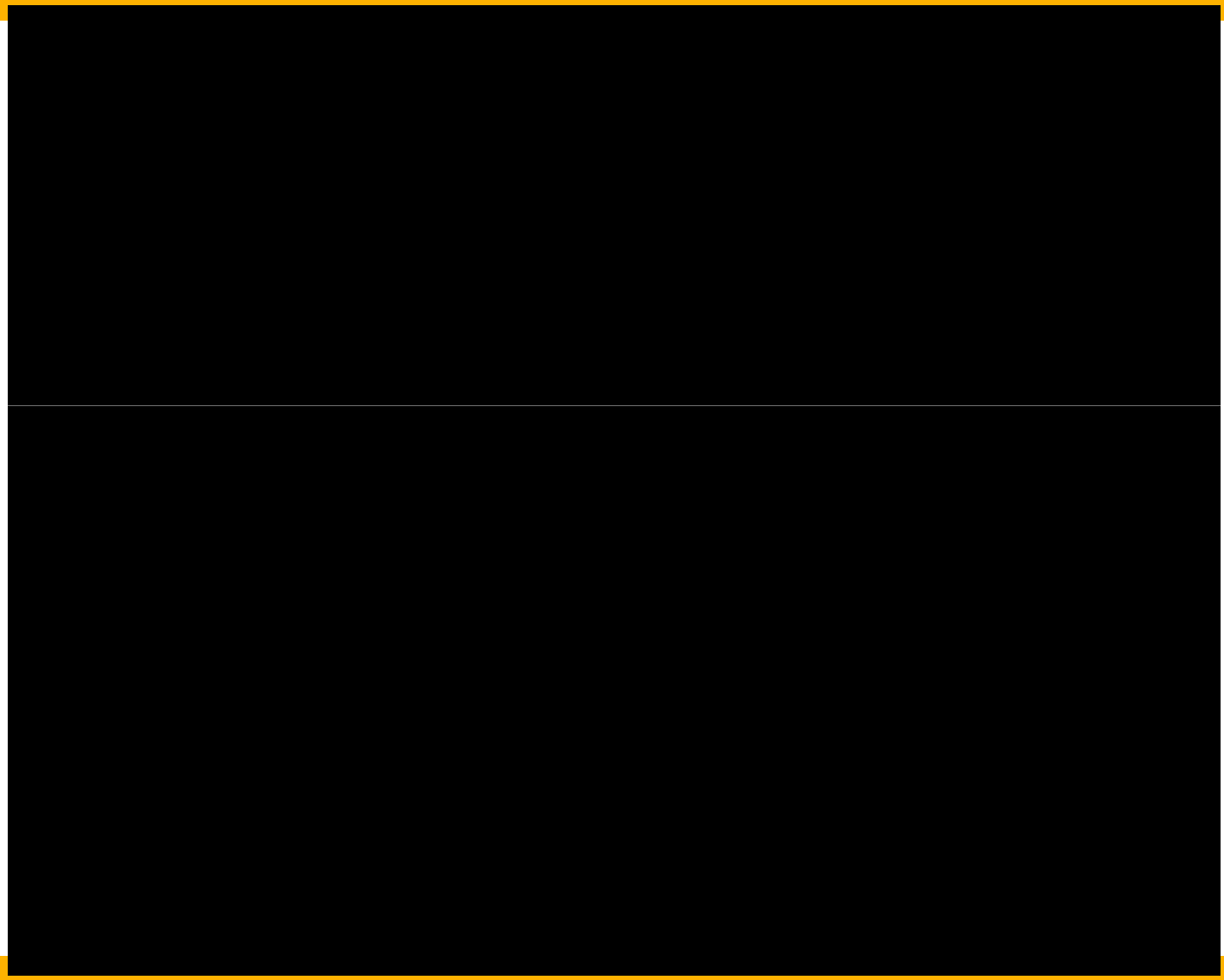
Explosionsgefahr / Großeinsatz der Feuerwehr

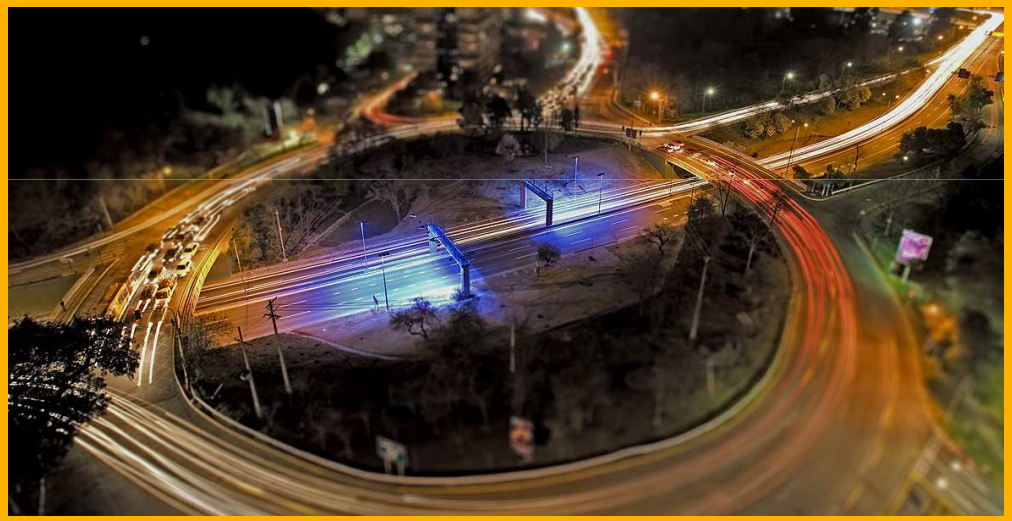
PATRICK WAMMERL

Die Feuerwehr war rasch vor Ort und löschte den Brand

- A hazardous goods transport (empty but not cleaned) caught fire
- Load: leavings from iron chloride (e.g. used as rat poison)
- Video from the IDS alarming

Accident in Semmering Tunnel S6/Austria - Video





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