Localisation and tracking solution of dangerous goods transport

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Focus

*Satellite navigation technologies* (EGNSS - EGNOS and Galileo) for the transport of dangerous goods:

- Monitoring
- Localization
- Tracking & tracing
Transport of dangerous goods in EU-28

In 2013:

- More than 154 billion tonne-kilometres on European roads, railways and inland waterways
- Over 77 billion tonne-kilometres by road

By type of dangerous goods (by road) (% in tonne-kilometres)

source: Eurostat http://epp.eurostat.ec.europa.eu
The issues

The movement of dangerous goods:

- Implies aspects related to security and safety
- Is a concern common to involved industries and authorities

The risk associated to the rail transport of dangerous goods is major with respect to road (source: SECTRAM project)
Why localization & tracking solutions?

- Traceability and monitoring are not only a matter of an intelligent and efficient logistics.
- Sensitive goods monitoring service will reduce cost related to transport administration by 5%, total number of heavy goods vehicles related road accidents by 0.2% and more information will lead to about 0.1% reduction in the costs of missing and delay goods (Swedish study “Assessment of Telematic Systems for Road Freight Transport”, School of Computing Blekinge Institute of Technology Sweden).
How localization & tracking solutions work

• Today widely adopted to localize, track & trace
• Also integrating sensors for monitoring the status of the goods
How localization & tracking solutions work
How localization & tracking solutions work
Localization & tracking solutions with EGNSS

EGNOS:
• Augmentation system of GPS/improving GPS performance
• Euro-Mediterranean coverage
• Available now, free of charge and widely available in consumer-grade receivers
Localization & tracking solutions with EGNSS

*Galileo:*

- Autonomous constellation
- EGNOS will also augment Galileo
- Multi-constellation will provide further improvements - when buildings block the signal and reduce the number of visible satellites, the availability of more constellations ensures a much more accurate/robust position.
Tracking dangerous goods with EGNOS

- Higher position accuracy/stability
- Position guarantee
- Further enhancements with Galileo

True path/position
GPS
GPS+EGNOS
GPS+EGNOS and protection level
Tracking dangerous goods with EGNOS

- Operational Localization & tracking systems of road transport
- Higher position accuracy for enhanced risk management, prevention/statistics
- Confidence/guarantee on the position for a better control & enforcement/transport quality contract & liability check

• Safety
• Security
• Efficiency
CORE demonstration

Intermodal transport - tankers transporting argon from:

- Duisburg (Germany) to Terni (Italy)
- Linz (Austria) or Lyon (France) to Terni (Italy)

End-to-end demonstration in real operations involving:

- Institutions/regulators
- Transport operator

Transport and cross border operations
CORE demonstration

- Efficient collection of timely and precise information where different operators and modalities are involved;
- Continuous localization, control and monitoring of goods traffic for a better monitoring & control/improvement of transport;
- Availability of reliable data in real-time and historical for statistical reporting and incident prevention/higher safety and security/law enforcement, risk prediction/reduction, emergency management;
- Alignment with/contribution to regulations and standardization (UNECE OTIF WG - United Nations Economic Commission for Europe/Organisation Intergouvernementale pour les Transports Internationaux Ferroviaires Working Group)
Questions ?
Thank you!

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