EU-funded project Synchro-NET to optimize planning and manage real-time variations

Digitally Green

Reduction of hinterland transport costs, strong decrease of CO2 emissions for shipping and land-based transport and relevant modal shift to greener modes: these are the main promises of the "Eco-NET" tool, conceived to optimize planning processes and manage real-time variations.

Currently subject of study and research, the software is at the core of "Synchro-NET" EU-funded project involving as partners DHL Supply Chain Spain (project coordinator), Bureau Veritas, Circle, Cork Institute of Technology, Cosco Shipping Line, CRAIN, Cross-border Research Association, EMC2, FraunHofer, HydrOcean, Kongsberg Maritime AS, Kuehne+Nagel, LE Europe, MJC , Politecnico di Torino, Rail Safety and Standards Board Limited (RSSB), SAM Electronics, Software AG and SYCO.

It can be expected that the next eighteen months will be intense for the international team working on the Research & Development of IT platform "Eco-NET", a new tool for the automatic optimization of multimodal routes which promises to introduce several innovations in transport and logistics field, and to bring significant advantages to all main supply chain stakeholders, from shipping companies to land transport planners, from shippers to ports.

According to the network of companies involved until the end of 2018 in the "Synchro-NET" EU-funded project – i.e. DHL Supply Chain Spain (project coordinator), Bureau Veritas, Circle, Cork Institute of Technology, Cosco Shipping Line, CRAIN, Cross-border Research Association, EMC2, FraunHofer, HydrOcean, Kongsberg Maritime AS, Kuehne+Nagel, LE Europe, MJC , Politecnico di Torino, Rail Safety and Standards Board Limited (RSSB), SAM Electronics, Software AG and SYCO – it has been theoretically demonstrated that with a significant market uptake Eco-NET will permit up to 30% of potential reduction in CO2 emissions for shipping and land-based transport, a 25-30% increase in modal shift to greener modes, a 20-30% decrease of costs connected to the rescheduling of transport routes/modes in case of any unexpected event occurring along the supply chain, a 12-20% reduction in hinterland transport costs and a 12-15% reduction of kms for trucks with fewer wasted repositioning movements.

Furthermore, thanks to the synchro-modal logistic optimization, it is estimated that a reduction between 30 and 50% in managing and administration costs of intermodal flows will be possible.

Eco-NET, therefore, looks set to be good news not only for transport planners, but also for ports (taking advantages from reduced congestion and waiting times with consequent improvement in the infrastructure management and capacity), customers and end-users (having greater control of their supply chain and of externalities), as well as authorities and governmental organizations (taking benefit from a smoother, more controlled flow of freight through busy terminals and from a limited congestion on major roads).

Eco-NET platform will be structured as a web application with a map-based, user-friendly interface and divided into different modules: the main ones will consist of a simulator including an embedded risk analysis solution and of a real-time booking module.

Through the simulator, it will be possible to calculate a trip from origin to destination nodes, given departure and arrival times, allowing users to detect and set different options (for instance, distance, duration, elapsed time, lead times, number of intermediate stops, costs, different destinations, banned nodes and/or links, etc.) and key risk indicators as additional measures to evaluate possible delays, deviations or any other disruption occurring along the supply chain.

In case of any problem along the supply chain, Eco-NET's synchro-modal "Booking Optimizer" module will permit to find a new route to mitigate and overcome the critical situation: for example, in case of delay to a truck in its way to the port, the software will suggest an alternative re-routing to a different port, to use a train connection link, etc. .

In addition to the real-time synchro-modal logistic optimization and analysis statistical modelling, Eco-NET will provide through separate modules the following functions: dynamic stakeholder impact assessment solution, a synchro-operability communications and governance architecture, and slow steaming ship simulation & control systems.

This means that shipping companies will have the opportunity to plan new and more efficient Oceanic routes and react to daily problems (delays, route/speed modifications due to weather, social conflicts, port congestion, etc.) in the shortest period of time.

From land transport planners' point of view, the chance to select best transport options, to discover alternative solutions capable to minimizing empty container logistics and to react to changes with flexible re-planning and re-routing solutions will facilitate their work in a significant way. At the same time, the increased reliability of the entire shipping process could lead to a reduction of customer queries and reverse logistics.

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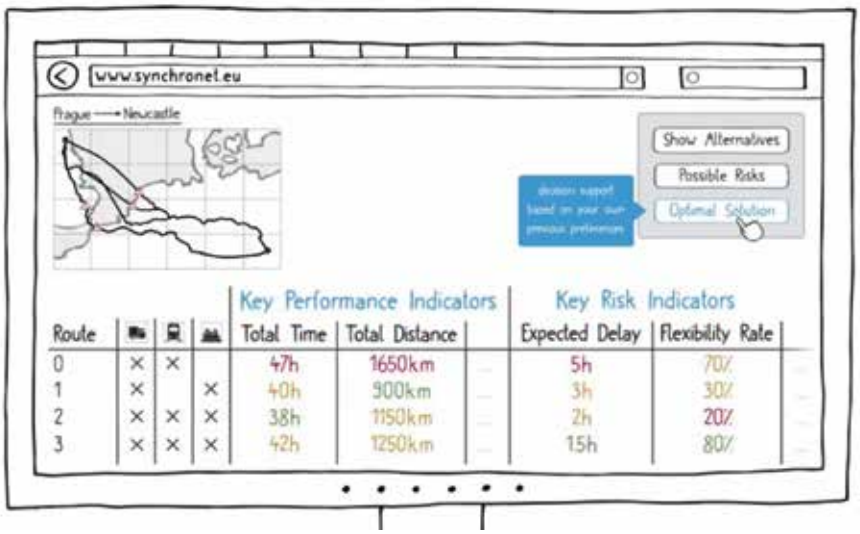

Screenshot of the official Synchro-NET Video | Bild: Synchro-NET