CHESSCON
Simulation
Terminal planning and optimisation

- Traffic
  - traffic network
  - lane allocation
- Strategies (TOS)
  - fine-tuning
  - testing
- Equipment
  - technical data
  - device requirement
- Layout
  - terminal areas
  - slot requirement
- Quay crane
  - productivity
  - crane requirement
- Terminal capacity
  - quay side
  - stacking area
  - gate area
  - intermodal yard
- Saisonality
- Annual workflow
- Operation system
  - type of equipment
  - handshake
- Cost evaluation
  - investment
  - operation
- Preplan

level of detail
- low

preplan. planning start-up operation

Traffic - high

SCUSY SIMULATION

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Traffic - high
CHESSCON Simulation

Tool for decision making processes on the strategic and design level

- planning of new terminals
- expansion or reorganisation of existing terminals

Support and information concerning the questions

- best type of equipment
- no. of facilities
- changes in layout
- test of different strategies for operation
Find the best terminal solution

- Planning of new terminals
- Reorganization of existing ones
- Utilization of types of equipment regarding handshakes
- Evaluation of handling strategies
- Applicable for any terminal layout
- Easy-to-operate user interface
- Intuitive for users without specific expertise in simulation technique
- Online animation
CHESSCON Simulation

Main modules

Input data
- Layout
- Production
- quayside
- landside
- Equipment
- number
- technical data
- Strategies
- e.g. no. of chassis per
- STS crane

Simulation

Output data
- Productivity of
- STS cranes
- Utilisation of chassis,
- RTGs, straddle
- carriers, FLT

Animation

Service time for
- external trucks
- Service time for
- railway operation

Analysis of the bottlenecks and definition of new scenarios for improvement
Quayside operation
Quayside operation – FastNet concept (APM Terminals)
Several new technologies to increase quay productivity

→ Will terminal's equipment cope with this demands?
Layout definition
Various layouts, which one is the best?
Animation
The decision from an economical view is supported based on operational costs and investment.

### Comparison of operation systems selected equipment use

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<th>SC 1</th>
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<td>costs per move [€]</td>
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<td>157.44</td>
<td>132.76</td>
</tr>
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</table>
Use the results of simulation for economic aspects as well as for ecologic aspects.

But what about the sustainability of the models?
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Thank you for your attention!

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