M-TRADE: Multimodal TRANsportation supported by Egnos

The European platform to promote EGNOS and Galileo in the Multimodal Freight Transport Community
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The M-TRADE Consortium comprises 15 partners, merging complementary competencies and including representatives of the considered User Community

Under the coordination of:

M-TRADE is managed by the GNSS Supervisory Authority (GSA) through the 6th EU Framework Programme for Research & Technological Development
Highlights

A one-month demonstration campaign successfully performed from week 43 to week 46 of 2006

> Four real-life pilots

> M-TRADE demonstration conceived to validate EGNOS / CDDS (Commercial Data Distribution Service) service provisioning architectures and schemes in the freight transport market

> Main outputs:

  ▶ Opportunities for EGNOS / Galileo

  ▶ Necessary enhancements and developments towards M-TRADE pre-operative service scenarios, for pre-operative remote asset and goods tracking & tracing

  ▶ Key service enablers
M-TRADE Pilots

Real users involvement and commercial freight traffic/logistic chains (tailored on user needs) at the basis of M-TRADE pilots


> Pilot 2: tracking & tracing and temperature monitoring of a reefer carrying perishable goods via a multimodal road-rail transport chain (by rail from Brescia to Bologna 06-07.11.2006; by road from Bologna to Modena 08.11.2006)

> Pilot 3: tracking & tracing of a tank rail wagon loaded with oil products from Genoa sea port (Italy) to Dordrecht Zeehaven (The Netherlands), crossing Switzerland and Germany 30-31.10.2006 (Genoa - Ferrandina) and 07-09.11.2006 (Ferrandina - Dordrecht)

> Pilot 4: tracking & tracing of a tank vessel loaded with chemical (petrol) from Vienna to Budapest round-trip via Danube river (13-18.11.2006)
Project Overview

> Co-funded by the Galileo Joint Undertaking (GJU) in the frame of a 2nd call 6th FP

> M-TRADE’s main goal: to explore and promote **GNSS (EGNOS /Galileo) use in Freight Multimodal Transport**

**M-TRADE has implemented and validated an end-to-end “solution” providing user-oriented GNSS services for freight containers and swap bodies tracking & tracing (T&T), and evaluates their introduction in Customs and Border Control applications**
M-TRADE solution

> Entirely based on COTS, combined with existing facilities purposely enhanced / adapted, new developments, and some RFID purposely procured in the project

> Use of standard protocols for the interfaces, harmonisation between M-TRADE MMC and system servers (same XML interface)

> Use of two different GPS/EGNOS assisted via GPRS units

> Main elements: MMC (with Web Server), KT Server & KT OBU, ShPIDER Server & ShPIDER OBU, RFID, River Server, DGIS Server, CCS Server, SIMOG
M-TRADE services

> In Node: Shunting – remote monitoring

> On-route:

- **Dangerous Goods T&T:**
  - Tank wagons remote localisation & visualisation on digital maps
  - Geo-fencing (position & time wrt pre-defined path / time), alarming in case of deviation / unplanned stops
  - Warning in case of anomalous conditions detection
  - Punctuality check (ETA – Estimated Time of Arrival)

- **Perishables T&T:**
  - Reefers (specialised refrigerated swap bodies) remote localisation & visualisation on digital maps
  - Goods temperature monitoring / identification details
  - Shipment monitoring: “right destination / right time”, temperature
  - Alarming in case of unplanned stops, goods information / temperature anomalous conditions
  - Punctuality check (ETA – Estimated Time of Arrival)

- **Containers T&T:**
  - Shipment remote localisation & visualisation on digital maps
  - Correct loading & unloading of containers on a vessel.
M-TRADE Pilot 2 (1/2)

M-TRADE OBU and RFID tags (for good ID and temperature monitoring) mounted on the reefer.
Remote Tracking & Tracing and temperature monitoring during rail and road trailer transportation

Involved users: IPBO and ITC
M-TRADE Pilot 3
System running continuously from Genoa to Ferrandina and to The Netherlands
Involved users: Trenitalia and ERMEFRET
M-TRADE Pilot 4
System running continuously from Vienna to Budapest and trip-back
Involved users: the vessel captain of the petrol vessel owner
Next steps

Based on collected data and user feedbacks:

> Assess applications for which EGNOS/Galileo differentiators have “market” value for the whole downstream value-chain, and related services can be successful commercially exploited also looking to the international nature of the freight trade;

> Assess key “service enablers” and provide guidelines/recommendations for pushing the adoption of GNSS (EGNOS/Galileo): “M-TRADE roadmap”

> Identify and explore new areas of researches/extension for future follow-up/exploitation

Important M-TRADE appointment: Final Conference ending the project and presenting main achievements (Rome TPZ, 21st March 2007)

www.newapplication.it/mtrade