



NEWOPERA Aisbl
Rue De Livourne 7 –Box 4
1060 Brussels
BELGIUM
VAT: BE 0894.546.569

A photograph of a long, arched railway tunnel. The tracks run straight into the distance, leading towards a bright light at the far end. The walls of the tunnel are made of concrete and show some signs of wear. Overhead, there are various cables and electrical equipment. The floor is covered with green mats.

THE NEWOPERA Aisbl PATH TOWARDS SUSTAINABLE MOBILITY

THE RAIL LIGHT AT THE END OF THE TUNNEL



The Association NEWOPERA Aisbl was formed in 2007 under Belgian law.

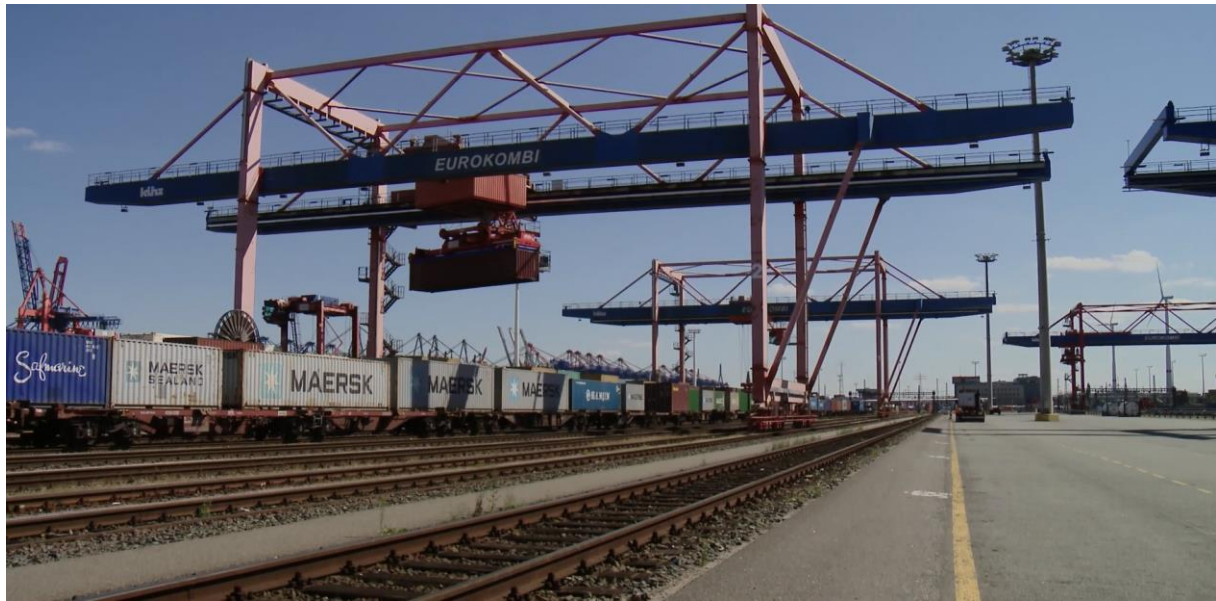
NEWOPERA is an International Non Profit Association engaged on research and demonstration activities focused on Rail freight/Intermodality innovation and technology evolution. Analyzing the weaknesses of the European rail freight system the NewOpera founders, composed of former executives of two leading shippers, plus two major road and combined transport operators and the second largest railway undertaking, suggested the idea of a dedicated rail freight network as a stepchange for achieving sustainable mobility. The NEWOPERA name derives from the NEWOPERA Project "**New European Wish – Operating Project for European Rail Axes**". The rail freight dedicated network alone is not sufficient for achieving sustainable mobility, but is the first indispensable stone of a long term strategy to be implemented on a step by step basis.

NEWOPERA Aisbl MOBILITY VISION

"Our Vision is a greater use of the rail system bringing together Europe's Rail industrial experiences for developing sustainable and environmentally friendly solutions comparable and competitive with alternative modalities."

The Vision is realized by bringing together Industry expertise and professional know how capable of identifying and implementing practical transport/logistic/supply chain solutions to be subsequently tested for being scaled up to an industrial dimension.

RAIL –SEA PORT INTEGRATION



THE WHITE PAPER 2050 MOBILITY VISION RELATED TO RAIL

Develop and deploy new and sustainable fuels and propulsion systems. Optimize the performance of multimodal logistic chains by making greater use of more energy-efficient modes. 30% of road freight over 300 km shifted by 2030 to other modes such as rail or waterborne transport and more than 50% by 2050, facilitated by efficient and green freight corridors. To meet this goal requires appropriate infrastructure to be developed.

By 2050, complete a European high-speed rail network. Triple the length of the existing high-speed rail network by 2030 and maintain a dense railway network in all Member States. By 2050 the majority of medium-distance passenger transport go by rail. A EU-wide multimodal TEN-T 'core network' is fully functional by 2030, with a high quality and capacity network by 2050 including the needed set of information services.

By 2050, connect all core network airports to the rail network, preferably high-speed; ensure that all core seaports are connected to the rail freight and where possible, the inland waterway system.

BOARD OF DIRECTORS AND NATIONALITIES

Franco Castagnetti – Italian – 40 Years senior shipping s/chain mgmt

Armand Toubol – French – 35 Years senior mgmt roles with SNCF

Emilio Fernandez – Spanish – 35 Years senior transport/logistics mgmt

Lars Deiterding – German - 15 Years ICT + logistics engineering mgmt

Horst Kubek – Austrian - 40 Years senior road transp./intermodal mgmt

Gabriele Grea – Italian - 10 Years in university transport research

THE NEWOPERA EUROPEAN COMMISSION CO-FINANCED PROJECTS



THE NEWOPERA PROJECTS SUPPORTING THE VISION ARE LINKED BY A "RED THREAD"

NEWOPERA "RED THREAD"

Modal shift to rail Co-modality	Freight Network	Ports to hinterland by rail viable alternative to road		Flexibility Co-modality
Innovations/ Technology	Hubs/Terminals in traffic attraction zones	Integrated transport chain/Advanced solutions	Mechatronics AGV essential in transfer technology for H24-T7	Longer, commercially faster and heavier trains Radio command Braking + ICT
Transport Industrialization	Dedicated network essential + connections	Ports/Mega Hubs drivers for economy of scale		72 Wagons, 1524m, 210 TEUs, 4026tons transported
Sustainability	Road decongestion	Brown field structure use	Elimination of human element on operating surface	-40%Capacity utiliz. -5% Energy -30% Costs
Market Up Take	Legislation for a ERNCF	80000 TEUs moved	Equipment tests during project lifetime	1524m train tested
<i>Projects</i>	NEW OPERA	TIGER/ TIGER DEMO	SHIFTER (NOT FINANCED)	MARATHON

NEWOPERA "RED THREAD"

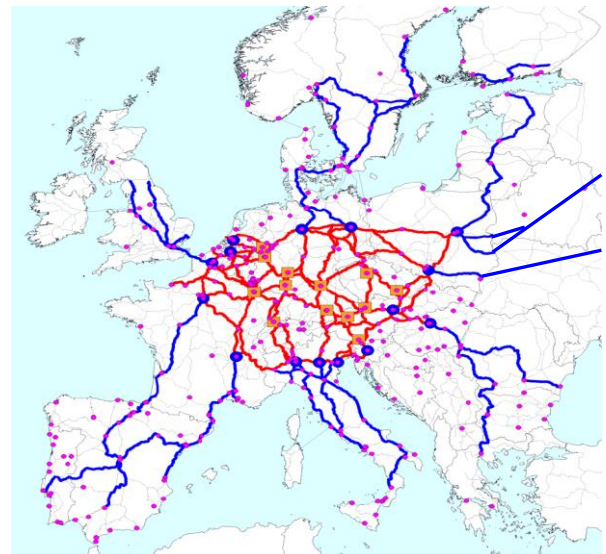
Modal shift to rail Co-modality	Single/Group of wagons rejuvenation	Rail backbone of co-modal eco friendly mobility	Wagons construction & design	250000 Road vehicles - OEM components transferred to rail
Innovations/ Technology	Last mile operations Hybrid locos - Multi use wagons	4 Action Fields 17 Key Elements 55 Elements	Electric wire all along the train + Automatic coupler + Innovative materials	New logistic systems/ New planning based on real time ICT technology
Transport Industrialization	Optimized terminal operations	Hubs/Terminals pivotal role in co-modal industrialization	High capacity network	Terminal to Terminal travelling stock
Sustainability	Cost saving Maneuver saving Staff saving	Integration of rail into urban mobility	Preventive maintainance	Road decongestion at lower cost
Market Up Take	Tested trials on last mile - Hybrid locos Wagons technology	Implementation of suggested solutions	Tests on suggested innovations	Train tests during project lifetime
<i>Projects</i>	VIWAS	SPIDER PLUS	C4RAIL	JUST IN SEQUENCE (NOT FINANCED)

The NEWOPERA Project, entirely funded under EU FP6 program, introduced at European level the dedicated Rail freight network concept www.newopera.org. The project led to the legislation of the “European Rail Network for Competitive Freight”. The TEN T implementation is in itself a recognition of the European need promoted by NEWOPERA of achieving an efficient and effective Rail Space where the Freight must be given a greater priority than today.

NEWOPERA ORIGINAL MAP – ARTISTIC IMPRESSION



NEWOPERA NETWORK WITH NODES



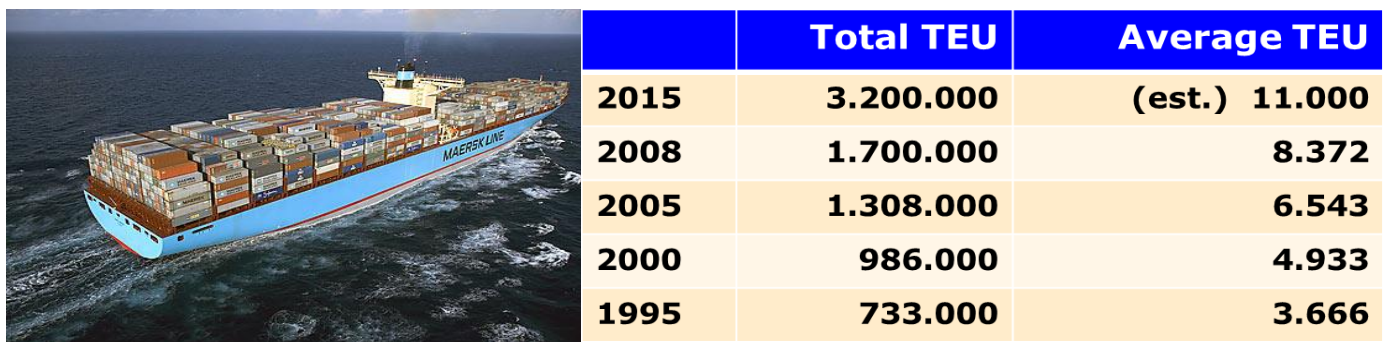
THE NEWOPERA'S PROJECTS DESCRIPTION

From the above visionary project, leading to the freight oriented network, NEWOPERA Projects analyzed the world market trends and their impact on the maritime traffics bound to/from European ports.

The continuous increase in the size of vessels exceeding 18000 TEUs, calling at an inferior number of ports where they perform a much increased number of movements, made evident the inadequacy of the traditional containers' distribution system, both for economic and port congestion reasons. The industrial distribution by rail via inland dry ports appeared to NEWOPERA to be the only viable proposition. TIGER and TIGER DEMO projects, co-financed under the EU FP7 program, developed that concept generating effective transport industrialization from the sea ports to dry ports and promoting investments by private and public actors in the considered sea ports of Genoa, Hamburg, Bremerhaven Wilhelmshaven, and in the Dry-ports of Lehrte, Rivalta Terminal Europe, Munich Riem, Nienburg, Duisburg and Poznan. These two projects effectively implemented the idea of maritime services integrated with overland European services for generating economies of scale through an efficient network of Inland Hubs, Terminals and Freight Villages. This innovative distribution model has been adopted ever since all over Europe. This system of distribution enhanced the idea of major European corridors integrating into the comprehensive network via inland terminals, making such hubs and terminals integral part of the European Rail Network.

The Final Report Books were produced for each of these two projects and they are still available on the www.newopera.org website.

THE CHALLENGES ADDRESSED BY TIGER AND TIGER DEMO PROJECTS

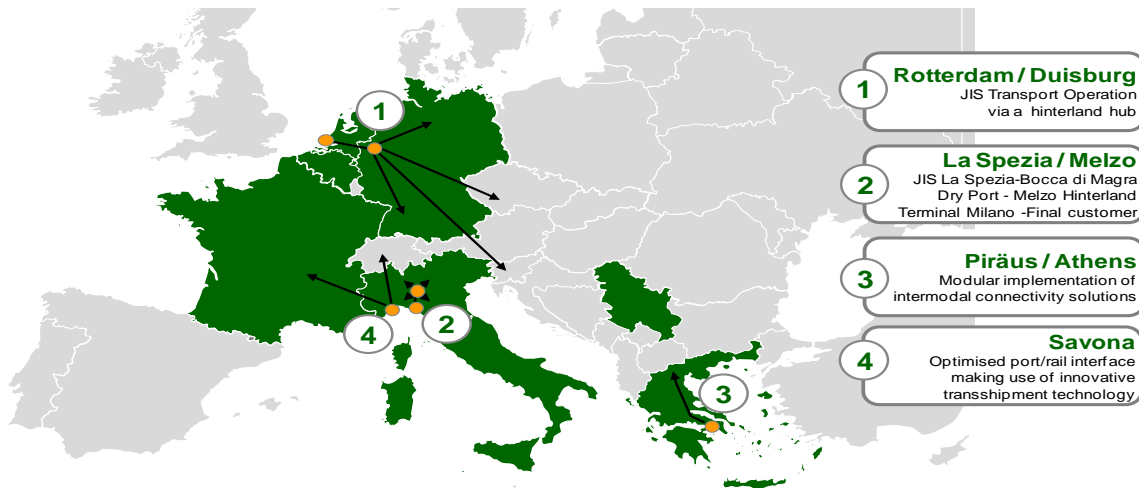


NO CHANGE IN OVERLAND TRANSPORTATION APPROACH



SHIFTER “**S**ynchro modality **H**andling tools for **I**ntermodal **F**reight **T**erminals **E**nabling **R**esources optimisation” was intended to be a natural continuation of TIGER-TIGER DEMO Projects making the transfer of containers in the Sea Ports and Dry Ports more efficient and effective. The project was assuming the adoption of mechatronics, robotics and AGV equipment in the Dry Ports, Inland terminals directly connected with the Sea ports in order to reproduce in the Hinterland the same advanced lifting and shifting technologies used there. The expected results were: 24 hours round the clock operations in economy of scale, increase in inland terminals productivity, reduction of operating costs per unit handled, elimination on the operating surface of manpower for casualties’ prevention.

THE SHIFTER OPERATING THEATRES



SHIFTER which would have had a formidable market uptake opportunity was not financed by the EU Commission.

However the need to provide the maritime ports with powerful links capable of offering high capacity of transport at lower cost remained a paramount priority. The enhancement of the efficiency of existing railway lines in capacity and competitiveness was an urgent challenge since the vessel size evolution was faster than expected. Long-term solutions like infrastructure investments or ERTMS level3 seemed not in line with the increasing market demand timing. NEWOPERA took up this challenge in the MARATHON project with the idea of a simple and quickly implementable solution offering capacity gains, competitiveness enhancement and energy savings while avoiding major infrastructure investments.

The MARATHON project, co-financed under the EU FP7 program, dealt with the coupling of two classical freight trains driven by identical locomotives, the second in the middle of the convoy reaching a maximum length of 1500m. This length was chosen since the standard train length fixed by the EU was 750m and by the fact that the average signaling block length is often 1500m outside city suburban regions. Under the MARATHON project two tests were performed in France between Lyon and Nîmes on a rail stretch of around 300km both with Electric Alstom and Diesel Vossloh traction. The trains were able to overcome brilliantly all breaking conditions while travelling at 100 km/h. The trains pulled 72 wagons for a transport equivalent of 210 TEUs, 4036 Tons and 1524m length. The second unmanned locomotive was radio commanded by the first one. The MARATHON project proved indeed the declared operational costs saving of up to 30% and capacity generation of up to 40% in addition to further energy saving and environmental benefits. Two videos were produced on these tests which themselves had a tremendous dissemination impacts all over Europe and beyond, together with the Marathon Final Report Book available on www.marathon-project.eu.

THE MARATHON TRAIN DURING OPERATION IN FRANCE: 1524m – 72 wagons – 4026 tons



ANOTHER MARATHON TRAIN CROSSING AN ORDINARY TRAIN IN FRANCE



PREPARATION OF THE TWO MARATHON TRAINS – ELECTRIC AND DIESEL TRACTION



NEWOPERA then developed an analysis of the supply chain demand showing that the Wagonload activity still represented a significant share of the railway undertakings' revenue while generating important losses in their accounts. Road with its flexibility, its reliability and its competitiveness remains the preferred shippers' choice. But the opinion awareness of the need of a sustainable transport system is increasing generating higher support to rail transport. Matching competitiveness for smaller shipments with a higher reliability was the next challenge to which NEWOPERA dedicated its efforts.

The VIWAS project, co-financed under the EU FP7 program, deals with single/group of wagons traffic. In the wagonload transport system the collection and delivery representing an important share of the cost, NEWOPERA proposed in the VIWAS project another original solution using a rail Road engine to operate the last mile. Its flexibility, its capacity to be easily mutualized and to be remotely controlled convinced an operator of a complex private siding to test it. The conclusions of a three months test showed that the gain of efficiency can reach up to 30% according to the private siding design. Further substantial savings were demonstrated by new wagons' design capable of carrying both intermodal units and other conventional cargo and the use of hybrid locomotives for cutting time and costs of maneuvering in terminals and marshalling yards. See www.viwas.eu

THE HYBRID LOCOMOTIVE TESTED IN VIWAS PROJECT



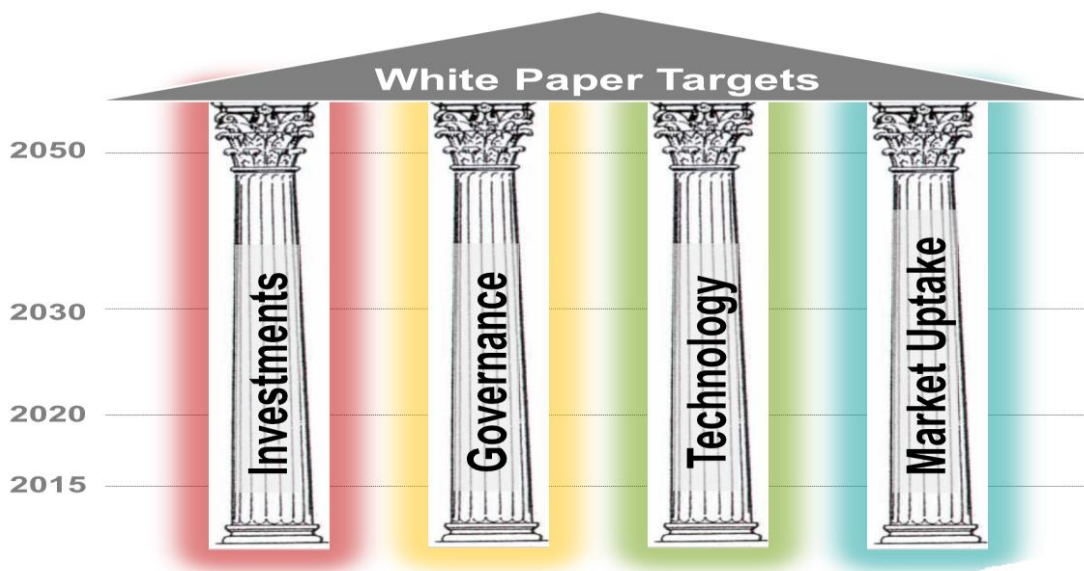
THE WASCOSA FLAT WAGONS CAPABLE OF LOADING STANDARD INTERMODAL UNITS AND FLAT CASSETTES FOR GENERAL CARGO SUCH AS FOREST PRODUCTS, PROFILES, CONSTRUCTION MATERIAL



Meantime the European Union plans became more ambitious for transferring to more friendly modes traffic equivalent of 30% in 2030 and 50% in 2050, as indicated in the White Paper reproduced in page 3 of this brochure. Such objective could not be achieved without a global policy involving urban planning, industry clustering, acceleration of development of the environmentally friendly mode competitiveness.

NEWOPERA elaborated the SPIDER PLUS project where a global vision of a more sustainable mobility is based on electrified rail. SPIDER PLUS project, co-financed under the EU FP7 program, encompasses the new visionary approach targeted at 2050, combining TIME with SPACE. None in Europe planned mobility taking into consideration the SPACE FACTOR which is becoming every day in shortest supply for environmental and physical considerations. Therefore SPIDER PLUS is totally integrating the above concepts into a wider perspective where the available resources are optimized at their best for a more sustainable mobility.

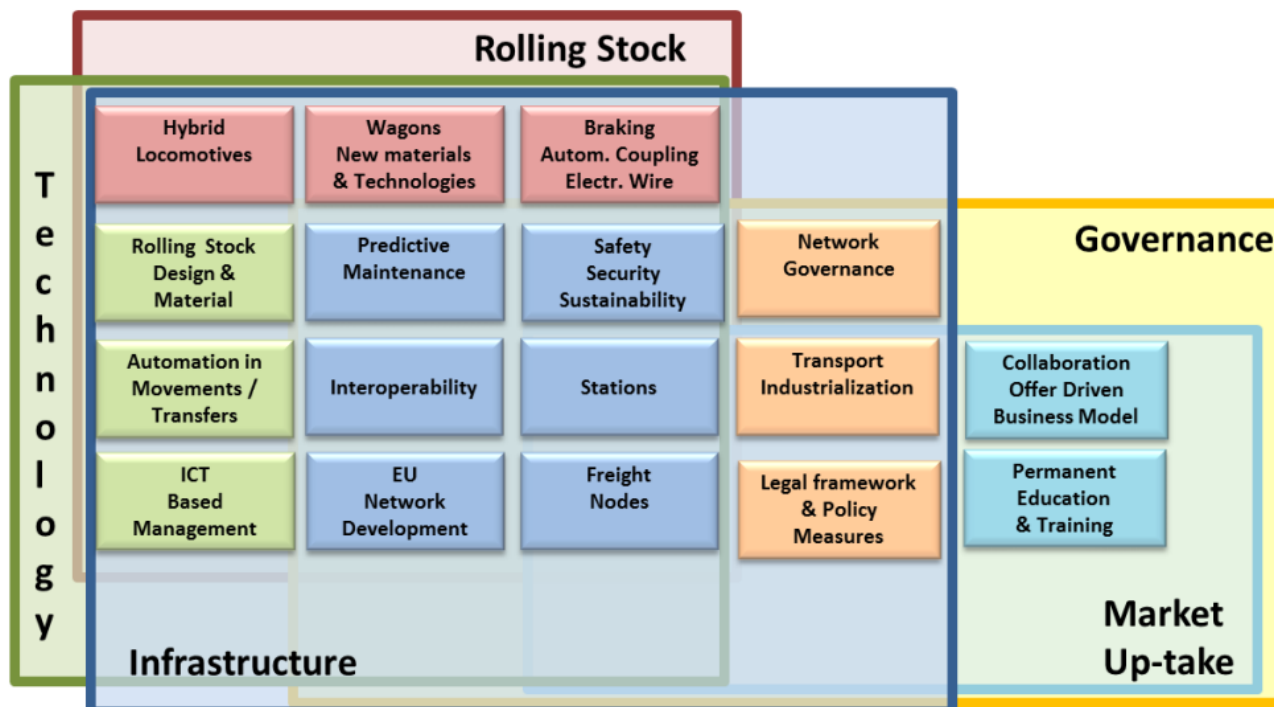
THE FOUR SPIDER PLUS PILLARS SUSTAINING THE 2050 MOBILITY VISION



The Final Project outcome was the publication of an Internet E/Solutions Guide Book summing up all SPIDER PLUS recommendations. The interactive Guide Book is accessible on the SPIDER PLUS website containing 4 Action fields encompassing the 17 key elements with the most important topics to be tackled in the years to come. These 17 key elements open up on 55 elements. Each key element is described concerning its contents and impacts. Important timing milestones are pointed out and related actions are listed with the responsible agents for each element. In addition to the Guide Book a decision support tool seen as a dynamic and interactive Road Map, has been developed.

Essential actions and steps have been summarised in a common project management software environment accessible to everyone on www.spiderplus-project.eu.

THE SPIDER PLUS ELECTRONIC SOLUTIONS' GUIDEBOOK ON TOUCH SCREEN TECHNOLOGY



AVAILABLE ON THE WEBSITE ON COMPUTERS, TABLETS AND SMARTPHONES



NEWOPERA, in its permanent research of a higher degree of satisfaction for the end customers, proposed in CAPACITY4RAIL project, co-financed under the EU FP7 program, to optimise the use of the existing infrastructure with new wagon technologies, better connectivity between the wagons, the cargo, the safety components and the locomotive by providing energy from the locomotive to the wagons and new means of communication. Moreover, in order to satisfy the increasing demand of Society to reduce the noise created during the braking, NEWOPERA introduced also the research of a viable solution into this project.

FULL TRAINS PRODUCTIVITY



The pursued results of this ongoing Project is: flexibility of the offered capacity, better manoeuvrability of the train, introduction of predictive maintenance, updated information on the transport progress and on the status of the cargo.

See www.capacity4rail.eu

NEWOPERA made a further effort for applying its innovations developed during these European Commission co-funded projects to the biggest traffic flow existing in Europe which is developed by the automotive industry. More than one million road vehicles are running every year in Europe for feeding the automotive production line with components.

NEWOPERA conceived JUST IN SEQUENCE for shifting 250000 of them from road to rail.

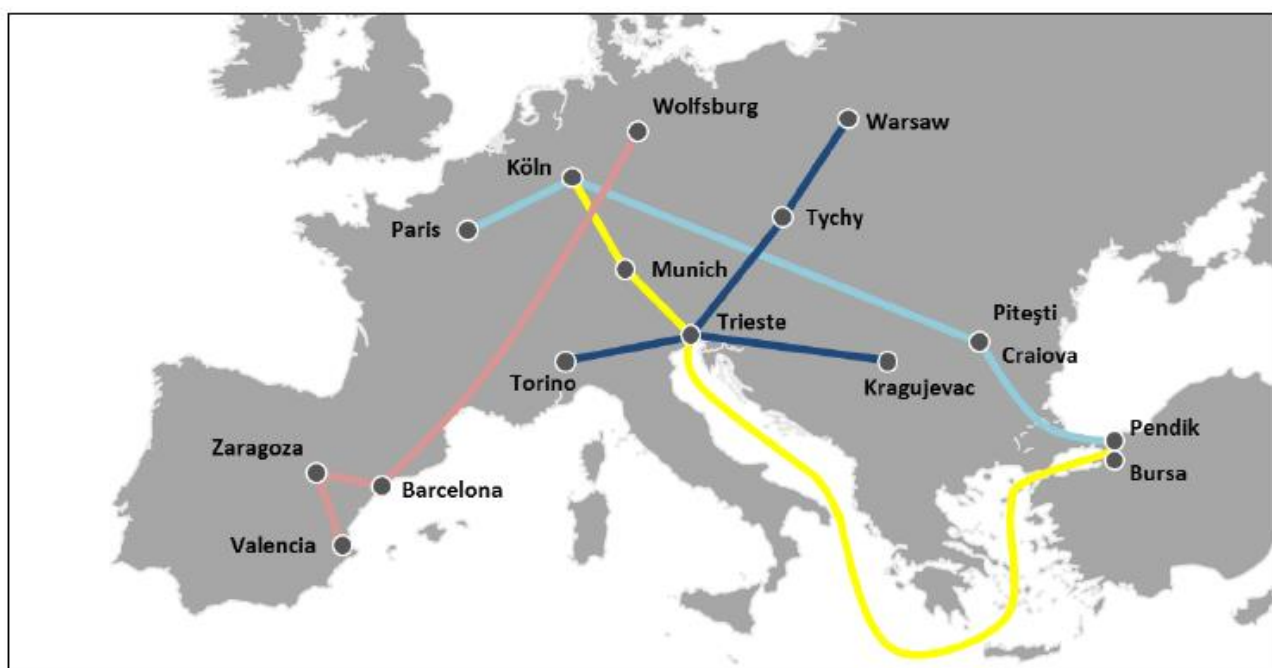
JUST IN SEQUENCE Project through a complete new supply chain and logistic model took the Just in Time concept to a new level of sophistication, bringing into it the sequential factor which is already prevailing inside the automotive assembly plants, according to the following scheme.

JUST IN SEQUENCE OPERATING SCHEME



The Project results are an overall supply chain cost reduction by covering the intermediate leg between terminals of the OEM components, by intermodal rail transport using high cube swap bodies. The supply to the production lines is assured in JUST IN SEQUENCE from the dedicated platforms near to the plants. An intelligent ICT planning system is governing the whole process.

JUST IN SEQUENCE OPERATING THEATRES





CONCLUSIVE NOTE

The NEWOPERA Vision extends beyond the rail network, the train operations, the automated transfers, the train loading, the marshalling yards, the co-modal integration, the transport industrialization, the ICT intelligent systems, by encompassing technological innovations into the industrial supply chain for generating a more efficient and competitive European mobility. The NEWOPERA Aisbl Association dedicated entirely its efforts ever since its creation for fulfilling this ambition.

NEWOPERA PARTNERS AND WEBSITES

CONSORZIO TRAIN – www.consorziotrain.org
F&L – www.europeanfreightleaders.eu
GRUPPO CLAS SPA – www.gruppoclas.com
INTERPORTO BOLOGNA SPA – www.interporto.it
HACON INGENIEURGESELLSHAFT MBH – www.hacon.de
TTU TECNICAS TERRITORIALES Y URBANAS SL – www.ttu.es
BECCIA SILVIO – www.newopera.org
CASTAGNETTI FRANCO– www.newopera.org
KUBEK HORST– www.newopera.org
TOUBOL ARMAND – www.newopera.org

CONTACTS

NEWOPERA Aisbl
European Projects' Office
Corso Milano 15
20900 Monza(MB) – Italy
Tel/Fax +39 0392310930
Mobile +39 3339134662
franco.castagnetti@newopera.org
newopera@newopera.org
www.newopera.org