



# Project Presentation – SynchroPort



Magnus S. Eide, Tore Longva (DNV R&I)

# SynchroPort – Synchronized and cost effective utilization of ship and port

**Goal: Establish innovative decision support systems which will increase the interaction and synchronization between ship and port, thereby increasing the profitability of both ships and ports**

## Schedule

Start: *January 2007*

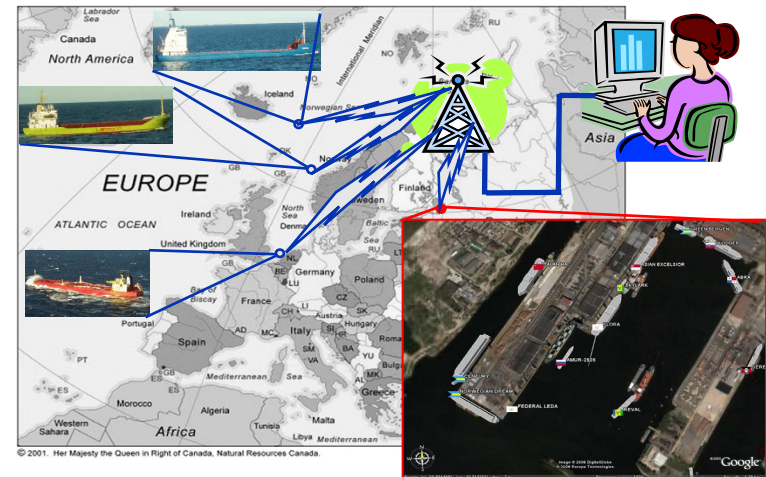
Duration: *36 months*

Budget: *5.5 Million NOK*

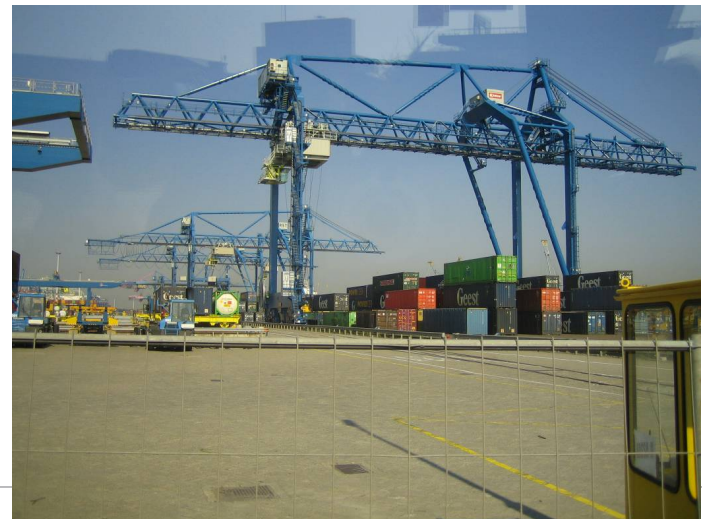
Participants: DNV, Grieg Logistics, Grieg Shipping and CMR

Sponsoring: *The Norwegian Research Council*

Project Owner: *DNV R&I*



- Increasing fuel prices and enhanced focus on environmental performance.
- By improving cooperation and planning, ships may adjust arrival time to port capacity by optimising sailing speed. This will reduce fuel consumption significantly, as 2-3 knots of speed reduction may halve fuel consumption.
- Ports may, through better synchronisation and resource planning, utilise the available dock capacity, and consequently increase productivity and profitability.



# Ship Benefits

## Effect of predicting 5 hours delayed docking in port

A large tanker consumes: 100 t of fuel per day at **400 US\$/t** , reducing the speed from 14 to 12 knots reduces fuel consumption by approximately **50%**

### Scenario:

- 500 nm from port, sailing at 14 knots, the ship reports ETA 36 hours.
- Reply from port: recommended ETA is 41 hours
- Ship adjusts speed to **12 knots -> New ETA 41 hours**
  - 36 hours at 100 t fuel per day = 150 t fuel
  - 41 hours at 50 t fuel per day = 85 t fuel

**43 % reduction**

**26 000 US\$ saved**



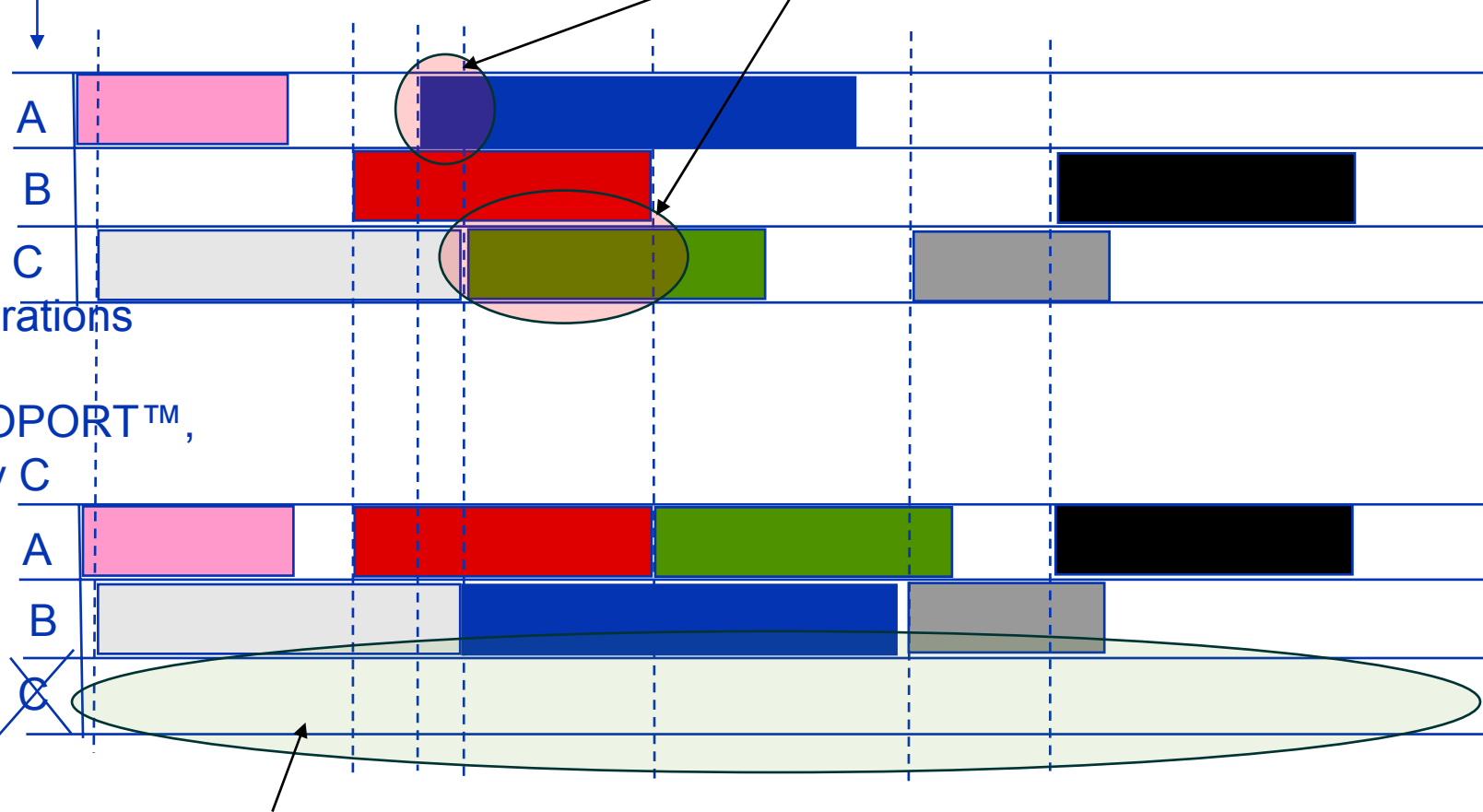
- Ships and ports using the model will become mutually attractive, and gain a competitive edge.
- SynchroPort may facilitate continuous, optimal utilisation of port resources, avoiding idle time increasing volume throughput.
  - Will also benefit ship operators.
- SynchroPort may facilitate regional cooperation between ports, effectively distributing traffic flow to ports with available resources, based on a comprehensive overview of incoming ships and combined port resources.

- SynchroPort will improve port profitability by effectively managing existing resources and facilities based on better advance planning of ship arrivals.
- In ports with spare capacity, SynchroPort will contribute to optimising use of resources, through distributing traffic load evenly in time enabling a rational handling of the trade volume with minimum use of resources (illustration on next slide)



# Tool for dimensioning ports

Quays in  
one port



LOSSES

SAVINGS

Time all operations  
with  
SYNCHROPORT™,  
close quay C

- WP 1 Data collection and analysis:
  - Use available information on historic ship traffic/port calls to analyse ineffectiveness in shipping.
  - Use historic information to demonstrate the effects of SynchroPort solutions.
- WP 2 Port resource planning:
  - Analyse available resources in port (crew, cranes, docks etc.)
  - Identify possible organisational and technical solutions to improve use of available resources.
- WP 3 Port call planning for ships:
  - Analyse needs for information and planning of a port call
  - Identify possible organisational and technical solutions for optimal execution of port calls.
- WP 4 Model of interaction:
  - Based on the other WP's, analyse the interaction between ship and port.
  - Develop a model for enhanced organisational interaction and communication between ship and port.
- WP5 Prototype development – “Demonstrator”



---

[www.dnv.com](http://www.dnv.com)

---

**For more information:**

Det Norske Veritas  
DNV Research & Innovation

Tore Longva, +4767577314  
[tore.longva@dnv.com](mailto:tore.longva@dnv.com)

Magnus S. Eide, +4767577339  
[magnus.strandmyr.eide@dnv.com](mailto:magnus.strandmyr.eide@dnv.com)