ERTICO-ITS Europe – Programme on Freight and Logistics



ERTICO-ITS Europe provides a multistakeholder cooperation platform for ITS

TELECOM Mobile Network Operators **C** ICOOR S M B (6) IFSTTAR T SUNIVERSITY OF LEDS MIRA SINTER CTAG Centro Tecnológia AALBORG UNIVERSITY Research vic^omtech CATAPULT tecnalia) TNO innovation for life (高) **A**rplus[⊕] Atos CETECOM Technolution **▶** DEKRA Allianz (11) TeamNet TOMTOM 🍪 Service Providers Ontinental DENSO MECORA FUITSUTEN GEMAILO **₩** HUAWEI NEC **Suppliers** peiker BOSCH Telit' **///** * ASFA OAISIFI INIAIG @ CUBIC Inteth Traffic & SIEMENS Swarcos TRAINCE Xerox kapsch >>> MICHELIN OTIALCOWW. inspectra Transport Industry IRU (AC) Users Automobile Club d'Itali VOLVO Ford TOYOTA VDA Verband der VOLVO - CANE HONDA Vehicle Manufacturers



Programmes













ITS for Freight Transport & Logistics

eMobility

Connected & Automated Driving

Freight Transport and Logistics programme

Connectivity for freight and logistics

Internet of Things and big data for logistics

interfaces for an integrated syncromodal freight transport system.

User awareness and benefits of ITS to logistics stakeholders

- __Demonstrating C-ITS for logistics hubs - CO-GISTICS)
- Physical
 Internet
- Big Data on Transport
- Demonstrating C-ITS for logistics cross border-InterCor
- Ports of the Future

- Pan European

 Platform on logistics
 applications AEOLIX
- Harmonised
 methodologies for
 carbon footprint
 calculation LEARN
- ERTRAC, C-ITS
 Platform, DTLF, &
 ALICE Advocacy

- Training for C-ITS deployment, CAPITAL
- UFT Data collection framework NOVELOG

ERTICO-ACEA study on ITS for heavy goods vehicles

Standardisation and testing - Interop IG)



ERTICO Roadmap on freight and logistics

Physical Infrastructure

Digital Infrastructure

Nodes

 Factories, Warehouses, Terminals

Links

• Roads

Software

Logistics Information
 Systems, ITS

Hardware

 Sensors, RSU-ITS, automatic getaway

Cargo Intelligence and endendend supply chain visibility

• ETA, cargo load, data



Traffic Management and links to other modes

- Enable "connected mobility" through C-ITS, IoT, 5G, for the vehicle, freight and infrastructure and enhance the provision of core services) in Europear logistics hubs (Ports, terminals, cities).
- Improve logistics activities efficiency in urban areas and linking to hubs by combining intelligent cargo & logistics services.
- Cooperate with logistics and freight public/private bodies.



C-ITS Deployment in EU logistics hubs



CO-GISTICS Trieste pilot deployment



Trieste installations status (1/3)



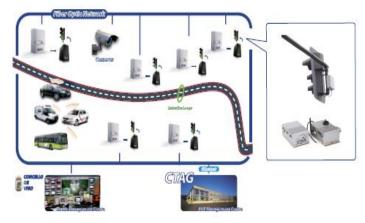
CO-GISTICS Vigo Pilot deployment



URBAN CORRIDOR

Main streets of Vigo (city center and entrance) covered by:

- 24 RSUs
- 43 Traffic Detectors
- 5 Cameras
- All network components linked by a fiber optic ring
- Traffic information provided in real time by Vigo Council Traffic Department

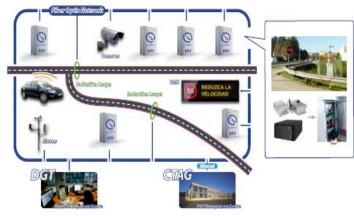




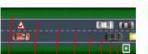
INTERURBAN CORRIDOR

More than 100 km of high capacity roads covered by:

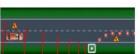
- 30 RSUs
- 21 Cameras
- 19 Variable Message Signs
- 10 High Precision Meteorological Stations
- All network components linked by a fiber optic ring
- Traffic information provided in real time by DGT North West Traffic Management Centre



Traffic Jam Ahead



Road Works



Adverse Weather



Green Priority Bus



Regulatory and Contextual SL



Green Priority Emergency Vehicle



Alternative Route Info



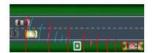
Red Light Violation Warning



Cooperative FCD



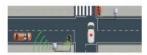
ACCIDENT



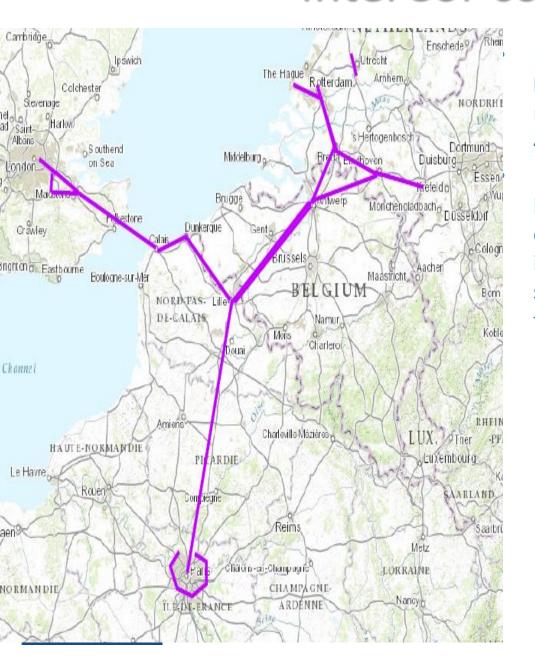
EEIS (GLOSA)



E.V. Approaching



InterCor corridor

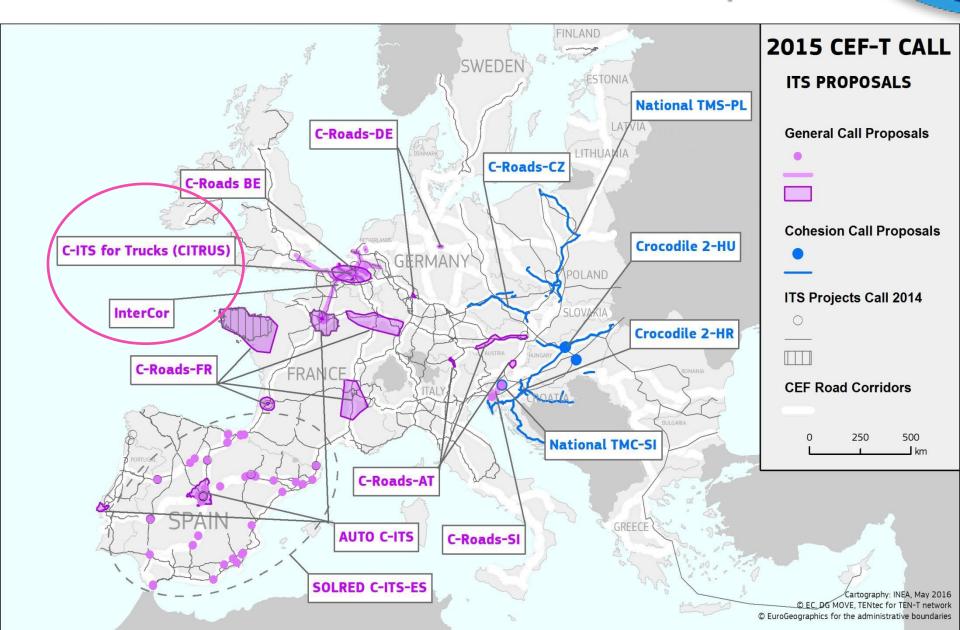


InterCor is a CEF (**Connecting Europe Facility**) 3 year proposal study of 30
million euro by RWS, MEEM, UK, Flanders,
4 ports and ERTICO

Pilot C-ITS services on freight and logistics by building on a common hybrid communication architecture and taking into account commonly agreed specifications from existing C-ITS corridors first results.

- Traffic management
 - In Vehicle Signage
 - Probe Data
 - Road Work Warning
 - GLOSA
- Freight and Logistics
 - Truck parking
 - Multi-modal cargo
 - Tunhel logistics

C-Roads Platform in Europe



Interfaces for an integrated syncromodal freight transport system

- Many digital platforms on freight transport and logistics
 - Port Community systems & Cargo Community System (CCS)
 - e-Customs platforms
 - Single Window platforms
 - Proprietary ICT /ITS Solutions
- Open standards and EU initiatives
 - UBL/XML, EDIFACT, GS1, Open Data Standards, DATEX II
 - ITS Directive, RIS, eMaritime
 - (ETPs), such as ALICE, ERTRAC, ERRAC, Waterborne



Business Needs

Needs at Hubs Ports, Terminal

Management Needs

- Process control, customs clearance
- Capacity planning, scheduling

Data needs

- Vessel Load
- Berthing schedule. Load plan, ETA, container location, customs clearance status

Interface level needed

- Data availability, visibility
- Document transfer

Visibility Needs at Supply chain

Management Needs

- End to end visibility and exception management
- Vertical cooperation and mode conversion

Data needs

 Load size, and format, origin, destination, asset availability, capacity availability, schedule, voyage reports, travel authorisation, shipment location, shipment status

Interface level needed

- Data availability, visibility
- Document transfer
- Online-booking links, confirmation
- Intelligent agent, exception alerts

Network Optimisation needs

Management Needs

- Load factor, capacity optimisation
- Horizontal collaborations

Data needs

- Combined demand
- Combined loads, combined locations,
- combined destinations
- Corridors
- Combined lanes, schedules

Interface level needed

- Lane analysis
- Optimisation algorithms
- Cost analysis

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Policy Needs

- The European Commission DG MOVE has set up the Digital Transport and Logistics Forum (DTLF) to support digitalisation of freight transport and logistics.
- It will bring together Member States and stakeholders from all transport and logistics communities with the aim to identify challenges for EU common action & to provide recommendations,
- The current DTLF report results recommend the establishment of a harmonized architecture on exchange of information for end-to end visibility across the supply chain.
- The EC is aiming for a (CEF) demonstration project building upon the results from Horizon 2020 projects on this topic.
- AEOLIX has been identified as one of the operational instruments for implementing these recommendations



AEOLIX innovation

Interoperability

Interfaces
with any
logistics
information
systems

Support continued development of standardized formats **Technical**

Distributed open system through configurable plugin APIs.

Demand driven from users rather than supply driven Legal

Data access, privacy, identification, authentication

Secure, Resilient and Trusted environment procedures **Business**

Enable lowcomplexity and low-cost connectivity

Business models and publicprivate governance **Communities**

Open to all stakeholders across modes, within and across related supply chains.

Towards an EU Single European Transport Area



CONNECTION THROUGH PLUGIN APIS

LOGISTICS ACTOR 1

Existing Platform and/or System 1

LOGISTICS **ACTOR 2**

Existing Platform and/or System 1

LOGISTICS ACTOR n

Existing Platform and/or System n











including configurable dashboard for each logistics actor as user interface

XML

INFORMATION OBJECTS

e.g. ramp, cargo, shipping order, status

RFID

SENSORS & CONNECTED **DEVICES**

e.g. GPS, temperature, shock, humidity

DATA MANAGER

Import Export Rules Store

CORE **SERVICES**

Data

Processing Data Linking Message Transformation Routing Geocoding



TOOLKIT

Third Parties



AEOLIX Living Labs

Multi/syncromodal Transport

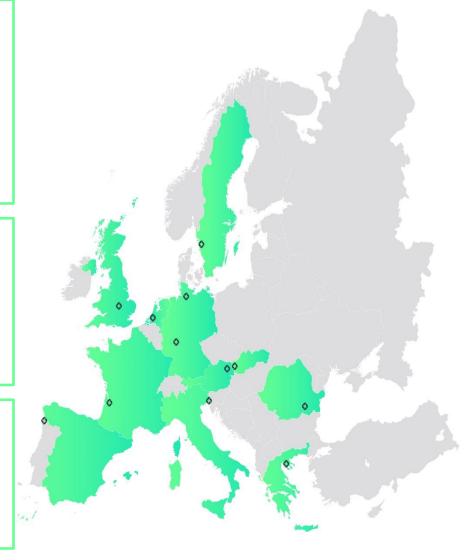
- Thessaloniki-Balkans & central Europe via rail/road
- Gothenburg-Hamburg, Bratislava load control centre, Trieste to three TEN-T corridors (Scandinavian-Mediterranean, Mediterranean, Baltic-Adriatic)
- Urban Bordeaux & Atlantic Corridor
- UK Continental EU China logistics
- Bucharest-Vienna: Inland waterway

Intelligent Hubs

- Sea ports: Hamburg, Gothenburg, Bordeaux, Trieste
- Railway hubs: Hamburg ,Trieste Northamptonshire
- Inland waterway (barge) terminals:
 Bucharest Vienna
- Cities: Bordeaux, Gothenburg
- Virtual freight centres: Thessaloniki Industrial Area

Network Optimisation

- The whole logistics network, incl. ports, inland transport (road, train, barge) in The Netherlands, Germany and Spain
- All sites that will cover multi/ synchromodal transport



European logistics Information exchange platform

- Maintain and promote core specifications based on existing standards to implement the common EU architecture for logistics.
- Feedback specifications and business needs to policy (DTLF, C-ITS Platform), standardisation (GS1, ETSI, CEN, UNECE) and future research needs (ALICE, ERTRAC etc), where relevant and requested.
- Develop a governance / deployment framework for the architecture for logistics users and public stakeholders
- Establishing dialogue and collaboration with related projects and platforms and initiatives
- Organise test events at selected living labs for new users who wish to use the AEOLIX ecosystem.
- The platform would aim for convergence amongst architectures at International level should be foreseen through the correct standardisation mechanisms.

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