This year’s TEN-T Days’ indoor and outdoor exhibition will showcase innovative projects and ideas that contribute to European transport infrastructure development.

The indoor exhibition will welcome about 100 exhibitors showing innovative transport solutions in two halls of the Ljubljana Exhibition and Convention Centre. Come to see exciting projects working on the future mobility – electric vehicles and chargers, ITS and alternative fuels in the Kupola hall, and projects supporting this mobility with rail, maritime, IWW and road transport infrastructure in the Steklena hall! The EU exhibition area will host organisations and programmes funding European transport projects, as well as a large presentation and exchange space.

The outdoor exhibition highlights different innovative technologies for the road sector, such as electromobility natural gas and fuel cells/hydrogen. It spotlights a range of alternative fuels vehicles, from passenger cars and light commercial vans to heavy vehicles such as a CNG and LNG trucks and buses. In addition, an innovative electric plane and other innovate projects will be showcased. As in previous TEN-T Days, we are also offering the popular opportunity to ride&drive a number of test vehicles. Don’t miss the other half of the exhibition and join us outside!

The exhibition floor plan is at the back of this guide.

Welcome to the exhibition
27 Intelligent Cooperative Sensing for Improved traffic efficiency
28 C-MoBiLE - Accelerating C-ITS Mobility Innovation and deployment in Europe
29 AutoMate - Automation as accepted and trusted TeamMate to enhance traffic safety and efficiency
30 Project of establishment of Authority of Public Transport
31 EUFLAPHE
32 AEROBI - SENSkin - SAFE 1.0 T - RAGTIME - CoExist - SKILLFUL - FLOW - ERA-NET Plus Infravation
33 HERE Technologies: enabling road-safety innovations through data collaboration - BMW Group
34 European Hyperloop proof of operations facility
35 Port-Liner - "Zero emission" ships for inland waterways
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31 LNG in BSP and LNG in Baltic Sea Ports
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38 Rail connection to 4 existing freight terminals along the MED Corridor in Spain by Alonso Group
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49 NSB CoRe - North Sea Baltic - Connector of Regions safety and efficiency

OUTDOOR__________________________________________p.121
Ljubljana is the geographical, political, scientific and cultural center of the Slovenian nation. With more than 288,000 inhabitants it is the largest city in the country and an important driver of regional economic growth and innovation.

In the past 11 years Ljubljana implemented almost 2,000 projects to further increase the quality of life. Ljubljana’s extraordinary development is felt at each and every step. The city is marked by a diverse high-quality cultural and numerous sports events for all generations.

Numerous public space re-arrangements have greatly contributed to the higher quality of life and brought in numerous international expert recognitions. The title of European Green Capital has significantly strengthened Ljubljana’s recognition worldwide, upgraded the brand of our city and put us on the map of leading sustainable, green, tourist and innovative cities.

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Make cycling part of your project! The European Cyclists’ Federation (ECF) will again participate in the Ten-T Days this year to highlight the benefits of incorporating cycling measures in your TEN-T project.

Investing in cycling can make a significant contribution to inter- and multi-modality as well as smart mobility. It eases congestion and creates more liveable cities. It also supports economic growth, offers environmental benefits and is an investment in health and productivity.

The ECF is the umbrella federation of the cycling-related organisations in Europe. We coordinate EuroVelo, the European cycle route network, and are a partner in the ongoing Interreg project CHIPS, which aims to develop and promote cycle highways as an effective and cost-efficient low-carbon solution for commuting towards and from urban employment poles.

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Vital Nodes aims at developing sustainable mobility within the urban nodes. It addresses the multi- and intermodal connection between long-distance and last-mile freight logistics and prioritises the deployment of innovative measures in the urban nodes.

Urban nodes are at the core of the Trans-European Transport Network (TEN-T). To develop sustainable freight transport systems while taking action to mitigate the negative impacts of traffic, they need an integrated system involving all levels: European, regional and urban. Cities play a key role to involve all stakeholders - especially freight carriers and infrastructure providers - and enable sustainable policymaking.

Outputs:
- A network of networks consisting of experts, end-users and case owners
- A Vital Nodes methodology consisting of a toolbox of measures for urban nodes
- Validated recommendations on the integration of urban nodes in the TEN-T core network corridors

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Kupola
Foyer
Steklena
Outdoor
Transport directly affects everyone in Europe. Whatever age we are, and whatever activities we undertake, transport and mobility play a fundamental role in today’s world.

The aim of the European Commission is to promote a mobility that is efficient, safe, secure and environmentally friendly and to create the conditions for a competitive industry generating growth and jobs.

The issues and challenges connected to this require action at European or even international level; no national government can address them successfully alone.

The European Commission’s Directorate-General for Mobility and Transport works in concert with the European Union Member States, European industry, citizens and stakeholders.
TENtec is the European Commission’s information system to coordinate and support the Trans-European Transport Network Policy (TEN-T). It is based on two pillars:

1. The first pillar focuses on policy-related information by storing and managing technical, geographical and financial data for the analysis, management and political decision-making related to TEN-T and the underlying funding programme, the Connecting Europe Facility (CEF). The core TENtec modules are OMC (Open Method of Coordination) and iReport, which are accessible through the TENtec Private Portal.

2. The second pillar is related to grant management activities, managed by the Innovation and Networks Executive Agency (INEA), to support the necessary workflows for issuing grant agreements after completion of the selection cycle for new projects - including proposal submission and reception and the required web interfaces. The underlying modules are eSubmission, Action Status Report, Project Follow-Up, Evaluation and Grant Agreement.

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European Commission
Transport Research and Innovation Monitoring and Information System

Monitoring the implementation of the Strategic Transport and Research Innovation Agenda (STRIA)

The EC Joint Research Centre has developed the TRIMIS platform, under the supervision of the Directorate-General for Mobility and Transport and the Directorate-General for Research and Innovation, to monitor the effectiveness of EU and Member State-funded research.

TRIMIS maps and analyses European transport research trends and innovation capacities. It supports transport policy makers and researchers to identify promising innovations and areas where public intervention can create the highest added value.

Transport research projects are arranged within the seven STRIA roadmaps: cooperative, connected and automated transport; transport electrification; vehicle design and manufacturing; low-emission alternative energy for transport; network and traffic management systems; smart mobility and services; infrastructure.

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INEA is an executive agency established by the European Commission to implement EU funding programmes for transport, energy and telecommunications.

This includes the Connecting Europe Facility (CEF), a key EU funding instrument that supports the development of high-performing, sustainable and interconnected Trans-European Networks in the fields of transport, energy and telecommunications; parts of Horizon 2020, the EU’s €80 billion research and innovation programme for 2014-2020; and projects that are the legacy of the 2007-2013 TEN-T and Marco Polo (freight performance) programmes.

In the 2014 to 2020 period, INEA will manage a total budget of up to €34.9 billion: €28.2 billion for CEF and €6.7 billion for Horizon 2020.

INEA’s main aim is to provide stakeholders with expertise and high-level programme management, whilst promoting synergies among programmes, in order to benefit economic growth and EU citizens. The Agency is expected to manage over 2000 projects between 2014 and 2020.

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In 2020, the Transport Research Arena conference will take place in Helsinki, Finland at the end of April. With the conference theme “Enabling the transformation – transport and mobility (r)evolution for smart, green and integrated society” TRA2020 will showcase the disruption of transport and mobility RDI, as well as the ways to enable and foster a European wide transformation in all transport modes.

TRA2020 will put a special emphasis on live demonstrations, taking place also outside the conference venue all around Helsinki. Demonstrations will showcase new mobility services and transport solutions in all modes and all-weather conditions. Furthermore, excursions will take visitors to experience the Finnish icebreakers, the Helsinki-Vantaa airport Hub as well as test areas for automated transport and traffic management centres.

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Two contests for transport research awards:

YOUNG RESEARCHER COMPETITION - A competition that awards prize money sponsored by industry to BSc, MSc and PhD students from all over Europe with the main aim of stimulating their interest in the field of transport. Winners will take part in a prestigious award ceremony at the 2018 Transport Research Arena (TRA 2018) event in Vienna, Austria, on 16-19th April 2018 where they will have the opportunity to meet European Commission (EC) representatives and transport experts.

SENIOR RESEARCHER COMPETITION - A competition aimed at senior researchers involved in EU-funded projects, which will identify and acknowledge leaders that generate impactful research in transport across the European Union (EU). Winners will receive awards from EC representatives and have the opportunity to present their work on an international stage.

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We have formed a thematic network for TO 7 projects under the Interreg programmes umbrella. For the time being more than 20 Interreg programmes are supporting TO 7 projects all over Europe and another 20 programmes also dealing with the same ambitions under e.g. TO 6 and TO4. Interact-eu.net programme is coordinating the activity.

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Fuel Cells and Hydrogen Joint Undertaking (FCH JU) is a unique public private partnership supporting research, technological development and demonstration activities in fuel cell and hydrogen energy technologies in Europe. Its aim is to accelerate the market introduction of these technologies, realising their potential as an instrument in achieving a carbon-lean energy system.

Fuel cells – an efficient conversion technology, and hydrogen – a clean energy carrier, have a great potential to help fight carbon dioxide emissions, to reduce dependence on hydrocarbons and to contribute to economic growth. The objective of the FCH JU is to bring these benefits to Europeans through a concentrated effort from all sectors. The three members of the FCH JU are the European Commission, FCH industries and research represented by Hydrogen Europe and Hydrogen Europe Research.

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A well-functioning and efficient Air Traffic Management (ATM) system is a vital element for the sustainability of global aviation. That is why in 2004, SESAR (Single European Sky Air Traffic Management Research) was set up to modernise and harmonise ATM systems through the definition, development and deployment of innovative technological and operational solutions.

Today, SESAR consists of two pillars: The SESAR Joint Undertaking, a public-private partnership established as a Community body in 2007, and the SESAR Deployment Manager established in 2014 under a framework partnership arrangement with the European Commission.

**SESAR Joint Undertaking** is a public-private partnership which pools the knowledge and resources of the entire ATM community in order to define, research, develop and validate SESAR Solutions.

**SESAR Deployment Manager** is an industrial partnership between airlines, airports and air navigation service providers to coordinate the synchronised deployment of SESAR solutions within the Pilot Common Project, delivering significant benefits to airspace users, the environment and the EU citizens.

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The European Investment Project Portal (EIPP) is the EU’s online matchmaking Portal, connecting EU project promoters with investors worldwide. The EIPP is a multilingual online platform providing greater visibility and transparency about EU investment projects and opportunities. Launched in June 2016 by the European Commission, the EIPP is a key component of the Investment Plan for Europe, which aims to mobilise the financing of investment projects and create jobs across the EU:

- User-friendly one-stop-shop offering a wide range of EU quality investment projects
- Access to projects from all major sectors of the EU economy, from every EU country
- Targeted results with a detailed search tool
- Direct contact in one click
- Tailored notifications, based on chosen interests
- Investment speed-dating via EIPP pitching/matchmaking events

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The European Commission launched an implementation support program, run by a deployment management team that was set up in January 2015.

Objectives
To ensure an efficient, synchronised and timely implementation of ERTMS along the core network corridors and ensure consistency with other parts of the network.

The ERTMS Deployment Management Team, composed of the contracting firms INECO and EY, is supporting the monitoring of ERTMS Deployment advising the Commission and stakeholders with technical and economic guidance.

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0013-W, 2015-UK-TM-0047-S
The Shift2Rail JU contributes to smart & sustainable growth by developing innovative solutions to create the railway systems of the future. The JU addresses evolving needs of EU citizens and targets lifecycle cost and efficiency of rail systems to bring about the most high-performing, time driven, digital and competitive passenger & freight transport mode for Europe.

The Research and Innovation (R&I) Programme focuses on the demonstration of activities and the dissemination of relevant results for market uptake, promoting the competitiveness of the European rail industry while creating a multiplier effect of EU funds invested in research and innovation.

The Shift2Rail’s R&I Programme delivers the innovative solutions to ensure a major rail system transformation and contribute to the creation of a sustainable multimodal European Transport System.

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Following the entry into force of the technical pillar of the fourth EU railway package (Regulation (EU) 2106/792), the European Union Agency for Railways replaces and succeeds the European Railway Agency.

Our mission is: "Making the railway system work better for society".

To achieve this, the Agency contributes, on technical matters, to the implementation of the European Union legislation aiming at improving the competitive position of the railway sector by:

• enhancing the level of interoperability of rail systems;
• developing a common approach to safety on the European railway system;
• contributing to the creation of a Single European Railway Area without frontiers and guaranteeing a high level of safety.

In addition the Agency will become from 2019 onwards the European authority with the responsibility to:

• issue single EU-wide safety certificates to railway undertakings;
• issue vehicle authorisations for operation in more than one country;
• grant pre-approval for European rail traffic management system (ERTMS) infrastructure.

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Transport Information Management System (TIMS) for the TEN-T in Turkey

Transport Information Management System (TIMS) is a GIS based information system, which is established by collecting the relevant transport data in line with the parameters defined in the OMC Glossary of the European Commission.

TIMS can store, map, analyse, report and submit the transport data of TEN-T in Turkey to the European Union and assist decision makers for future investments.

There are 8 modules in the system:

1. Maps
2. Questionnaires
3. Submission to TENtec
4. Transport Analysis
5. Socioeconomic Analysis
6. Accessibility and Traffic Analysis
7. Corridor Analysis
8. Project Prioritisation

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SEESARI
South East Europe Strategic Alliance for Rail Innovation

SEESARI is an initiative for supporting rail and transport development in South East Europe with focusing on railway research, development and innovation.

The main goals of the initiative are clustering of interested stakeholders and further identifying and launching the innovative solutions and projects that would support the development of railways in South East Europe, as well as its contribution to the wider European railway system.

The main members (currently 50) and stakeholders are railway companies, railway and transport associations, universities, institutes, financial institutions and other interested organisations.

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Elpa specialises in RFN-Rail Friction Noise and Wear Out reduction at infrastructure and rolling stock of railways, tramways and metros with usage of patented devices and CHFC materials with non-slip and anti-noise characteristics.

Main products:
- BREMEX ANNSYS anti-noise systems for rail brakes at hump yards
- CL-E1 application systems for rails, especially in curves (wayside and underground)
- DRYproANNSYS on-board application systems for wheel flanges
- Special environmentally friendly composite materials (CHFC) efficient against:
  - rail/wheel and wheel/rail brake generated noise (squealing and rolling noise), caused by friction between metal surfaces
  - wear out of rails, wheel flanges, rail brakes and check rails
  - GCC (gauge corner cracking)
  - RCF (rolling contact fatigue)
  - sinus line (corrugation)
  - negative vibration effects

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The joint e-Mobility stand will show the progress of Electro mobility in Europe. 10 CEF co-funded projects will showcase the ongoing deployments of Fast Chargers, Ultra-Chargers and Battery storage systems along TEN-T Core corridors and urban nodes across Europe, including Nordics, Western Europe, and Cohesion countries. The beneficiaries of the projects are Europe’s leading energy companies, gas & oil companies, car manufacturers, regional authorities, municipalities, railways companies, etc. A large video wall will showcase the progress of all the projects, and each individual project will include a "kiosk" with own project maps and an own screen. The booth will include hardware (fast and ultra chargers) and electric vehicles of a variety of brands that are involved in the projects.

Join the E-Volution!

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The GREAT project is aiming to ensure the introduction of alternative fuel infrastructure and vehicles, the decarbonisation of the transport fleet and the transition away from fossil fuels. This project contributes to making the transport corridor between Hamburg and Oslo/Stockholm one of the first to meet the EU’s directive for alternative fuels. The result is a reliable infrastructure for alternative fuels and new possibilities for sustainable transports along the corridor. The unique combination of private providers of alternative fuels, vehicle manufacturers and regional public authorities working together, creates opportunities for new and dynamic developments. The project is designed to implement the following:

- The installation of 3 CNG/LNG stations in Sweden and of 70 triple standard quick chargers over more than 900 km of the Scandinavian-Mediterranean Corridor and the core road network (in Germany, Sweden and Denmark).
- The creation of two studies providing business models and recommendations for policy measures, as well as public affairs activities to ensure these policy measures’ implementation on national and EU levels.
- The establishment of communication and dissemination aimed at the market and end users to change attitudes and increase usage of more sustainable fuels.

Project number:

- GREAT - 2014-EU-TM-0477-S
- UNIT-E - 2014-EU-TM-0579-M
- Ultra-E - 2015-EU-TM-0367-S
- EVA+ - 2015-EU-TM-0415-S
- 2016-EU-TM-0121-W
- NEXT-E - 2016-EU-TMC-0350-S
- Urban-E - 2016-EU-TMC-0351-S
- EUROPE-E - 2017-DE-TM-0064-W
- NCE Advanced EvNet - 2016-SK-TMC-0317-S
- FAST-E - 2014-EU-TM-0136-S
- High speed electric mobility across Europe - 2016-EU-TM-0121-W
The first specific objective consists in setting up the hardware infrastructure of the e-corridor. This objective will be achieved through the deployment of 69 multi-standard fast chargers and 4 multi-standard ultra-fast chargers. These chargers will be deployed at 31 locations. These locations are defined as charging stations.

The multi-standard fast chargers will have the following characteristics: 50 kW DC (CCS and CHAdeMO) and 22 kW AC (type2).

The ultra-fast chargers will have the following characteristics: minimum 150 kW DC having at least a CCS cable with upgradeable modular options to also adapt with CHAdeMO when available. The stations will be located along the abovementioned Core Network Corridors (Mediterranean, Rhine-Danube and the Orient East/Med and other sections of the core network) in Croatia and Romania. The stations will be publicly accessible 24/7 and on the spot payment and interoperability and roaming will be ensured.

The first specific objective was complied. The procurement procedures and the subsequent deployments of the first batches in Romania and Croatia have been successfully concluded as planned per the Grant Agreement.

The second specific objective is to interconnect the charging stations as a network via interoperability at national level, cross-border level and at EU level. This objective will be achieved through the installation of advanced IT-solutions, ensuring the localisation of the charging station.

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Several studies have identified that the appropriate charging network was the precondition for e-mobility expansion. The goal of the projects is to remove this key barrier by deploying 108 fast charging stations on the TEN-T core network in the Czech Republic. Thanks to the usage of multi standard fast charging stations and implementation of roaming and ICT backend, the interoperability and compatibility with existing networks in the EU will be secured. The backbone network shall provide coverage not only within the Czech Republic, but also linkage to other Member states.

The integration of energy storage and RES into the charging infrastructure as an intelligent and sustainable way of grid connection management will be tested. The projects will focus on finding the customer oriented solution and defining optimal plans for e-mobility development in selected regions in the Czech Republic.

The projects fully comply with national and EU legislation and contribute to the targets set by the EU (GHG reduction, energy efficiency, RES in transport, energy security).

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The goal of the INCH project was to develop a charging system for electric vehicles that controls the charging power with consideration to users’ preferences and local energy production. In this way the users’ needs are satisfied while at the same time the security of internal networks’ operations is improved and the costs related to charging are minimised.

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The Action NCE-AdvancedEvNet is implemented in Slovakia and Poland along the Baltic-Adriatic, North Sea-Baltic and Rhine-Danube Core Network Corridors. It will deploy ultra-fast chargers of up to 350kW (10 in PL, 3 in SK), fast charging stations of 40-50kW (60 in PL) focusing on urban nodes, slow charging stations (7-22kW) focusing on intermodal spots (50 in PL, 20 in SK) and 10 battery assisted charging systems to cover peak demand (in PL).

The Action NCE-FastEvNet, a study with integrated pilot, is implemented in Slovakia and Poland along the North Sea-Baltic, Baltic-Adriatic, Orient/East-Med and Rhine-Danube Core Network Corridors. It will deploy 10 multi-standard fast charging stations for electric vehicles (EV) in Slovakia and 75 in Poland, three of them including battery storage to cover peak demand.

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CEDR is the Road Directors’ platform for cooperation and promotion of improvements to the road system and its infrastructure. Members represent their respective national road authorities and provide support and advice on decisions concerning the road transport system that are taken at national or international level. Our activities are coordinated in five focus areas reflecting the scope of road authority interests;  
1. digitisation and innovation;  
2. environment and resilience,  
3. safety, operations, mobility and performance,  
4. resources and asset management, and  
5. regulations and harmonisation.  
CEDR stand is a true symbiosis of CEDR & EU funded research projects; it showcases key projects and initiatives from these five areas with a cluster of different projects including CEF, H2020 projects as well as CEDR’s own research programme and deployment projects.

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InterCor (Interoperable Corridors) is a European project which aims to connect the C-ITS corridor initiatives of the Netherlands C-ITS Corridor (Netherlands-Germany-Austria), the French corridor defined in the SCOOP@F project, and the United Kingdom and Belgian C-ITS initiatives.

The InterCor project plans to achieve a sustainable network of C-ITS corridors providing continuity and serving as a testbed for Day-One C-ITS service development and beyond.

InterCor is a 3-year project of 30 million Euros co-financed by the European Union under the Connecting Europe Facility. The project aims to enable vehicles and related road infrastructure to communicate data through cellular, ITS-G5 or a combination of both networks on road corridors running through the Netherlands, Belgium, the UK and France. The overall goal is to achieve safer, more efficient and more convenient mobility of people and goods.

AEOLIX (Architecture for EurOpean Logistics Information eXchange) is a Horizon 2020 project aiming to overcome today’s fragmentation and lack of connectivity around ICT-based systems for decision making in logistics.

AEOLIX is developing a cloud-based, multi-enterprise “many-to-many” network which captures and streams data in real-time, and automatically translates “data format” from different IT systems giving companies the ability to rapidly respond to issues through a customised dashboard.

The AEOLIX network represents a critical way forward of supply chain visibility and interoperability through decentralised information sharing. AEOLIX cloud services provide connectivity to multi-actor data and in-house or cloud-based applications, processes and services, thus enhancing collaboration and interoperability, potentially across the entire transport and logistics sector.

Eleven living labs covering all the nine TEN-T corridors are testing and validating the benefits of the AEOLIX platform applied to their specific logistics related business issues.

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The CONCORDA (Connected Corridor for Driving Automation) project contributes to the preparation of European motorways for automated driving and high density truck platooning. The main objective of the project is to assess the performance of hybrid communication systems, combining 802.11p and LTE connectivity, under real traffic situations.

CONCORDA paves the way for solutions based on the combination of connectivity and infrastructure that will help build the vehicle’s environmental perception model. Moreover, the project aims to improve the accuracy and integrity of localisation services.

The CONCORDA project will start based on common application specifications that will be updated during the project in an interactive manner (during the pilot operation according to evaluations and lessons learned) and in cooperation with C-Roads. New standards, or evolutions of existing standards, will be proposed as a result of this process.

TN-ITS GO is a Programme Support Action (PSA) for the implementation and facilitation of seamless spatial data exchange which are essential for the deployment of ITS applications. The duration of the action is spread over 48 months in order to give time to six new Member States to plan and implement carefully their ITS spatial data supply chain strategy right from the source (police decision, road maintenance,...) all the way to the open TN-ITS interface and into the map database of the end user. The Action will capitalise on the pre-existing knowledge and expertise of the TN-ITS initiative which has already resulted in operational services in Sweden, Norway, Finland and Flanders. Other piloting efforts are ongoing in France, UK, and Ireland but not operationalised yet. Part of this Action invests in these past efforts in order to further consolidate the operational services covering increasing part of the TEN-T with the most relevant ITS attributes and increased quality. Also, the most advanced services will now work on the feedback loop from map makers to road operators which has not been tested so far.
The C-Roads Platform is a joint initiative of European Member States and road operators for testing and implementing C-ITS services in light of cross-border harmonisation and interoperability.

Through the C-Roads Platform, authorities and road operators join together to harmonise the deployment activities of cooperative intelligent transport systems (C-ITS) across Europe.

The goal is to achieve the deployment of interoperable cross-border C-ITS services for road users.

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Safe and Secure Parking Areas - Best Practices

Come to see projects co-funded by the CEF programme that gather lessons learned and best practices on secure parking infrastructure in Northern, Southern and Eastern Europe (Belgium, Spain and Romania).

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The Single Window Initiative Estonia is a cluster/network taking Estonia and Europe firmly towards digital transport & logistics solutions, digital supply chains and application of Single Window principles.

The main aim of the initiative is to promote and encourage the digital shift in transport-related information flow for the benefit of all market participants. For reaching the aim, the initiative works consistently on applied research on feasibility of such digitalisation as well as moderates the exchange of best practices while developing the digital solutions and prototypes.

The initiative promotes the idea that joint action in partnership is an only way to find best solutions and solve bottlenecks hindering digitalisation in regard to transport and logistics, therefore we are also getting involved in negotiations, networking and working on policy suggestions.

The cooperation partners for the initiative are of wide range—from small to large cargo owners, freight forwarders and transport businesses, infrastructure owners and service providers, ICT developers, research centres, trade and professional associations as well as public sector organisations, all of them eager to gain competitiveness and business savings through cooperation in clever solutions.

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ITS Croatia organises performance of Croatian institutions (government, public, private) and their innovative projects in the area of Intelligent Transport Systems applications.

**Intelligent Cooperative Sensing for Improved traffic efficiency**

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C-MobILE Accelerating C-ITS Mobility Innovation and deployment in Europe

C-MobILE aims to stimulate large-scale and interoperable C-ITS deployments across Europe.

C-ITS (bundling) services will be demonstrated on eight pilot sites: Barcelona (ES), Bilbao (ES), Bordeaux (FR), Copenhagen (DK), Newcastle (UK), North Brabant (Helmond, Eindhoven) (NL), Thessaloniki (EL) and Vigo (ES).

The impacts (safety, traffic/energy efficiency, environment friendliness, comfort, and acceptance) will be evaluated, by taking into account the developed business models.

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AutoMate - Automation as accepted and trusted TeamMate to enhance traffic safety and efficiency

The vision of AutoMate is a novel driver-automation interaction and cooperation concept to ensure that highly automated driving systems will reach their full potential and can be commercially exploited.

This concept is based on viewing and designing the automation as the driver’s transparent and comprehensible cooperative companion or teammate. This kind of system can enhance safety and comfort by using the strength of both the automation and the human driver in a dynamic way.

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In 2016 the project of Integrated Public Transport in Slovenia, led by Ministry of Infrastructure, successfully introduced integrated public passenger transportation system (IJPP), which integrates all public transportation operators in Slovenia to provide a unified ticketing and fare collection system.

Project is continuing its successful way as in 2017 Ministry of Infrastructure, together with DRI Investment Management Ltd., introduced project of establishment of Authority of Public Transport.

The purpose of its constituting is to steer, promote and harmonise the development and operation of the Slovenian Public Transport system, as well as ensure support for the territory in attaining the set of sustainable mobility targets. Authority of Public Transport’s full operations and integrations in Slovenia is expected in 2020.

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ELAPHE demonstrates the ultimate powertrain platform for the next generation of autonomous and connected mobility.

Elaphe Propulsion Technologies is one of the top European innovators in mobility technologies addressing global challenges through a completely new approach. As a leading developer of modular in-wheel powertrain technologies, Elaphe is radically changing the way electric vehicles can be designed and used through the introduction of the in-wheel propulsion platform - the ultimate powertrain for the next generation of electric mobility applications, such as new mobility concepts, autonomous and connected applications. Through cutting edge R&D supported also by the European Commission - such as the PRODRIVE project - Elaphe is solving key needs of automotive OEMs who are looking for already industrialised in-wheel motor solutions for their new vehicle concepts.

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The mission of the FLOW (Furthing Less Congestion by Creating Opportunities For More Walking and Cycling) project is to put walking and cycling on an equal footing with motorised modes. To achieve this, a methodology has been developed to assess the effectiveness of walking and cycling measures in addressing urban road congestion.

The main objective of RAGTIME (Risk based approaches for asset integrity multimodal transport infrastructure management) is to develop, demonstrate and validate an innovative management approach and to lay out a whole system planning software platform, based on standard multiscale data models able to facilitate a holistic management throughout the entire lifecycle of the infrastructure. It also aims to provide an integrated view of risk based approach, implementing risk based models, resilient concepts and mitigation actions, with specific reference to climate change related threats perspective and monitored with smart systems, in order to optimise ROI, management, guarantee LOS and improve resilience through maintaining the service.

The ERA-NET Plus Infravation 2014 Call has been initiated as a pooled research fund to develop transport infrastructure innovations which address the challenges identified in the European Commission’s White Paper on Transport: Smart, Green and Integrated transport.

The following nine ERA-NET Plus Infravation innovation projects all launched in the third quarter of 2015:

- **ALTERPAVE** - USE OF END-OF-LIFE MATERIALS, WASTE AND ALTERNATIVE BINDERS AS USEFUL RAW MATERIALS FOR PAVEMENTS CONSTRUCTION AND REHABILITATION
- **BIOREPAVATION** - INNOVATION IN BIO-RECYCLING OF OLD ASPHALT PAVEMENTS
- **ECLIPS** - ENHANCING CONCRETE LIFE IN INFRASTRUCTURE THROUGH PHASE-CHANGE SYSTEMS
- **FASSTBRIDGE** - FAST AND EFFECTIVE SOLUTION FOR STEEL BRIDGES LIFE- TIME EXTENSION
- **HEALROAD** - INDUCTION HEATING ASPHALT MIXES TO INCREASE ROAD DURABILITY AND REDUCE MAINTENANCE COSTS AND DISRUPTIONS
- **SEACON** - SUSTAINABLE CONCRETE USING SEAWATER, SALT-CONTAMINATED AGGREGATES, AND NON-CORROSIVE REINFORCEMENT
- **SEEBRIDGE** - AUTOMATED COMPILATION OF SEMANTICALLY RICH BIM MODELS OF BRIDGES
- **SHAPE** - PREDICTING STRENGTH CHANGES IN BRIDGES FROM FREQUENCY DATA SAFETY, HAZARD, AND POLY-HARMONIC EVALUATION
- **SUREBRIDGE** - SUSTAINABLE REFURBISHMENT OF EXISTING BRIDGES
AEROBI (AERial RObotic System for In-Depth Bridge Inspection by Contact) aims at the development and validation of the prototype of an innovative, intelligent, aerial robotic system with a specialised multi-joint arm for the in-depth structural inspection of reinforced concrete bridges, speedily and reliably, without interfering with the traffic and endangering the inspectors. AEROBI has the potential to be commercialised in the short term.

The mission of CoEXist (AV-Ready’ transport models and road infrastructure for the coexistence of automated and conventional vehicles) is to systematically increase the capacity of road authorities and other urban mobility stakeholders to get ready for the transition towards a shared road network with an increasing number of automated vehicles, using the same road network as conventional vehicles.

CoEXist aims at enabling mobility stakeholders to get “AV-ready” (Automated Vehicles-ready). To achieve its objective, CoEXist develops a specific framework and both microscopic and macroscopic traffic models that take the introduction of automated vehicles into account.

SENSKIN (SENsing SKIN’ for Monitoring-Based Maintenance of the Transport Infrastructure) offers new maintenance techniques that will enhance bridge performance by improving safety, service continuity in case of disruptive events, capacity, resiliency to changes in traffic demand and climate, cost-effectiveness, sustainability and reliability.

The SAFE-10-T (Safety of Transport Infrastructure on the TEN-T Network) project will develop a Safety Framework to ensure high safety performance while allowing longer life-cycles for critical infrastructure across the road, rail and inland waterway modes. Moving from considering critical infrastructure such as bridges, tunnels and earthworks as inert objects to being intelligent (self-learning objects), the SAFE-10-T project will provide a means of virtually eradicating sudden failures.

The SKILLFUL (Skills and competences development of future transportation professionals at all levels) project aims:

1. To critically review the existing, emerging and future knowledge and skills requirements of workers at all levels in the transportation sector, with emphasis on competences required by important game changers and paradigm shifters (such as electrification and greening of transport, automation, MaaS, etc.);
2. To structure the key specifications and components of the curricula and training courses that will be needed to meet these competence requirements optimally, with emphasis on multidisciplinary education and training programmes;
3. To identify and propose new business roles in the education and training chain, in particular those of “knowledge aggregator”, “training certifier” and “training promoter”, in order to achieve European wide competence development and take-up in a sustainable way.
HERE Technologies: enabling road-safety innovations through data collaboration

The **Open Location Platform**, powered by **HERE**, combines a wealth of HERE-owned sources, partner sources and third-party data sources into one comprehensive location-centric data repository.

In the era when no market player can achieve data scale alone, this collaborative and highly secure platform for location intelligence enables governments and businesses to create exciting new data-driven products.

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Visit booth #33 and gain a better understanding of how you can benefit from the HERE Open Location Platform, as well as experience the scalability of the platform through the live demo of actual services we build on top of it.

The BMW Group is presenting its vision on how to connect European citizens on the move and thereby supporting several EU policy objectives ranging from sustainable mobility to free flow of data. In 2013 the BMW Group began deploying C-ITS (Cooperative intelligent transport systems) services to make traffic safer and more efficient. With the ongoing European rollout of BMW ConnectedDrive Services, all European citizens will have access from 2019 onwards. BMW drivers receive a wide variety of traffic information, such as hazard warnings, speed limits, accident warnings, wrong-way driver alerts, on- and off-street parking information and far more besides.

This will be accomplished by an EU wide role out of BMW ConnectedDrive service and the use of cellular mobile networks and cellular vehicle to everything communication (C-V2X). Moreover, the BMW Group is enhancing its customers’ ability to exchange their personal vehicle data with third parties and to enjoy added-value services by using BMW CarData.

The European rollout of ChargeNow provides hassle-free electric mobility and easy access to the largest crossborder charging network.
FS Links is Virgin Hyperloop One partner in the Nordics and we are developing a Hyperloop connection circumventing the Baltic sea.

FS Links presented the first Hyperloop Business case in July 2016 (http://www.fsl.ax/showcase.html).

Since then our scope has expanded but a first step is to set up a Proof of operations facility including a test track on the future commercial route between Finland and Sweden.

Together with our partners Ramböll and Obrascón Huarte Lain we would like to present the fifth mode of transport and invite infrastructure partners to par take in the development of an European hyperloop network.

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Can You Imagine a Fixed Link Between Helsinki and Stockholm?

We can (and You should be able to make the trip in half an hour or less)

Conclusions from The World’s First Hyperloop Business Case.
Port-Liner—“Zero emission” ships for inland waterways

The project is about all-electric container ships for services between main ports like Rotterdam and Antwerp and their hinterland destinations, up to Duisburg.

The ships will be equipped with state-of-the-art battery technology. The batteries will be containerised.

Four 20ft battery containers give the ships an autonomy of up to 23 hours. The first ships will be launched towards the end of 2018.

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E-Ferry – Connecting Blue and Green

E-ferry addresses the urgent need for reducing European CO2 emissions and air pollution from waterborne transportation by demonstrating the feasibility of a 100% electrically powered, emission free, medium sized ferry for passengers and cars, trucks and cargo relevant to island communities, coastal zones and inland waterways.

The vessel will be based on a newly developed, energy efficient design concept and demonstrated in full-scale operation on longer distances than previously seen (> 5 Nm). E-ferry will have the largest battery-pack ever installed in a ferry with a record breaking high charging power capacity of up to 4 MW allowing short port stays.

The innovative novelties of the design concept and its expected impacts addresses flaws in current state-of-the-art by demonstrating a concept based on optimised hull-shape, lightweight equipment and carbon composite materials, ensuring reduced weight by up to 60% on parts replaced by composite elements.

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Greenrail: innovative and sustainable railway sleepers – the greener solution for railway sector

Greenrail: innovative and eco-sustainable railway sleeper, consisting of an inner core in pre-stressed concrete, and an outer shell obtained from rubber from end-of-life tires and recycled plastics.

Such composition allows it to reuse up to 35 tonnes of these urban waste materials per each km of railway, and to ensure technical and economic improvements, such as lower vibration and noise levels, increased lifespan, less maintenance needs and lower maintenance costs.

Greenrail is currently involved in R&D activities for smart products:

- Greenrail Solar: Greenrail sleeper with a PV panel for solar energy harvesting
- Greenrail LinkBox: Greenrail Solar using the harvested energy to feed systems for communication and safety data transmission
- Greenrail Piezo: Greenrail sleeper producing energy during train’s passing

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We will showcase:

• Urban nodes improved integrating long-distance and urban transport

• Large scale urban Mobility-Energy node (for example: Amsterdam South-East whole neighbourhood) integrating zero emission mobility and clean energy services, such as:
  
  • Connection between national road-infrastructure, city modality changes and innovative energy services
  • Fast amount of renewable both locally (sun) and neighbourhood (wind) availability
  • Smart renewable energy storage (in 2nd Life battery system)
  • Power parking (EVs are smart charged and V2G services deployed)
  • Largest EV charging station in EU
  • Electricity peak-shaving for events in stadium
  • Backup power for the neighbourhood
  • Clear connection Electric Vehicles – Urban public transport
  • Integration of breaking energy from train
  • Innovative ‘Transport 4 Energy Services’
  • Last Mile solutions
  • Mobility as a service

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Tensar is a world-leading manufacturer and provider of subgrade stabilisation and soil reinforcement solutions to overcome ground engineering problems in construction and civil engineering. Tensar’s innovative and high-performance geo grids offer alternative approaches to traditional methods and have benefitted thousands of roads, railways and other infrastructure projects around the world.

With an expert technical services team and an international network of distribution partners, Tensar also provides professional support to projects, from product selection and engineering design, to on-site construction guidance.

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The Synergy in Motion stand represents projects and initiatives that focus on sectorial integration of transport, energy and industry to tackle climate change challenges and deploy new, innovative business models.

E-Mobility, high power charging combined with local battery storage, production of green Hydrogen from renewable energy for transport and industry, are the topics addressed by the cooperative projects.

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The European Commission has identified fuel cell electric vehicles (FCEVs) and the associated refuelling infrastructure among the key technologies needed for Europe to meet its ambitious energy security objectives and air quality targets by 2040.

Since the first demonstration and funding programmes, FCEV and hydrogen refuelling technology have progressed significantly in road, rail and maritime applications. However, a number of market barriers to the widespread introduction of the technology have persisted, which limits the penetration of the technology in European markets.

Through CEF projects including EAS-HyMOB, H2Nodes, MEHRLIN and Nordic Hydrogen Corridor, as well as FCH JU Horizon 2020 projects including JIVE, Hydrogen Mobility Europe, and REVIVE progress is being made to overcome these barriers and roll out a Europe-wide hydrogen refuelling network.

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EAS-HyMob – EasyAccess to Hydrogen Mobility

Hydrogen mobility in real-life: studying, optimising and testing hydrogen mobility competitiveness conditions in transports with an innovative and customer-oriented offerings relying on a regional scale experiment over 2016-2018.

A phased deployment of 15 cost-effective hydrogen refuelling stations (HRS) does service captive fleets of hydrogen fuel cell electric vehicles in the French region of Normandy. This is being done in partnership with local authorities, communities, enterprises and users.

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At this occasion, all members of the RFC Network are happy to invite you to join us at our stand for:

- Open discussions about the rail freight market
- Presentation of the harmonised RNE IT tools (e.g. Customer Information Platform (CIP)) supporting the core processes of RFCs
- A special event on Thursday 26th April 2017 from 13:30-14:30

The Regulation (EU) No. 913/2010 concerning a European rail network for competitive freight became effective 9 November 2010. This Regulation later amended by Regulation (EU) No. 1316/2013 of 11 December, required Member States to establish international market-oriented Rail Freight Corridors (RFCs) in order to meet three main challenges:

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www.corridor-rhine-alpine.eu
www.rfc-northsea-med.eu
www.scanmedfreight.eu
www.atlantic-corridor.eu
www.rfc5.eu
www.railfreightcorridor6.eu
www.rfc7.eu
www.rfc-northsea-baltic.eu
www.rfc-czech-slovak.eu
www.rne.eu
1. Strengthening cooperation between Infrastructures Managers (IMs)/Allocation Bodies (ABs) on key aspects such as the allocation of paths

2. Finding the right balance between freight and passenger traffic along RFCs, giving adequate capacity for freight in line with market needs and ensuring that common punctuality targets for freight trains are met

3. Promoting Intermodality between rail and other transport modes by integrating terminals into the corridor management process

Since traffic does not usually start and end on one RFC exclusively, efficient and harmonised interfaces to the existing processes and tools of individual IMs/ABs participating in RFCs are needed. Here RNE provides a coordination platform for RFCs to jointly develop harmonised solutions.
Training and test facilities are more and more frequently required for the continuously increasing use of ETCS systems worldwide. Such facilities allow operational situations and functions/data to be tested under conditions which are as close as possible to real-life conditions. In such tests, the train runs with real system data, which is used to simulate a wide range of different operational situations. For this purpose, the ETCS system has to be embedded in the system environment (system levels) just like in the real-life system.

Within and between these system levels, the functions which are required for complete operational sequences are performed. All in all, the training and test system is based on the system levels’ existing product systems and enables real scenarios to be run in real time by means of 3D visualisation with a driver’s console. At the same time, the original DMI provides the same information as on an ETCS-controlled vehicle.

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Construction of the second tunnel tube for the Karawanks road tunnel on the cross-border section Austria-Slovenia

The exhibition stand will show the largest cross-border infrastructure project between Slovenia and Austria - the design and construction of the second tunnel tube of the Karawanks road tunnel. This project aims at reducing the tunnel safety risk in compliance with the EU Road Tunnel Safety Directive. For the design of the tunnel both parties use an innovative design method based on a Building Information Model (BIM) which we would like to showcase at the exhibition. Visitors could have a look at the tunnel, its safety installations, and its facilities at the front portal area in a 3D visualisation video.

Moreover, ASFINAG and DARS both take part in “CROCODILE” a multinational ITS project on traffic information and data exchange. DARS and ASFINAG have a very close cooperation in this project which will also be presented.

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The Fehmarnbelt fixed link is part of establishing an efficient transport system across the Scandinavian – Mediterranean Core Network Corridor. The Fehmarnbelt fixed link will be the world’s longest immersed tunnel for road and rail stretching 18 km across the Fehmarn Strait from Rødbyhavn in Denmark to the German island of Fehmarn. Construction of the tunnel is expected to begin in 2020 and to be finished in 2028. Construction of the Danish railway landworks between Ringsted and Rødby is already underway. The Fehmarnbelt fixed link and new rail facilities will result in a significant reduction of the travel time between Copenhagen and Hamburg. It will enhance accessibility to the railway transport leading to a transfer of freight and passengers from road to rail.

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Malpensa Airport is strategically located on the Rhine-Alpine Corridor in Italy’s Lombardy region northwest of Milan.

MXP North rail access is a 2-phase greenfield project connecting two airport terminals (Phase I) and the extension of the railway line from T2 to north direction (Phase II). These two important steps will permit Milan Malpensa to become the hub of an extended railway network which guarantees access to Northern Italy and to the rest of Europe.

Phase I (Action 2012-IT-24071-P) has been completed in December 2016 and connection between the two Terminal is now fully operational. Nine months after the opening, 2.3 mln pax had already used the rail link, a 28% increase from previous year.

Phase II (Action 2012-IT-24071-P) represents the last mile to connect Mxp airport to the relevant European infrastructure network. In the long term, the Action will increase the capacity, usability and competitiveness of the existing rail and air transport infrastructure. Furthermore, it encourages modal shift from road to rail and thereby improves sustainability.

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The new railway line Dresden – Prague is one of the most important railway projects in Central Europe linking Germany and the Czech Republic with a cross-border tunnel through the Ore Mountains (planned approximately 26 km long). It is a vital part of the Orient/East-Med Corridor of the Trans-European Transport Network, which connects the North and Baltic Sea ports and economic centres in Southeast Europe. The new railway line will reduce travel time for passenger transport between Dresden and Prague from currently more than 2 hours to less than 1 hour, increase capacity for freight transport, reduce noise and traffic pollution in the Elbe Valley and provide a flood-safe connection from Saxony to the Czech Republic.

The preliminary study, funded by the TEN-T Program, was finalised in 2015. It comprises preliminary planning services for the border crossing route section, as well as the continuation of the route to Prague. Currently, a feasibility study of this new connection is ongoing, as well as a site specific study covered by the Interreg programme. Czech – Saxon cooperation is newly being coordinated within EGTC PROUD association.

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Rail Baltica is the largest Baltic transport infrastructure project aiming to connect the Baltic states with the European railway ecosystem and eliminate the missing link along the TEN-T North Sea - Baltic Core Network Corridor. It will be a 1435mm gauge, double-track, electrified, ERTMS-equipped, mixed traffic railway line with a design speed of 240km/h together with a modern intermodal infrastructure for passenger and freight services. It will ensure environmentally sustainable and high-speed connectivity from Tallinn to the Lithuanian-Polish border and beyond. In 2018 Rail Baltica has entered its design phase.

RB Rail is a joint venture established by the three Baltic states to coordinate the implementation of the Rail Baltica project. In its work, the joint venture promotes the values of good governance, efficiency and transparency and the philosophy of Rail Baltica as an emerging new economic corridor strengthening the integration of the Baltic states in the European Single Market.

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Slovenian rail projects

At the event four railway infrastructure actions from Slovenia that are implemented with CEF grants are presented:

• Bottleneck rehabilitation in the area of Bivje on the Divača-Koper railway line.
• Upgrading of the railway line Poljčane-Slovenska Bistrica
• Upgrading of the railway line Zidani Most-Celje
• Deployment of ERTMS/ETCS on the Dobova-Zidani Most and Pragersko-Maribor-Šentilj railway lines

These actions are positioned on the Mediterranean and Baltic-Adriatic Corridor. The beneficiary is the Slovenian Ministry of Infrastructure and the implementing body is the Slovenian Infrastructure Agency.

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The ongoing CEF-projekt "Norrbotniabanan" initiates a detailed planning for the North Bothnia Line and more specifically investigations and railway plans for the section Umeå-Skellefteå which is the first construction phase of the North Bothnia Line.

The North Bothnia Line is a planned 270 km new Railway section between the City of Umeå and the City of Lulea in Northern Sweden. The North Bothnia Line is an important link in the Core Network of the TEN-T for the transport of goods from the ever growing raw materials industry in Northern Scandinavia. When in Place, the North Bothnia Line will comprise a reliable double track along the main line in Northern Sweden, thus ensuring robust and efficient mode of transport for goods and passengers.
The Danish Signalling Programme encompasses a complete replacement of the existing national signalling system with European Rail Traffic Management System (ERTMS) and CBTC-technology for the s-trains. One line is located on the Danish part of the Scandinavian-Mediterranean Core Network Corridor and have been awarded two CEF grants to fulfill the goal of interconnectivity and interoperability cross borders. One part of the project covers the trackside deployment of ERTMS Level 2, Baseline 3, incl. the implementation of GSM-R network on the Line (Copenhagen H) – Køge Nord – (Ringsted) in East Denmark. The other part of the project covers the retro fitment of 3 prototype trains as well as the serial retro fitment of 71 DSB IC3 trains, 12 DSB MQ trains and 7 Nordjyske Jernbaner’s Desiro trains. The goal is to increase interconnectivity across European boarders and to eliminate bottlenecks in rail transportation for both passenger traffic and freight. Another objective is to reduce the transportation time and update critical European infrastructure to comply efficiently with future demand.

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Implementation of TAF TSI at private railway undertakings

The CEF projects aim to implement the TAF TSI (Technical specification for interoperability relating to the telematics applications for freight subsystem of the rail system in the European Union) based on the Commission Regulation (EU) No 1305/2014 of 11 December 2014 to the private railway undertakings in the Czech Republic, Slovakia and Hungary.

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The NeTIRail concept is based on designing railway infrastructure and monitoring tailored to the needs of specific lines to ensure the most cost effective and sustainable solution for different line types and geographical locations.

The main scope has been to:

- Identify the appropriate existing technologies for different line types and climate
- Develop new technologies for cost effective transition zones, low cost electrification & measurement and monitoring technologies
- Optimise S&C maintenance
- Assess the societal and economic benefits of lesser used lines and assess the impact of the technologies developed
- Produce a GIS based decision support tool to aid asset managers in identifying the most appropriate technologies for their lines

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Planning of the new urban railway line S4

The S4 in the urban node Hamburg consists of three planning sections (PFA). The project focuses on the planning measures for the track planning sections II (PFA II) and III (PFA III) and includes the final design phases for the subsequently following constructional realisation of a new double track between Hamburg and Ahrensburg parallel to the old conventional railway track.

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ERFLS includes partners from The Netherlands, Germany and Italy to launch an innovative European Rail Freight Line System (ERFLS) in combined rail-freight traffic on the Rhine-Alpine Corridor. This Global Project is building up on the results of previous EU funded project CODE 24. The ERFLS System will connect the different regions along the Rhine-Alpine Corridor with regular rail freight line services in combined traffic through a system of "smart hubs" for freight transport. In order to make ERFLS operational, the Action is focused on the first steps. Several implementation studies will be carried related to infrastructure, terminals needs, interconnections, telematics standards and socio-economic impact analysis. These studies aim at a better understanding of the obstacles and at investigating how smart hub terminals can be best organised, built and interconnected along the Corridor. Connected is also the strategic planning of a network for the use of Liquified Natural Gas (bunkering & filling-stations) and an integrated development of nodes on the corridor (multimodal, Industrial park, landscaping en quality of life).
Multiple existing or projected elements of rail and road networks in the München area are part of the Scan-Med Corridor. The DUSS3-Terminal München-Riem is a multimodal* freight hub which processes traffic between northern and southern Europe. The DUSS-terminal has the second highest rail freight traffic volume on the Scan-Med Corridor, only the terminals in Hamburg process more goods. The road transport network includes the A8 between München and Rosenheim and the A93 between Rosenheim and the border in Kiefersfelden.

The rail transport network includes the routes München-Rosenheim and Rosenheim to the border. A number of rail infrastructure projects are planned on the Scan-Med Corridor.

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Austria
In Austria the transalpine section of the Scan-Med Corridor stretches from the German border at Kufstein, through the Wörgl area to the Innsbruck area and towards the Italian border at the Brenner Pass. Innsbruck is an important rail and road hub within the Austrian transport network and also has an airport. There is a road-rail terminal in Wörgl.

The Scan-Med Corridor includes the A12 between the border at Kufstein and Innsbruck, and the A13 between Innsbruck and the Brenner border crossing. It also includes the rail network between the border at Kufstein and Innsbruck, and the section from Innsbruck to the Brenner border crossing. A 40 km long section in the lower Inn Valley with the bypass tunnel in Innsbruck was already extended to four tracks. Further track upgrades and expansions – the Austrian section of the Brenner Base Tunnel in particular – are also part of the Scan-Med Corridor.

Italy
In Italy the transalpine section of the Scan-Med Corridor stretches from the Austrian border at the Brenner, to Bozen/Bolzano and to Trento and Verona. In this part of the section Verona is the most important rail, road and air hub. There is another airport in Bozen/Bolzano, for which the government of the Autonomous Province of Bozen-Südtirol recently approved a strategic development and business plans in November 2015. Four supraregional road and rail routes run through Verona into the rest of Italy and towards neighbouring states. The connections to France via Milano and to Slovenia via Venezia, are part of the Mediterranean Corridor of the TEN-T* core network. The Quadrante Europa southwest of Verona close to the airport has the third highest freight traffic volume on the Scan-Med Corridor, after the rail-road terminals in Hamburg and München.

The Scan-Med Corridor includes the A22 between the border and Verona and the rail network between Brenner/Brennero-Bozen/ Bolzano-Trento-Verona. Further track upgrades and expansions – the Italian section of the Brenner Base Tunnel in particular – are also part of the Scan-Med Corridor.
The new railway link Lyon-Turin, with the 57.5 km Mont Cenis base tunnel as its major component, is the main project of the whole TEN-T Mediterranean corridor. It is highly strategic because it is the main missing link in the corridor which aims at connecting south-western Europe with Central and Eastern European Countries. Failing this high-performance connection, transport relations would be hampered, especially for the trade between Spain, France and Italy and the trade between Spain, France and Italy and Central and Eastern Europe.

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EurekaRail and Wunderline

EurekaRail Connecting us: people, countries and economies

The Province of Limburg (The Netherlands), together with Ministry of Infrastructure and Water Management, and the Province of Noord-Brabant, are planning four high-speed (Intercity) connections between Germany and Belgium and The Netherlands. Every day tens of thousands of Dutch commuters cross the border to Germany and Belgium, as Belgian and German commuters come to the Netherlands.

They all come to work, to do business, to study or to seek recreation. Improving the travel by rail between these three countries will give a substantial boost to the economy and employment and improve the accessibility of education, knowledge, and culture. The connections will provide the missing links in the international rail network. Also the plan foresees pricing of travel to be harmonised, and buying tickets and getting travel information to be simple and efficient, unimpeded by the borders. Overcoming these barriers will stimulate travellers making the choice to travel by train when crossing the borders. Achieving these goals will enhance the quality of living, the business climate, and also contribute to a sustainable European transport system.

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Wunderline: Groningen-Bremen rail connection

Establishing a better connection between the Northern Netherlands and Northern Germany in order to boost economic development and the quality of life in both border regions: that is what the Wunderline project is all about. In order to realise this ambition, the Federal State of Lower Saxony, the Free Hanseatic City of Bremen, the Ministry of Infrastructure and Water Management, the Province of Groningen, DB Netz AG, ProRail, IHK Ostfriesland und Papenburg, AG-Ems, Groningen Seaports and Landkreis Leer, have all combined forces to improve the quality of the existing railway connection.

They have been conducting several studies with the aim to have the most optimal railway connection between the cities of Groningen and Bremen. By 2025 the border shall no longer form a barrier, while the train shall have become a logical alternative to cars. The ambition of the Wunderline is to reduce the travelling time from Groningen to Bremen and vice-versa to a little over two hours altogether. Furthermore, this all is to be achieved in an innovative as well as emission-free fashion. Shorter travelling time and more comfort will definitely attract more travellers. Not only the passengers themselves, but also the touristic, social, cultural and economic sectors of both Germany and the Netherlands shall benefit from these improvements.

In addition, the Wunderline forms the ‘missing link’ in the TEN-T network, the Trans European Transport Network of main railway connections in Europe.
Ireland’s unique geographical and economic position in Europe demands a coordinated effort to develop our ports, supporting infrastructure and hinterland connections. The Irish Maritime Development Office (IMDO) is coordinating a national plan for the delivery of a suite of projects that will transform the efficiency and connectivity of Ireland’s transport network nationally and internationally through our maritime links.

A multi-billion euro investment is planned for Ireland’s ports and the associated multimodal connections over the next ten years, with the decarbonisation and digitalisation agendas at the heart of these innovative projects.

Our world class ICT cluster is delivering new digital technologies for the shipping and logistics sectors. Ireland’s abundant renewable energy resources, along with the government’s commitments to sustainable development of our ocean economy through “Harnessing Our Ocean Wealth”, will play an important role in meeting our climate change targets.

CEF funding continues to play an important role in Ireland and recent infrastructure projects in our core ports network have also exemplified the use of new financial instruments. This innovative approach to blended finance will continue to attract the Investment for Ireland’s transport future.

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The Adriatic-Ionian intermodal corridor is amongst the most utilised ones within the wider area of the Eastern Mediterranean and is characterised by the extensive and long standing provision of Ro-Ro and Ro-Pax services.

The project **NAPA4CORE** is focused on supporting the development of ports of the North Adriatic Ports’ Association (NAPA) as efficient and sustainable entry and exit points for container and Ro-Ro traffics fully integrated with the land infrastructure.

The Adriatic Mos **Adri-Up** action, on the other hand, contributes to the development and the upgrading of the MoS corridors in the Eastern Mediterranean Area, specifically of the MoS link Trieste-Ancona-Igoumenitsa, by boosting the development of port infrastructures in the ports of Trieste, Ancona and Igoumenitsa and on the RRT of Fernetti and Igoumenitsa. It also supports facilities to fully integrate the MoS corridor in the freight supply chains, thus increasing European competitiveness and trade with South-East Mediterranean area, and contributing to the fulfillment of the TEN-T priorities.

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Considering the past growth of the container and Ro-Ro traffic of the NAPA ports, the increased episodes of maritime and land congestions, the pressure and interests expressed by shipping lines for having enlarged port capacities as well as the market potentials of the North Adriatic route, those actions will contribute to achieve an efficient and competitive transport infrastructure network in the North Adriatic area. They will support the realisation of projects of common interests with the view of preparing for expected future transport flows, enhancing interoperability of transport services as well as a more balanced development of the European transport network.

With the same aim of increasing the use of Motorways of the Sea services for transportation, the CarESMATIC Action stresses on the Mediterranean basin involving Luka Koper, terminal operator at the Port of Koper (Slovenia), Barcelona Port Authority with its terminal operator Autoterminal Barcelona, and the shipping line Neptune Lines.
GAINN4MOS: Sustainable LNG Operations for Ports and Shipping – Innovative Pilot Actions

GAINN4MOS aims to improve the Motorways of the Sea network in 6 Member States (Spain, France, Croatia, Italy, Portugal and Slovenia) by carrying out engineering studies on ship retrofitting and/or newbuildings, port LNG infrastructures, bunkering stations and a large set of pilot projects.

The GAINN4MOS consortium will elaborate 21 basic and detailed engineering studies on LNG bunkering stations and ship retrofitting and newbuilding, and will pilot an LNG ropax ship in Italy and LNG bunkering stations at the ports of La Spezia, Civitavecchia, Venezia, Nantes-St Nazaire and Fos-Marseille.

GAINN4SHIP INNOVATION aims to retrofit a large high-speed craft (HSC) ropax vessel so that it will be fuelled by a mix of LNG and diesel. The technological solutions that will be applied to the HSC ropax vessel will prove that using LNG as marine fuel for the HSC fleet is possible. The pilot will be the first case in the world of a retrofitted HSC ropax vessel that maintains all the features needed in the liner service where the ship is deployed whilst increasing service quality.

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GAINN4CORE contributes to the GAINN-IT Global Project by defining, prototyping and testing two of the three Italian LNG grids (the Thyrrenic-Ligurian and the Adriatic-Ionic) including the core ports of Genoa, La Spezia and Livorno (Thyrrenian-Ligurian grid), as well as Ravenna and Venice (Adriatic-Ionic grid).

GAINN4MED will contribute to the implementation of the AFI Directive and related Italian National Policy Framework ensuring a sustainable and efficient multi-modal transport system in the long run, with particular regard to LNG innovative solutions deployment along Core Corridors. The project focuses on road transport, being the most mature sector for LNG deployment, able to act as a driving force for the development of the whole national and European LNG supply chain.

GAINN4MID is part of the fourth and final deployment phase of the GAINN_IT Global Project promoted by the Italian Ministry of Transport and Infrastructure (MIT) for the implementation of the Italian national strategic Liquefied Natural Gas (LNG) network. Its general objective is to contribute to the implementation of the Directive 2014/94/EU and the related Italian National Plan, with particular regard to LNG innovative solutions deployment along the Scandinavian-Mediterranean, Baltic-Adriatic and Mediterranean Core Corridors. The project will implement a land LNG network through the provision of 4 new L-CNG refuelling points along the TEN-T Core Corridors, in the areas of Trieste, Pomezia (Rome), Taranto and Palermo.

GAINN4SEA, also part of GAINN_IT, is set in the context of EU Directive 2014/94/EU on the Deployment of Alternative Fuels Infrastructure (AFID) and the new Sulphur limits in EU waters for 2020 prescribed by Directive 2016/802/EU. It will contribute to the development of two out of three Italian LNG grids identified by the GAINN_IT initiative and the national AFID transposition (Law 257 of 16/12/2016), namely: the “Adriatic-Ionian” and the “Tyrrenian-Ligurian” Grids. The project will implement two new LNG-supply infrastructure facilities for the transport sector in the maritime ports of Venezia and Livorno.
WINMOS II
EU’s northernmost waters are covered by sea ice every winter, affecting smooth maritime transport. During normal and hard winters a high number of vessels are frequently delayed due to ice conditions. WINMOS II aims to ensure safe and reliable winter traffic in a cost-efficient way by further developing winter navigation system and ensuring sufficient icebreaking capacity.

STM Validation
By providing vessels with the ability to see each other’s planned routes, navigators get a more complete picture of how surrounding vessels will influence their onward voyage. Using this data, other services are able to produce valuable information and offer advice to vessels on their routes, such as recommendations to avoid congestion in areas with high traffic, avoidance of environmentally sensitive areas, and maritime safety information. The information exchange between vessel and port actors will improve planning and performance regarding arrivals, departures, and turnaround times.

FAMOS
The project encompasses 4 activities: hydrographic surveying and chart production, improving future navigation, surveying infrastructure, and data workflow from sounding to chart. The project focuses on cross-border knowledge exchange, taking into account that end users of the project’s results work in a truly international field, the shipping industry.

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Poseidon Med II is a comprehensive action towards the adoption of LNG as marine fuel, while positioning Greece as an international marine bunkering and distribution hub for LNG in South Eastern Europe.

Poseidon Med II aims at contributing to the transition of marine transportation in the Eastern Mediterranean to a low carbon future, by proposing a holistic approach of the LNG bunkering operations and promoting a competitive investment framework. It focuses on all relevant technical, regulatory, operational and financial parameters, in order to create an effective LNG supply chain.

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The study on the TEN-T Motorways of the Sea Horizontal Priority aims to outline the vision for the future of Motorways of the Sea (MoS) as the maritime dimension of the Trans-European Transport Network with the ultimate objective of ensuring a sustainable, integrated, safe and competitive Short Sea Shipping sector in the EU.

On the MoS Way is the official web portal for the initiative and the reference point for Motorways of the Sea themes: with updated news about industry and EU transport projects, social media channels, and an industry-specific blog, it is the digital multichannel platform to stay abreast with the main European initiatives related to MoS and door-to-door logistic chain, with a special attention to the European TEN-T Development Policy regarding Environmental protection; Maritime transport integration into the D2D Logistic chain; Safety, Security, Human Element and Traffic Management.

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Atlantic Blue Ports

Atlantis studied the conditions for the launch of new MOS services and lines between 3 ports of the Atlantic area: Brest, Leixoes and Liverpool. It has revealed the development potential of MOS and short sea shipping in this maritime basin. It has also underlined the main barrier: the competition with the road and the North-South corridor.

The follow-up could pass through coordinated and support action, involving all stakeholders – the Atlantic ports, European/national/regional authorities, actors of the transport and logistic chains – to boost the development of maritime transport and MOS in particular in the Atlantic Area. The stand will be the place to discuss "follow up" actions.

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DOOR2LNG – Upgrade of the maritime link integrated in the multimodal container transport routes

The DOOR2LNG project aims to support the implementation and ensure compliance of the Motorways of the Sea (MoS) links with the environmental regulation beyond the existing requirements. It also aims to increase the ports’ efficiency and capacity in container handling. The project will develop sea-based transport services, which are open and integrated in intra-European door-to-door logistic chains and which concentrate flows of freight on viable and high-quality short sea shipping links.

The project will environmentally upgrade two maritime links within the SECA-region (Sulphur Emission Control Area), which are running between the core ports of Helsinki, Rotterdam and Teesport. The environmental improvements of the project are firstly the environmental upgrade of four new LNG-fuelled vessels, going beyond the requirements of legislation, and secondly the development of port infrastructure by removing bottlenecks of inefficiency as well as investing in cargo handling capacity and infrastructure.

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Study conventional and renewable natural gas vehicle market in the whole Atlantic Corridor, and its interconnection with Rhine-Danube Corridor until Heddesheim, and the Spanish Mediterranean Corridor through new technologies and innovative solutions for: Supply logistic services, cleaner fuel composition, refuelling infrastructure, vehicle and components manufacturers, operational process. This study in the form of real-life trial aims to allow quick deployment of this alternative cleaner fuel by significantly bringing unit cost down while improving understanding of the client’s needs.

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Key to securing Europe’s energy supply is diversifying supply routes. This includes identifying and building new routes that unlock resources and decrease Europe’s dependence on a single supplier of natural gas and other energy resources. The GAS VESSEL project opens up new possibilities to exploit stranded, associated and flared gas where this is currently economically not viable and creates new cost-efficient gas transport solutions. This will be achieved with a novel offshore and onshore compressed natural gas (CNG) transportation system.

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The aim of the project is to develop a safe, efficient and integrated logistic chain for the supply of LNG as a fuel for the maritime sector in the Iberian Peninsula. It will foster the use of this alternative fuel not only in vessels, but also in the port environment. It is a public-private initiative as it has 21 public partners and 21 industrial partners involved. It regroups 25 activities: 14 studies and 11 studies with integrated pilots. The 14 studies are the “software” of the project. They allow identifying the standards needed for an adequate development of LNG as a fuel, defining training programmes required and accreditation processes, or to put forward a proposal for a National Policy Framework. The 11 studies with integrated pilots are known as the “hardware” of the project. They test real parts of the LNG logistic chain needed to supply bunker services of LNG. They include the adaptation of LNG Terminals to offer bunker and small-scale services, the development of logistic equipment (as bunker barges or multimodal transport), and the use of LNG within the port environment.

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Picasso (Preventing incidents and accidents by safer ships in the oceans) has as its overall goal to achieve a modern and developed maritime sector, with a capable and up-to-date workforce that enables the maritime sector to become greener, safer and more efficient and sustainable. This Motorways of the Sea Action addresses wider benefits by studying and testing effective ICT solutions but also addressing the human element.

The Picasso action has been structured in three building blocks or activities containing the development and implementation of eight technologies or knowledge solutions in order to enhance safety and security in their respective areas:

- On shore/on board safety and security
- Emergency simulations
- Human factor and training

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The Bothnia Bulk project upgrades the existing maritime link between a core port (Luleå, Sweden) and comprehensive ports (Raahe, Finland; Oxelösund, Sweden) in the Baltic Sea to comply with environmental regulations. The action promotes clean shipping and alternative fuels. The main objective is to have an energy-efficient, low-emission supply of dry bulk cargo available year-round in the peripheral region and to increase efficiency and reduce overall logistics costs. The action introduces additional environmental efforts of two new LNG-powered bulk carriers. Port efficiency, availability of on-shore power supply and LNG, as well as handling of cargo residues will be improved in the ports.

The project contributes to significant positive effects on environment by optimising raw material logistics as sustainably and environmentally friendly as possible. Total CO2 emissions per ton of transported cargo will be reduced by more than 50 % in comparison to present vessels in operation. Harmful air emissions (SOX, NOX, CO2 and PM) are reduced through using LNG as a fuel, and other additional energy efficiency measures on board the new vessels, as well as by increasing port efficiency in operation.

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The Baltic Ports Organisation is a regional ports organisation inspiring and supporting its members while cooperating pro-actively with relevant partners. Development over the past years has proceeded very quickly and at present BPO has entered new, challenging and exciting phases. Currently, the BPO includes more than 40 of the most significant ports in the nine countries surrounding the Baltic Sea, as well as seven friendship members. The BPO supports many modern and green projects such as: on-shore power supply (OPS), port reception facilities (PRFs) and small-scale LNG infrastructure development.

LNG in Baltic Sea Ports – the project is a response to the IMO’s decision to establish new sulphur content limits in marine fuels sailing in Emission Control Areas (covering the Baltic, the North Sea and the English Channel) from the 1st of January, 2015. Liquefied natural gas is perceived as one of key solutions to meet the new requirements.

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Green InfraPort - the main project idea is to address three core topics relevant to establishing a more sustainable port infrastructure. These are LNG infrastructure of filling stations and deployment in ships, availability of on shore power supply and upgrade of port reception facilities for passenger sewage. The outcomes of the project will be pre-investment /feasibility studies in ports and improved infrastructure. Activities will cover the planning and construction of the infrastructure. Due to this, the project will achieve more harmonised approaches towards green infrastructure in Baltic Sea ports of different size.

Go LNG – is focused on the development of demand and accessibility of LNG in the Baltic Sea Region (BSR). The project activities are aimed at the implementation of the EU Clean Fuel Strategy and the EU Directive on Deployment of Alternative Fuel Infrastructure in order to establish a strategic approach for the development of LNG infrastructure and promote its usage in the transport industry.

Subsequently, the project will establish a BSR LNG business cluster that will help the transport and marine technology industry be more competitive towards the Blue growth strategy, establishing the value chain for the BSR as a hub for clean shipping, competence and technology in LNG for transport. The aim of the cluster is to promote innovation and business projects, providing solutions for existing and upcoming users. It would also enhance everyday LNG usage i.e. LNG powered trucks and ships, LNG energy or LNG power for inland waterways.
Within the initiative a small-scale liquefaction plant for biogas shall be built. The biogas will be produced in biogas plants around Bremen and will be fed into the public natural gas grid. In Bremen the biogas will be withdrawn from the pipeline, purified and liquefied. After liquefaction, it will be stored in a vacuum-insulated storage tank before it is distributed by means of tank wagons and trucks to LNG fuelling stations.

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The overall objective of the action is to study LNG powered freight market on the Mediterranean Corridor (Barcelona-Ljubljana) through innovative approaches & technologies to allow quick deployment of Natural gas as alternative clean fuel in a smart and economical way.

chAMEleon investigates technological and operational options for carrying out improvements on LNG infrastructure, including vehicles, and LNG logistics service focused on bringing installation and operational costs down and making LNG an attractive commercial viable alternative fuel. The investigation will also address the business-client relation to address appropriately client’s needs in the different geographical areas.

During the Action 3 L-CNG refuelling stations will be deployed in 3 strategic points across the Mediterranean Corridor, in the Port of Barcelona (Spain), in La Jonquera (Spain) and in Ljubljana (Slovenia).

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Natural gas and renewable-gas as an alternative fuel offer important benefits to consumers, the environment and to the economy as a whole. It provides a quick and cost-effective way with a mature technology to meet key objectives of the EU, including decarbonising road transport and improving air quality in cities.

The common booth organised by NGVA Europe is showcasing 7 different TEN-T & CEF co-financed projects as best-practice examples:

**LNG Blue Corridors:** The consortium of 27 partners from 11 countries is deploying 12 new LNG or L-CNG stations, both permanent and mobile, on critical locations along the Blue Corridors whilst building up a fleet of approximately 140 Heavy Duty Vehicles powered by LNG - www.lngbc.eu

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BIOLNG4EU: Rolande - frontrunner in clean fuels - has taken the initiative to introduce Bio-LNG in road transport in the Netherlands and Belgium by conducting a study with real life trial including 2 Bio-LNG facilities, 4 refuelling stations and 35 trucks running on bio-LNG blends - www.rolandelng.nl

ECO-GATE: The consortium of 25 partners from Spain, Portugal and France is conducting a study with integrated pilot deployment along the Atlantic, Mediterranean and Rhine-Danube Corridors, including 21 L-CNG, 1 bio-methane and 1 H-CNG supply points, as well as testing innovative NGV solutions

CNG Romania: Denisson Energy (Antares Group), together with NGVA Romania, is deploying the first CNG stations network in Romania, consisting of 9 refuelling points along the Core Network Corridors and supported by dissemination activities to facilitate the market uptake of CNG in Romania - www.cngromania.eu

GREAT: This project is coordinated by the Region Skåne and aims at installing 3 C-LNG stations for heavy duty trucks in Sweden, as well as 70 fast chargers for electric cars on the Swedish, Danish and German sections of the Scandinavian-Mediterranean Corridor - www.great-region.org

BESTWay: This project aims at identifying, implementing and validating new solutions for LNG/CNG supply all along the French-Spanish Atlantic Corridor, including 9 refuelling points between Algeciras and Paris - www.bestwaylngstations.com

SiLNGT Small Scale TRANSPORT: Butan plin is carrying out a study with integrated pilot deployment of 3 LNG filling stations until the end of 2019, in order to introduce this alternative fuel on the Slovenian and Croatian Core Network Corridors - www.lng.si
ViA15 is a cross-border section of the road infrastructure on the Rhine-Alpine Corridor between Netherlands (Nijmegen) and Germany (Ruhrgebiet). The Action aims to prepare the construction works for the new 12.5 Km road in the Netherlands, planned to take place in 2021-2023.

The activities of the action are as follows: procurement of a DBFM-contract, conditioning works, stakeholder commitment, securing parking facilities and project management and communication. It is part of the Global Project that aims to improve traffic and safety of the cross-border section, while enhancing environmental protection and CO2 reduction.

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Fresh Food Corridors (FFC) Project aims to achieve a safe, sustainable and efficient fresh food logistic chain in the Euro-Mediterranean area, by using Motorways of the Sea and railways in an interoperable approach. The activities deal with the design of a Fresh Food Corridors framework, defining the requirements and specifications, the execution and assessment of 3 Fresh Food Corridors pilots, running for 2 agricultural seasons from Israel to Northern and Central European markets passing through the core ports of Koper, Venice and Marseille/FoS. The Action is complemented with a transferability analysis, B2B events in order to ensure future sustainability of the implemented corridors and dissemination tasks.

E-Impact is a cross referenced Action to FFC. The project’s overall objective is to foster the implementation of e-Freight solutions so as to simplify and reduce the cost of exchanging information between different actors and transport modes along the chain, leading to a more efficient, less polluting freight transport, and facilitating the use of multimodal freight transport solutions. The Action, including studies and real-life pilot deployments, is implemented in core ports in Italy, Poland and Portugal along the Atlantic, Mediterranean and Baltic Adriatic CNCs.

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Projects implemented by CEI-ES are summarised in our web site. Projects in the transport sector address main themes and priorities, both for freight and passenger transport.

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Rail connection to 4 existing freight terminals along the MED Corridor in Spain by Alonso Group

The Global Logistics Project is the bet for intermodality of the Alonso Group. The backbone concentrates on connecting the nerve centres of the maritime traffic of goods of the Iberian Peninsula through multi-client and multiproduct trains with high reliability and frequency between our own logistics centres.

All Logistics Centres are strategically located close to the main MED ports and industrial areas in Barcelona, Valencia, Algeciras and Madrid, completing the network at the Med Corridor.

Alonso Group is a private promoter that will make a public good at European level because it will contribute to complete the infrastructure of the TEN-T network, to solve the problem of the different gauge of the Spanish rail, and to increase the quota of transport by train in Spain, diverting traffic from road to road.

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INIWAS - Improvement of the Northern Italian Waterway System

Po river inland navigation network is part of the strategic European network (Core network), within the Mediterranean Corridor.

The INIWAS Project aims at removing six physical bottlenecks along the Northern Italy inland waterways (works total amount € 46,414,000.00).

Project Partners are: AIIPPO (Project coordinator), Emilia-Romagna Region, Sistemi Territoriali SpA, Infrastructures and Transport Ministry implemented by RAM SpA, Italian Internal Navigation Union (UNII).

All the works are in progress:
- Isola Serafini navigation lock on the Po river; to restore the navigation continuity from Piacenza to Adriatic Sea (works currently in progress about 99,5%)
- Upgrade of Ferrarese Waterway, functional to guarantee class V navigability
- Upgrade of the manoeuvring basin in Porto Levante (works already completed)

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The Project “Study for the standard enhancement and interconnection of National System of RIS-Italy” (Action no. 2014-IT-TM-0319-S) is the second stage of the Global Project related to the development and exploitation of the Northern Italy Waterway System (NIWS). In particular, this Action aims to support the evolution of the RIS-Italy System by completing the functionalities of the existing prototype, extending the radar coverage to the entire NIWS and promoting further technological development in order to make inland navigation more attractive.

The Global Project, consisting of the completion of the system of infrastructures for waterway transport from Milan to the ports of the Adriatic Sea, and the extension of navigation on the Po westward, is a fundamental part of an overall and shared policy for the development of the whole Northern Italy economic area.

Reducing the negative transport impacts on environment and enhancing the aspect of inland waterways as backbone for a new concept of intermodality, it will improve the industrial competitiveness of the area, re-launch some economic and transport sectors currently in a critical situation and increase the development of inland navigation, rail transport and of Adriatic seaports as gateway to the Padana Valley with its link with European Corridors.

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Improvement of Navigation Status on the Vltava Waterway

The improvement of navigation status on the Vltava Waterway by adaptation of lock chamber gates Hořín and the modernisation of lock chamber Štvanice approaches. This improvement is part of a Global Project of the Labe-Vltava waterway modernisation in the Czech Republic. It aims to upgrade two locks on the Vltava river: Hořín and Štvanice to ensure a good navigation status along the river. Both locks are located on Hamburg-Dresden-Praha-Pardubice pre-identified section of the Orient/East Med Corridor.

Hořín lock is located at Vltava river km 1 (on the side canal), in proximity to Mělník town which lies at the junction of Vltava and Labe rivers. Štvanice lock is located at Vltava river km 50.69, at the entrance to the historic city centre of Prague.

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Inland Waterways Transport (IWT) is a sustainable transport mode, but its full potential to contribute to the sustainability and efficiency of the European transport and logistics is not fully exploited. There is a need for more innovation in the IWT sector in order to keep up with the state-of-the-art of developments in modern logistics and transport technology.

In particular, air quality, fuel efficiency and toward zero emission in 2050 or in general the all-encompassing IWT energy transition are key areas where innovation can lead to required improvements. The European Inland Barging Innovation Platform (EIBIP) and the linked regional innovation centres: D-ZIB; BATELIA; INDanube; CINTRE and Innovation Lab, will conduct promotion and awareness activities, as well as the implementation of concrete business cases to facilitate the uptake of innovation by the IWT sector.

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The Albert Canal is the most important waterway in Belgium. It is a CEMT class VIb waterway, except for the section between Antwerpen and Wijnegem, with a length of 130km and 62 bridges with an under bridge clearance varying from 6.60 to 9.10m. It connects the Port of Antwerp and the Scheldt with the Meuse in Liège. Inland waterway transport on the Albert Canal also includes an important share of cross-border inland waterway transport with origin or destination in the Netherlands, France and Germany. Therefore the Albert Canal is an important economic waterway and node within the North Sea-Mediterranean corridor.

Watertruck+ is a European project that aims at the gradual introduction of an innovative concept for the transport of goods on small waterways (CEMT I-IV) that can unlock the economic potential of a region through the use of small, self-propelled or unpropelled, standardised and modular barges. Combined with large or small environmentally friendly push boats, used for pushing the convoys, the concept ensures maximum flexibility of operations while maintaining maximum regional coverage by connecting small inland waterways with the TEN-T network.

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At the heart of all European Public Policies, Seine-Scheldt is a new infrastructure network of the 21st century, with the realisation of the Seine-Nord Europe canal. Member States bring back the waterway to the heart of their cooperative project at the beginning of the 2000s, aiming to develop a shared modern network: multimodal, innovative, clean, safe, accessible and efficient.

Covering 1100 km, it connects France, Belgium and the Netherlands and will permit to double the sustainable exchange capacity between countries, to boost the economy in the regions and to open a new gateway to Europe by 2030. Born from the collective investment and shared targets of four strategic partners – Voies Navigables de France, the Société du Canal Seine-Nord Europe, De Vlaamse Waterweg and Service Public de Walonie – Seine-Scheldt will emerge as an offer of multimodal services in Europe’s largest logistics region.
The projects FAIRway Danube, FAST Danube (Technical Assistance for Revising and Complementing the Feasibility Study Regarding the Improvement of Navigation) and SWIM (SMART Waterway Integrated Management) are the first implementation phase of the “Fairway Rehabilitation and Maintenance Master Plan”, which is part of the TEN-T Corridor Work Plan for the Rhine-Danube Corridor.

The focus of FAIRway Danube is to provide current and harmonised information about shallow sections, water levels and water level forecasts, marking the fairway based on available depths, by pilot operations of new harmonised services for waterway users, with involvement of stakeholders for validation of results by means of pilots.

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The FAST Danube project concerns the Romanian – Bulgarian common sector of the Danube, where some of the most critical bottlenecks of the Danube are located. The overall objective of this Feasibility Study is to identify technical solutions to be implemented in order to ensure at least minimum fairway parameters for the benefit of safe and efficient traffic on the Danube stretch throughout the year. The criteria to select a certain technical solution are technical and economic efficiency as well as environmental impacts.

The general objectives of SWIM project are to contribute to cohesion, efficiency and sustainability, as well as to increase the benefits for its users on the Lower Danube. The project aims to implement the best measures using the integrated concept for the fairway rehabilitation, in order to remove the bottlenecks and ensure the sustainable navigation all year round. Within these actions as pilot studies, by removing the bottlenecks, together with the innovative solutions for strength safety navigation will have a significant socio-economic impact.
Since the action "Upgrade of Gabčíkovo locks" deals with the most pressing issue on the Slovak stretch of the river Danube, it is necessary to make complex upgrade of both locks of Gabčíkovo. At the end of the project, the Gabčíkovo locks will be able to provide continuous and stable navigation conditions and ensure a safe passage through the locks.

After the project has been completed the time needed for shipping through both of the Gabčíkovo locks is expected to be cut by half (approximately 20 minutes), in addition unexpected downtimes that have blocked the entire Danube to a significant percentage during the last two years will drop to zero.

By improving fairway conditions and by subsequently improving competitiveness of Danube navigation, the upgrade of the Gabčíkovo locks aims to take advantage of the full potential of the Danube navigation to support the growth of industrial activity and the creation of jobs in the Danube Region.

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The port of Giurgiu, located at river km 493 of the Danube, is a crossroad for flows and transhipment of freight between inland waterway, rail and road transport. Its infrastructure upgrade will contribute to enhance the connections between different modes of transport allowing an increase of freight handled along the Romanian section of the Danube.

The construction works foreseen in project “High Performance Green Port Giurgiu- Stage II Construction” will aim to develop Giurgiu as a green port that embraces environmental and climate protection.

The scope of the project is to:

- Construct the missing links with road, rail and inland waterway networks
- Build a covered “all-weather” trimodal terminal
- Upgrade the port water side basic infrastructure
- Apply for obtaining the EMAS certification for the trimodal “all-weather” terminal

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Hexagon Composites delivers safe and innovative solutions for a cleaner energy future. We are adapting our leading composite pressure vessel technology for a wide range of mobility and storage applications. The energy transition towards a low-carbon society is constantly opening up exciting growth opportunities for us.

Our Mobile Pipeline® gas transport modules are used to transport compressed gases from mother to daughter stations as well as to off-grid industrial customers. The super lightweight containers equipped with full composite cylinders have a payload that is three times larger compared to conventional steel transport units.

They have full ADR approval and are available in lengths from 10 ft to 45 ft, with a maximum nominal capacity of approximately 13,250 Nm³ of gas (approx. 10 tons of CNG) - the largest transport capacity worldwide.

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The three transport Flagship projects of EU Strategy for the Baltic Sea Region, funded under the Interreg Baltic Sea Region Programme, showcase their interim results in the joint stand.

NSB CoRe aims to improve the sustainable transport and accessibility along the North Sea Baltic core network corridor.

The main focus of Scandria®2Act is to foster clean and multimodal transport to increase connectivity and competitiveness of regions along the Northern part of the Scandinavian Mediterranean core network corridor. TENTacle project focuses on capitalising the TEN-T core network corridors in the Baltic Sea Region for prosperity, growth and cohesion.

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Outdoor exhibition & test drive area

The outdoor exhibition highlights different innovative technologies for the road sector, such as electromobility natural gas and fuel cells/hydrogen. It spotlights a range of alternative fuels vehicles, from passenger cars and light commercial vans to heavy vehicles such as a CNG and LNG trucks and buses.

In addition, an innovative electric plane and other innovative projects will be showcased. As in previous TEN-T Days, we are also offering the popular opportunity to ride&drive a number of test vehicles. Don’t miss the other half of the exhibition and join us outside! Special thanks goes to all suppliers who are supporting our events!

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Floor plan - FOYER

- CLOAKROOM
- KUPOLA
- STAFF ROOM

Rooms:
1. 1
2. 2
3. 3
1 LJUBLJANA. FOR YOU
2 EuroVelo, the European cycle route network, and cycling
3 Vital Nodes
Floor plan - KUPOLA
1 European Commission - DG Mobility and Transport
2 European Commission - TENtec
3 European Commission - Transport Research and Innovation Monitoring and Information System
4 INEA - Innovation and Networks Executive Agency
5 TRA 2020 and TRA Visions 2018
6 TO7 Network
7 Fuel Cells and Hydrogen Joint Undertaking
8 SESAR - High performing aviation for Europe
9 EIPP - European Investment Project Portal
10 Services of technical support for the deployment of ERTMS along the core network corridors
11 Shift2Rail - Delivering the railway systems of the future
12 European Union Agency for Railways
13 Transport Information Management System (TIMS) for the TEN-T in Turkey
14 SEESARI - South East Europe Strategic Alliance for Rail Innovation
15 ELPA
16 Joint Electric Mobility stand Fast and Ultra Fast Charging across Europe
17 Comprehensive fast-charging corridor network in South East Europe
18 EV Fast Charging Backbone Network Central Europe and ČEZ
19 EV TEN-T Fast Charging Network
20 INCH – INteractive Charging
21 CEDR - Conference of European Directors of Roads
22 InterCor (Interoperable Corridors) - AEOLIX - CONCORDA - TN-ITS Go
23 C-Roads
24 Safe and Secure Parking Areas - Best Practices
25 Single Window Initiative
26 European Commission - DG Mobility and Transport
27 Intelligent Cooperative Sensing for Improved traffic efficiency
28 C-MobiLE - Accelerating C-ITS Mobility Innovation and deployment in Europe
29 AutoMate - Automation as accepted and trusted TeamMate to enhance traffic safety and efficiency
30 Project of establishment of Authority of Public Transport
31 ELAPHE
32 AEROBI - SENSkin - SAFE 10 T - RAGTIME - CoExist - SKILLFUL - FLOW - ERA-NET Plus Infravention
33 HERE Technologies: enabling road-safety innovations through data collaboration - BMW Group
34 European Hyperloop proof of operations facility
35 Port-Liner - “Zero emission” ships for inland waterways
36 E-Ferry – Connecting Blue and Green
37 Greenrail: innovative and sustainable railway sleepers – the greener solution for railway sector
38 Clean Mobility projects in Amsterdam
39 NCE-AdvancedEvNet
40 Synergy in Motion
41 Hydrogen for clean transport
Floor plan - STEJKLENA
1 RFC Network - cooperation of RFCs in Europe supported by RailNetEurope
2 UNIFE – Trainguard ETCS Live
3 Construction of the second tunnel tube for the Karawanks road tunnel on the cross-border section Austria-Slovenia
4 The Fehmarnbelt tunnel - the fixed rail and road link between Scandinavia and Germany
5 MXP North rail access
6 New railway line Dresden – Prague
7 Rail Baltic
8 Slovenian rail projects
9 NBB - North Bothnia Line
10 Signalling Programme Denmark
11 Implementation of TAF TSI at private railway undertakings
12 NetIRail-INFRA – Needs tailored interoperable railway infrastructure
13 Planning of the new urban railway line S4
14 European Rail Freight Line System & sustainable node development
15 Galleria di Base del Brennero - Brenner Base Tunnel
16 Tunnel Euralpin Lyon Turin (TELT)
17 EurekaRail and Wunderline
18 Ireland’s Ports - connecting to Europe
19 Napa4core - AdriUp - CarEsmatic
20 GAINN4MOS: Sustainable LNG Operations for Ports and Shipping - Innovative Pilot Actions
21 FAMOS – STM Validation – WINMOS II
22 POSEIDON MED II
23 On the Mo5 Way
24 Atlantic Blue Ports
25 DOOR2 LNG – Upgrade of the maritime link integrated in the multimodal container transport routes
26 ECO-GATE - European Corridors for natural Gas Transport Efficiency
27 GAS VESSEL
28 CORE LNGas hive
29 PICASSO
30 Bothnia Bulk
31 LNG in BSP and LNG in Baltic Sea Ports
32 LBG Bremen, Small-Scale Liquefaction and Supply Facility for LBG as alternative fuel for the transport sector
33 Creation of LNG road HAulage MArket in a smart & quick way
34 Natural gas in transport projects
35 VIA15: solving the missing link in the cross-border road infrastructure on the Rhine-Alpine corridor
36 Fresh Food Corridors - E-Impact
37 Central European Initiative - Promoting transport connectivity of our regions through EU projects
38 Rail connection to 4 existing freight terminals along the MED Corridor in Spain by Alonso Group
39 INIWAS - Improvement of the Northern Italian Waterway System
40 Study for the standard enhancement and interconnection of National System of RIS-Italy
41 Improvement of Navigation Status on the Vitava Waterway
42 EIBIP - European Inland Barging Innovation Platform
43 The Albert Canal: lifting of bridges and upgrading to class VIb (part 4)
44 SEINE SCHELDT 2020
45 SWIM, FAST for FAIRWAY Danube
46 Upgrade of Gabčíkovo locks
47 High Performance Green Port Giurgiu - Stage II Construction
48 Hexagon Composites
49 NSB CoRe - North Sea Baltic - Connector of Regions safety and efficiency