EGNOS use for road transport of dangerous goods: the SCUTUM project

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EGNOS the road transport

- EGNOS for dangerous goods transports
- EGNOS CS/EDAS
- MENTORE: EGNOS OS for dangerous goods transports
- SCUTUM: EGNOS OS + CS for dangerous goods transports
- The CEN Workshop SCUTUM
- Facts and next objectives
EGNOS

- European Geostationary Navigation Overlay Service
- Satellite Based Augmentation System
- Services over Europe
- Services interoperable with GPS and improving its performances:
  EGNOS improves GPS position accuracy down to one metre
  EGNOS provides integrity information (i.e. information if the GPS satellite navigation signals are “genuine”)
EGNOS services

EGNOS for land and mobility applications (including freight transports):

*EGNOS OS* (from SiS) → Position accuracy improvement

*EGNOS CS* (form EDAS) → Position accuracy improvement also in difficult environments + integrity → making it suitable for applications requiring very accurate and guaranteed positioning
The role of EU R&D projects

– Develop technology
– Prepare the market (validate business models/ possibly create new ones, create awareness towards user community)
– Turn proven demonstration into adoption, starting from nation operational best cases
– Contribute to the creation of necessary standards to lead researches into fruition
– Support institutions in the regulatory process
EGNOS CS/EDAS

EGNOS data (real-time):
- RIMS raw observations
- SBAS messages

Value-Added Service Provider

End users

User-specific information

EGNOS Data Access Service

– EDAS distributes EGNOS raw data to VAS SPs connected to it, in real-time, within guaranteed delay and controlled access

– VAS SPs implement solutions/ create products built on EGNOS data (such as delivering of EGNOS data via different telecommunication means and value added services exploiting EGNOS integrity)
EGNOS CS/EDAS-based services

- **Protection level** (exploitation of the integrity) → confidence on the position to be used in applications driven by stringent constraints, in terms of safety and liability

- **SBAS corrections in case of difficult environment** → enhanced availability of the EGNOS augmentation

availability and performances enhancement
EGNOS CS/EDAS based architectures (present 1)

- Processing in the end-users tracking & tracing platform
EGNOS CS/EDAS based architectures (present 2)

- Processing in the VAS SPs that deliver value added services to end-users tracking & tracing platform
EGNOS CS/EDAS based architectures (future)

- Processing in the OBU (SL? TBD)

CEN Workshop standardization

Input:
- Raw data (code range/phase measurements)
- Positions, time

Output:
- EGNOS positions
- HPL
enì considered **EGNOS enhanced stability and accuracy** interesting features for operational uses

→ enì decided to upgrade its GPS system into EGNOS OS (on more than 400 tankers in Italy, France, Austria)
MENTORE:
EGNOS OS for dangerous goods transports (2/2)
SCUTUM: EGNOS OS + CS for dangerous goods transports

A clear need from a specific niche market

EGNOS benefits for dangerous goods transports:
– Better accuracy
– Higher confidence/guarantee on position
– Enhanced availability
– Adding value to GPS now, and preparation to Galileo
CEN Workshop SCUTUM: launching a technical standardization

SCUTUM:
- Upgrades eni operational system from EGNOS OS to EGNOS OS + CS/EDAS
- Extends it on a cross-border basis (France and Austria)
- Starts a EU-wide technical standardization for EGNOS CS/EDAS based services (CEN Workshop SCUTUM)

CEN Workshop SCUTUM
- Outcome: technical specification of the interfaces
- Timing:
  September 2010/ KO
  December 2011/ approval of CEN Workshop Agreement/end of project
Why launching a technical standardization

Open the market, making available the raw data

SCUTUM identified the CEN Workshop as appropriate its purposes: the CEN Workshop is a flexible and structured tool to enable a set of stakeholders to elaborate a standard and share with any interested party.

For this reason, SUCUTM launches a CEN Workshop with the goal to initiate the standardization of the EGNOS CS/EDAS based services for tracking & tracing of the transport of goods, starting from the dangerous goods/road and to be extended to other freight types/modes of transport.
eni uses EGNOS OS to track operating fleet

SCUTUM enhances 225 (197 + 3 GPRS & Iridium + 25 Slim) OBUs to EGNOS CS

Italy, Austria, France

SCUTUM conceived on the basis of requirements from eni, Italy’s and France’s Ministries of Transport, playing fundamental role

Focus: neighbouring countries
The first 100 OBUs are already operational (1/3)
The first 100 OBUs are already operational (2/3)

Visualization of lat-lon and HPL
The first 100 OBUs are already operational (3/3)

Visualization of lat-lon and HPL
CEN Workshop SCUTUM timing

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<th>Absolute Date</th>
<th>Place (Host)</th>
<th>Remark</th>
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<tr>
<td>Workshop Kick-Off meeting</td>
<td>28/09/2010</td>
<td>Brussels (CEN)</td>
<td>Approval of the Business Plan</td>
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<tr>
<td>Workshop Plenary Meeting</td>
<td>11/02/2011</td>
<td>Rome (Italia, TPZ)</td>
<td>First draft version of CWA deliverable</td>
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<td>Workshop Final Meeting</td>
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<td>Brussels (ERF or TPZ or CEN)</td>
<td>Approval of CWA deliverable for the publication</td>
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A draft CWA already circulated

Membership on a voluntary basis
Registrations open to anyone willing to join
Deadline 9 February
Lyon, 7 June 2011, Think Tank on the use of advanced technologies for dangerous goods transport

Questions?

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