

“Methodology to assess ports and waterways on safety and capacity”

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Problem Description

Globalization trends in maritime transport are leading to rapidly growing ship dimensions and increasing flows in ports and waterways. Ports and waterways are quite inflexible infrastructures and difficult to expand. This implies that the aforementioned increase in vessel movements leads to more hazardous situations.



Port design



Research Objectives

- Describe and quantify safety and capacity in ports and waterways.
- Combine different performance indicators in a unique tool to support and assess the planning port phases (expansion or new).
- Assess and improve port designs.
- Assess risk and traffic management strategies.

Automatic Identification System (AIS)



Research Development

- 1) Safety and capacity definition and quantification
- 2) Analysis of real information:
 - AIS data
 - Authorities, Port Stakeholders or other actors needs and requirements
 - Actual Port designs
- 3) Combination of Safety & Capacity
- 4) Methodology development
- 5) Cost quantification
- 6) Case studies
- 7) Multi-Criteria Analysis

Port Stakeholders, Authorities or other actors



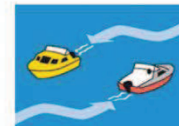
Research & Real World

The resulting methodology will be a tool for Stakeholders or Policy Makers with application to reality to:

- ❖ Assess and compare different scenarios and infrastructure designs through Multi-Criteria Analysis (MCA).
- ❖ Assessment of traffic management strategies and navigational rules.

Expected results

- ✓ Simulation-based methodology for the future assessment and design of ports and waterways.
- ✓ Real case studies both in the Netherlands and China



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