

<b>Project</b>	ULTIMATE Efficient <u>Multimodal</u> <u>Hinterland</u> Networks – new concepts for design and operations
Theme	Mainports in Control
Project manager	Dr Albert Veenstra, RSM
Partner organizations	ECT Participations BV Havenbedrijf Rotterdam NV Modality Software Solutions BV PORTBASE BV KEYRAIL BV Haven Amsterdam Brabant Intermodal BV NV Regio Venlo Erasmus University/Rotterdam School of Management Erasmus School of Economics Erasmus School of Law Eindhoven University of Technology, School of Industrial Engineering

### Motivation

Businesses in the Netherlands play an important role in a large number of global supply chains. This position has resulted from centuries of trading activities, one of the largest ports in the world, a strong fiscal-financial infrastructure, and a strong and innovative logistics industry. Chain innovations that are initiated by “supply chain owners” often find their focal point in the Netherlands.

Different firms in multimodal hinterland networks, such as terminal operators, freight forwarders, information service providers, infrastructure managers, shippers, and receivers, all aim to contribute to a better performance of the overall supply chain. This ambition comes with serious and unexplored challenges, but they are also a tremendous opportunity to develop a sustainable competitive advantage for the Netherlands as the gateway to the European hinterland. The seamless flow of goods from seaports to locations far into the hinterland will be a major enabler to prevent negative external effects from the transport, such as congestion in seaports, congestion on motorways due to too much trucking, and enhance the competitiveness of multimodal inland nodes for warehousing and value added activities.

### Objectives & goals of the project

This project addresses one crucial innovation that is currently developing in the hinterland of the mainports of Rotterdam and Amsterdam: Supply chain and transportation integration through extending the sea terminal gate into the hinterland.

The objective of the partnership in this project is to develop a viable multimodal hinterland network concept, based on the Extended Gate, that fits with global supply chain requirements, optimizes the use of all available information in that supply chain, removes all operational and administrative bottlenecks in sea ports and builds on new concepts of cooperation between operators. This concept is a real business concept, with quantifiable revenue, customer base, operational requirements and responsible, identifiable company officers.

The goal in this project is further to develop a research program that will help achieve the central objective. This program consists of four research paths, all four built around a research team consisting of PhD students, master students, and a supervisory team.

### Research approach

A first research activity is to study the relationship between global supply chain requirements and integration in hinterland networks. The second research activity addresses the co-evolution of business partners and port authorities vis-à-vis hinterland networks. Thirdly, we look at the design of these networks and the role of information that can be made available from the supply chain. This research will look at the network as a whole, and at solving operational bottlenecks in parts of the network. The fourth research activity deals with the assessment of legal consequences of the changing role of several partners in the hinterland network.

### Expected results

It is expected that these research projects will lead to concrete algorithms that can be implemented in terminal operations software and help terminal operators and other service providers to develop new and improved coordination and control services in multimodal networks. In addition, this project will offer more insight in the exact service definition, an assessment of legal consequences and suitable contractual solutions, profitable business models, and a vision on the role of port authorities as enabler of multimodal hinterland development. This will also lead to new business (for instance for law firms), and a strengthening of the competitive position of Dutch mainports vis-à-vis other ports in the Hamburg – Le Havre range.