High volume scanning in the Port of Rotterdam

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March 2008
2013: Maasvlakte 2
4 new terminals, growing to 30M TEU

- Ambition: advanced and efficient inspections
Why High Volume Scanning?

- Mega-volumes demand new inspection concepts.
- Export (Outbound) scanning requires other concepts than Import (Inbound) scanning.
- When integrated in the logistics, high volume scanning can be the most efficient scanning concept.
- Required Technology is available.
“Traditionally, Customs administrations inspect cargo once it has arrived at their domestic ports. Today, there must be an ability to inspect and screen a container before it arrives.”

“The Customs administration should conduct outbound security inspection of high-risk containers at the reasonable request of the importing country.”
Advantages High Volume Scanning

- New technology allows for Integration in the Logistics: No extra moves. No delay.
- Data sharing (WCO principle): All possible scanning-picture selections will be available for Customs of exporting AND importing country.
- Second-line inspection (stripping, high energy x-ray) can be more effective (higher hit-rate).
- Opportunities for third parties to add private systems.
The Rotterdam Philosophy

- High Volume scanning of Outbound Containers.
- Automated inspection-lanes serving several terminals.
- Not all pictures are consulted: only a selection based on risk analysis (WCO).
- Advanced data sharing between Customs.
- Vice Versa: Rotterdam’s Inbound containers have been scanned in the exporting country resulting in reduction of (logistically complicated and costly) inbound scanning.
Our Vision:
Inspections integrated in Logistics

Rotterdam Automated Container Inspection Lane
Joint project of Customs, Port Authority and Port Business
Automated Container Inspection Lanes

Rotterdam Automated Container Inspection Lane
Joint project of Customs, Port Authority and Port Business
Flow of export containers
- from hinterland to the sea -
Automated container inspection lane
Customs – Port Authority cooperation

SHARED VISION is essential and should address:
- Radiation Detection and Non Intrusive Scanning
- Inbound and Outbound Cargo flows
- All modalities (Road, Rail, Barge, Transhipment)
- All port areas
## Example Inspection matrix

<table>
<thead>
<tr>
<th>terminal</th>
<th>ROAD</th>
<th>RAIL</th>
<th>BARGE</th>
<th>TRANSHIPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>scan Inbound</td>
<td>RA-CS</td>
<td>RA-TS*</td>
<td>RA-CS</td>
<td>RA-TS*</td>
</tr>
<tr>
<td>nuclear Inbound</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>scan Outbound</td>
<td>RA-CS</td>
<td>HV-TS</td>
<td>RA-CS</td>
<td>HV-TS</td>
</tr>
<tr>
<td>nuclear Outbound</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**RA = Risk Analysis**  
**HV = High Volume Scanning**  
**TS = Terminal scan**  
**CS = Central Scan**  

*Part has been scanned in exporting port*
2013: Maasvlakte 2
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- Ambition: advanced and efficient inspections
Thank you for your attention
World ports for a better climate

Rotterdam, 9 – 11 July 2008

A C40 Cities Climate Leadership Group event, organised by the Port of Rotterdam, the Rotterdam Climate Initiative and the Clinton Climate Initiative
Climate change

- Address global warming issues
- Improve quality of life
- Implement energy savings
Scope and influence

- **Port of Rotterdam Authority**
  - Influence: ++
  - Effect: - -

- **Port and industrial complex**
  - Influence: +
  - Effect: +

- **Supply chain**
  - Influence: +/-
  - Effect: ++
Rotterdam Climate Initiative

Target: 50% CO₂ reduction in 2025 compared to 1990. Initiated by the Mayor of Rotterdam. Partners: City of Rotterdam, Deltalinqs, DCMR Environmental Protection Agency, Port of Rotterdam Authority
Background

- C40 Cities formed by Ken Livingstone
- Supported & assisted by the Clinton Climate Initiative
- In 2008 three main subjects: aviation, ports and road congestion
The conference will focus on:

- Reducing emissions from ocean-going vessels
- Reducing emissions from terminal operations
- Reducing emissions from inland transport
- Energy-efficiency and renewable energy
- CO2 footprint

- 2 side events (Carbon Capture and Storage, Biofuels)
- www.wpccrotterdam.com
1. Ocean-going shipping

- Support development of clean shipping
- Promote and accommodate shore-side power
- Consider speed reductions
- Develop incentives based on a shared system of environmental indexing
- Urge the IMO to accelerate
2. Port and terminal operations

- Promote CO$_2$ reduction on terminals (e.g. in lease contracts)
- Promote co-siting
- Develop sustainable nautical services
- Encourage shore-side power for inland barges
- Improve energy efficiency of buildings
3. Hinterland transport

- Use efficient and innovative logistics
- Modal shift towards clean and energy efficient modes of transport
- Improve environmental performance of all modes
4. Energy savings and renewable sources

- Energy efficiency
- Promote use and generation of renewable energy
- Promote transport and processing of certified biomass
5. CO$_2$ footprint

- Tools for the auditing and quantification of the CO2 footprint (port authority, port complex)
- Development of a shared instrument used by ports worldwide to assess and reduce footprint
- Proposals for next steps
6. Implementation

- Create institutional mechanisms to drive continuous emission reductions and innovation
- Monitor and evaluate the implementation of measures
- Advocate the agreed initiatives through an active leadership role
- Organise and facilitate technology transfer, education and exchange of best practices
Ports and cities endorse the principle of a joint approach to improve air quality and reduce greenhouse gas emissions
Means

- Lobby for stricter emission criteria
- Projects to:
  - Reduce emissions
  - Serve as an example
  - Stimulate R&D
- Offset emissions from port expansion
- Improve air quality information
Projects – Port of Rotterdam Authority

- All our vessels on clean truck diesel fuel (EN95)
- New vessels equipped with sooth filters and post-combustion treatment
- Clean cars + incentives for clean leasing (now 10% of lease-fleet bi-fuel)
- Carbon footprint calculation
- Extensive research
Projects – Port industrial complex

- All nautical service providers on clean truck fuel
- Shore power for inland vessels (now 25%, rest in 2008)
- Clean inland vessel program (CCR 2)
- Co-siting to minimise energy consumption
- Sustainability in tenders and lease contracts
- Carbon footprint monitoring and management
- Carbon Capture and Storage
Carbon Capture and Storage

- CO$_2$ is removed from exhaust gasses, cleaned, dried and compressed for transport
- Pipelines interconnect facilities and storage
- Empty oil and gas fields are re-used to contain the captured CO$_2$
CCS Network

Norway, UK

- 2008-2012: expansion existing network + 2 demo storage locations
- 2012-2020: direct connection Rotterdam-North sea + connection power plants
- 2012-2025: connection to Antwerp and Germany
- 2915-2025: export with vessels
Projects – Supply Chain

- Smart logistics (sustainable mobility program)
- Modal shift from truck to barge and train (in lease contracts)
- Incentives for clean ships (2009/2010)
- World Ports Climate Conference 2008: the world’s ports agree on actions to reduce GHG emissions