

Automation in Ports and Terminals Best Practices and their Applicability to the Baltic Sea Region

Baltic Sea Ports and Shipping – Tallin 28 September 2017

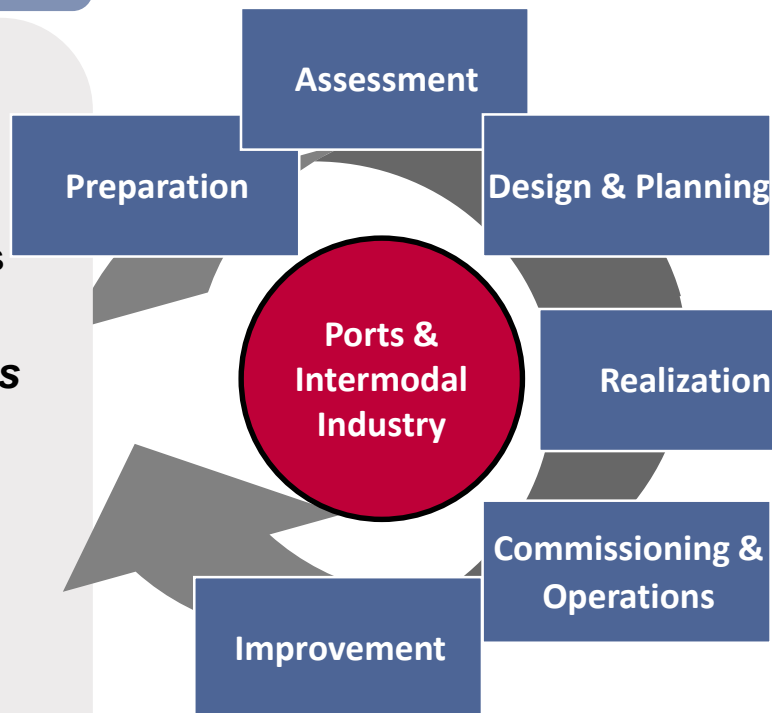


HPC covers full Project Cycle

Vast experience for ports and the intermodal industry

Our Focus

- **Ports**
 - Container terminals
 - Bulk terminals
 - Cruise ship terminals
- **Intermodal facilities**
- **Logistics facilities**
 - Rail terminals
 - Inland ports



Our Clients

- **Private sector**
 - Terminal operators
 - Logistics service providers
 - Investors
 - Banks
- **Governmental bodies**
 - Port authorities
 - Public institutions
- **Int. organisations**
 - World Bank
 - United Nations
 - Others

HPC at a Glance

We connect the crucial elements for automation

Port Planning & Operations



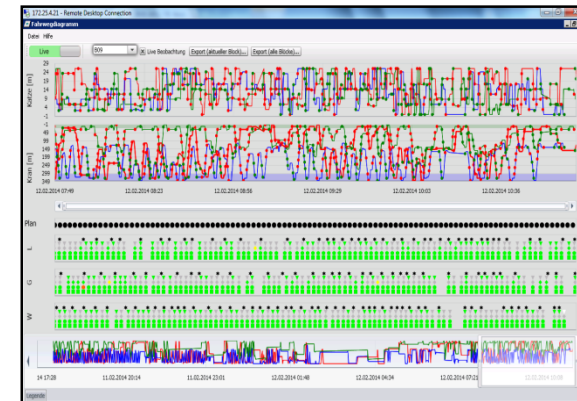
- Master planning
- Simulation
- Privatisation
- Implementation / Mgmt
- Optimisation

Equipment



- Procurement assistance
- Construction supervision
- Rehabilitation
- Asset Lifecycle Mgmt
- Workshop optimisation

IT



- IT strategies
- Supplier selection
- TOS implementation
- Tailored solutions

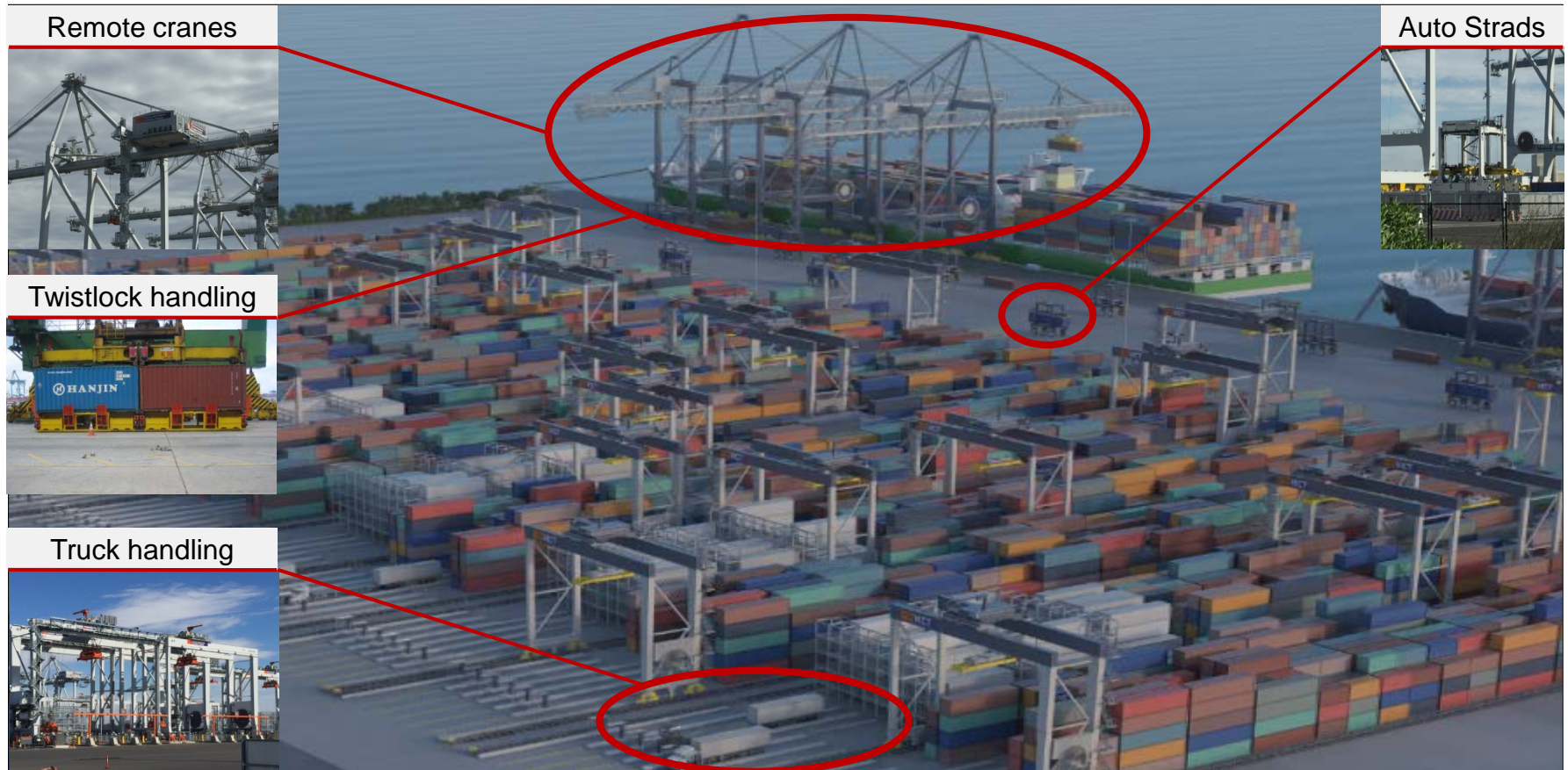
The Perception of what Terminal Automation is

Automation does not have to be full automation of all processes



Webb Dock Container Terminal in Melbourne

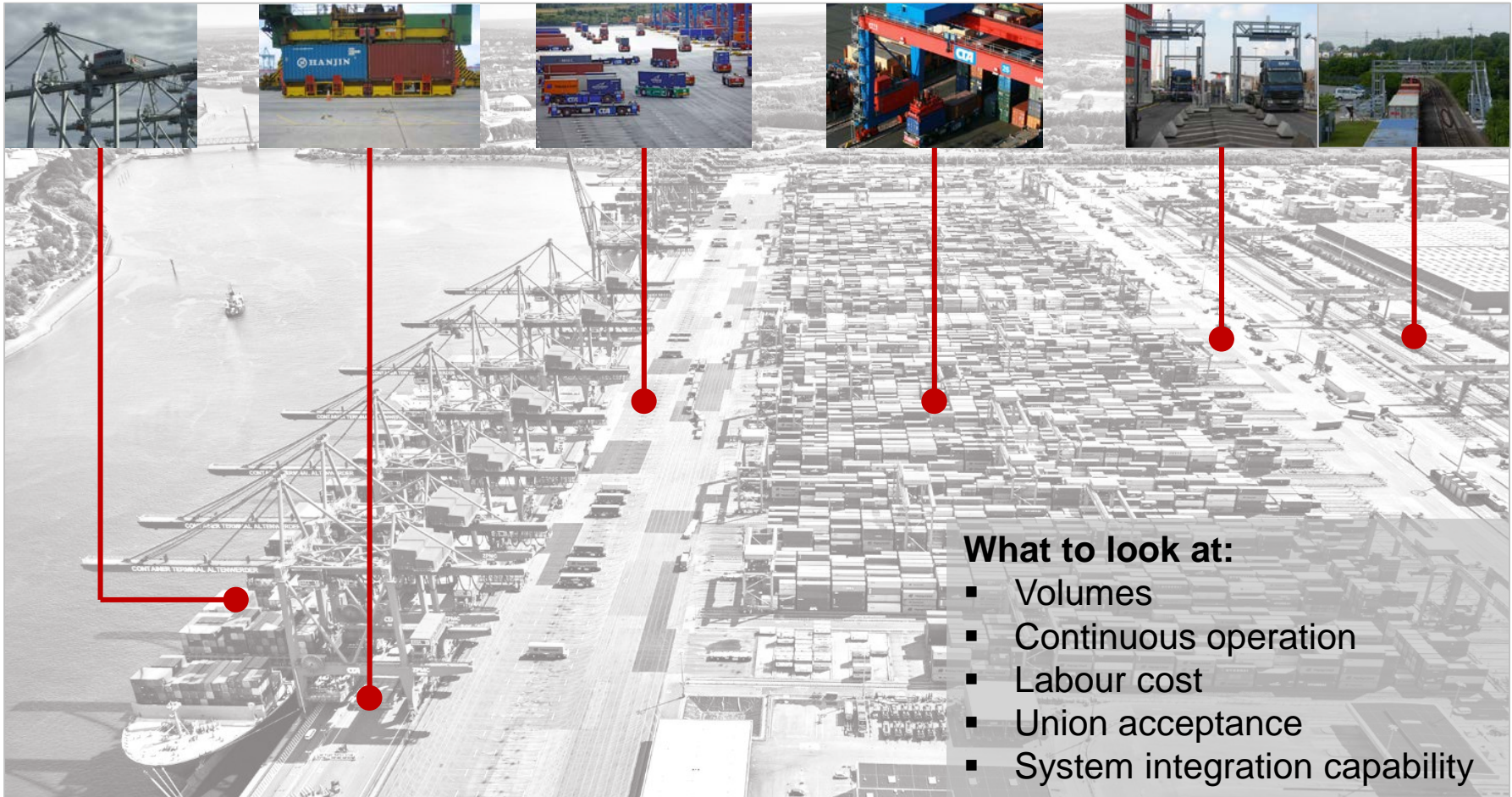
The most automated container terminal in the world intensified automation – but stayed on path



OCR images controlled from Manila – why not expand the meaning of remote control for STS to the same place and apply across the terminal portfolio?

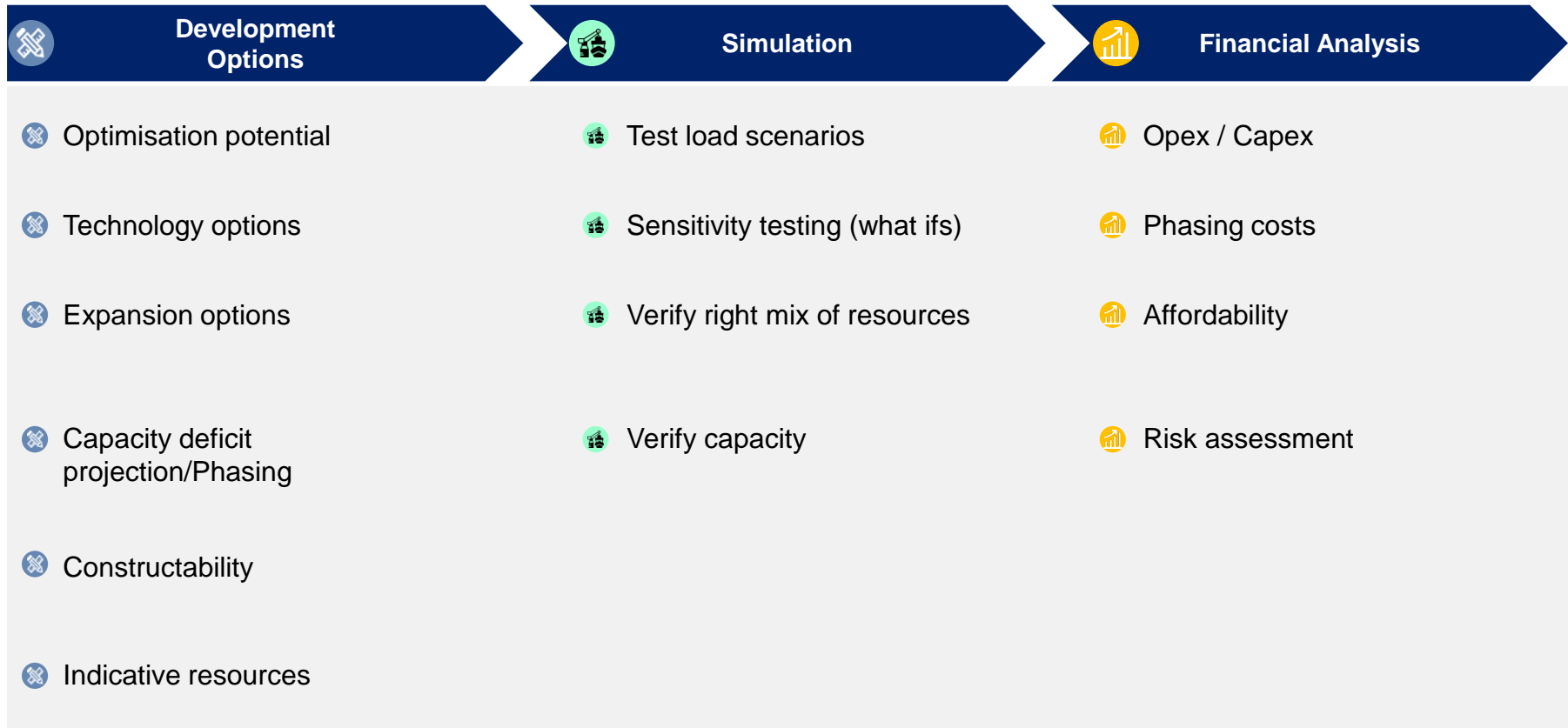
Finding the right Level of Automation

Understand the benefits and complexity of automation is key in determining the right mix



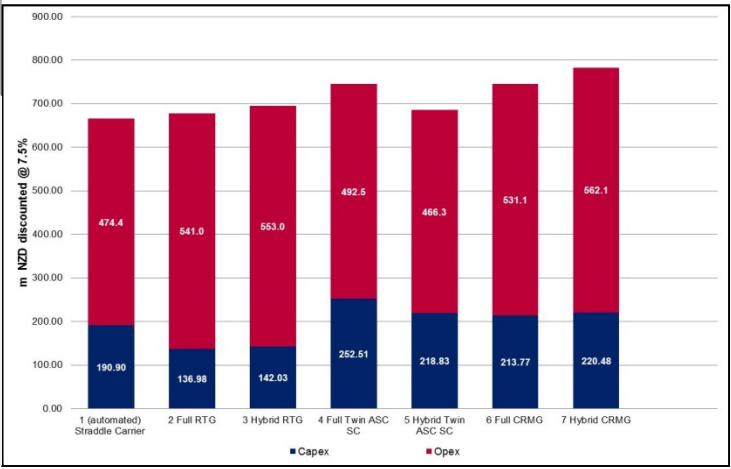
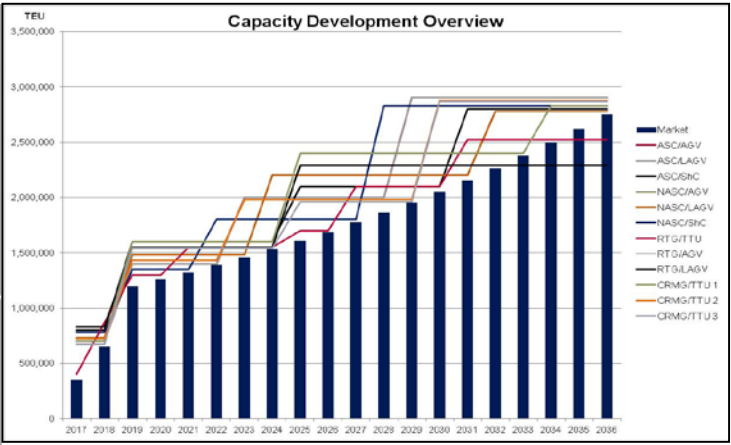
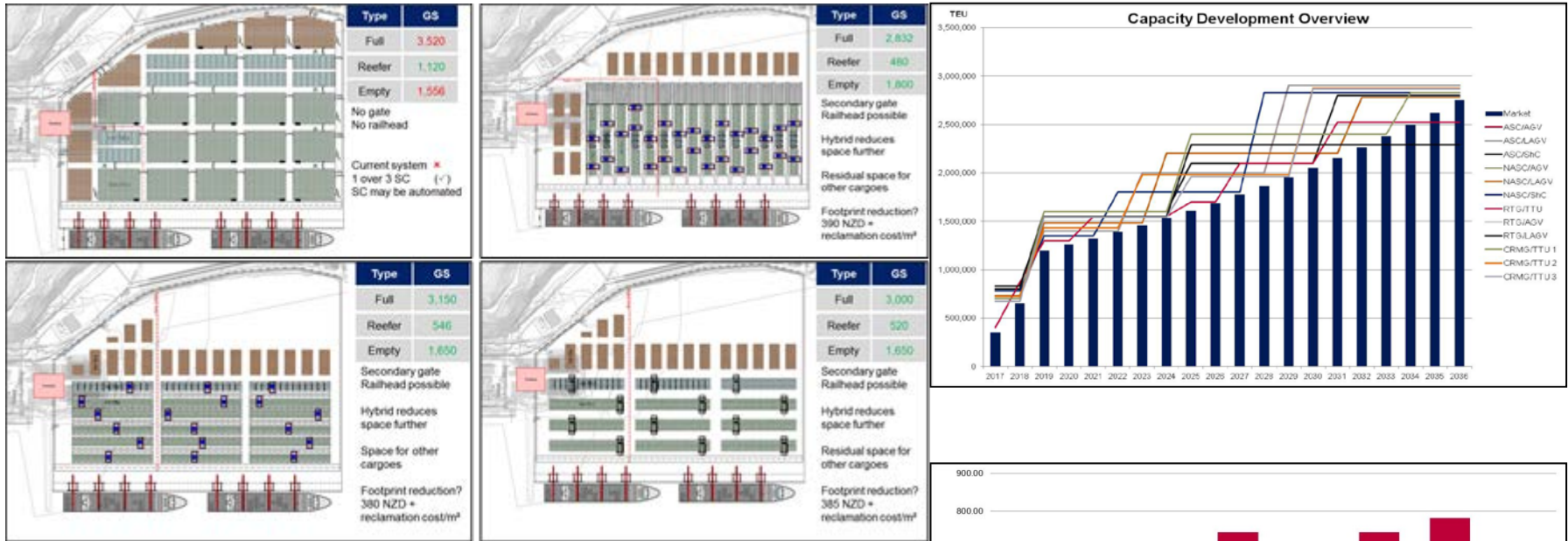
Three-staged Approach to Planning

Structured approach to planning reveals adequate level of automation for facility



Test Options to understand Phases and Impact

There is no one-fits-all solution

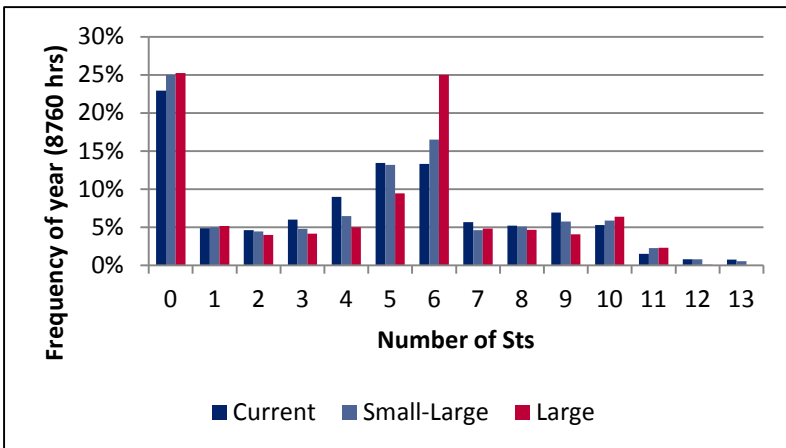
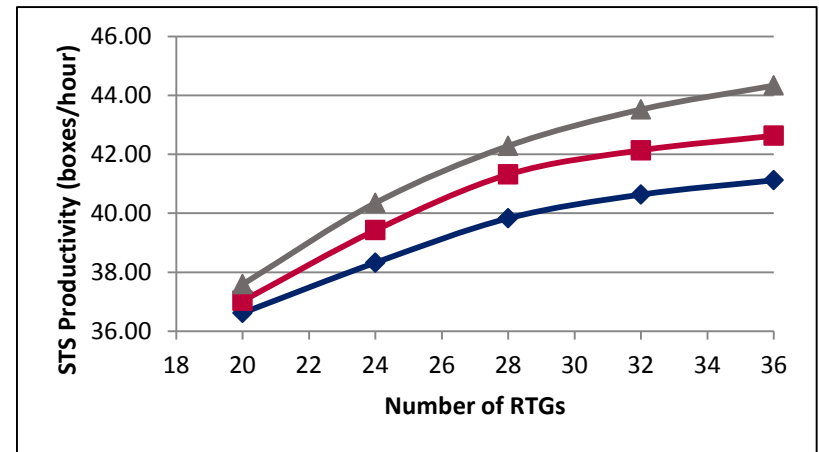


- Layout options are turned into capacity
- Service level requirements indicate the resource requirements
- Costs ultimately determine the most suitable current level of automation

→ Retain flexibility to increase automation down the road

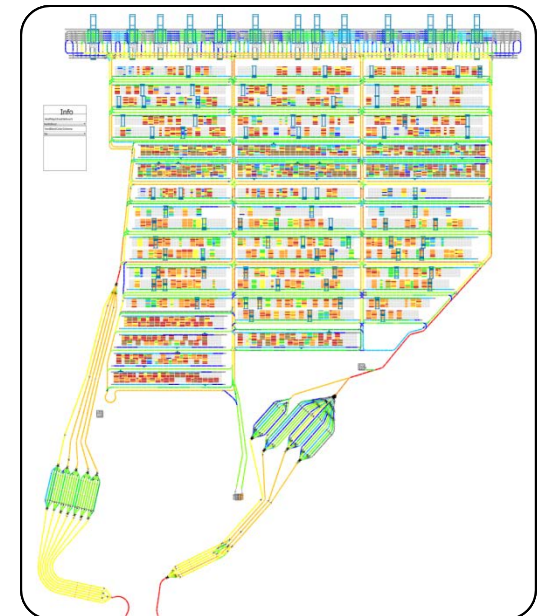
Verify the Plans by Simulation

Simulation returns valuable insights into the performance of the terminal



Container Type Distribution (full, MT, reefer)

Heat Map: Load Repetitions



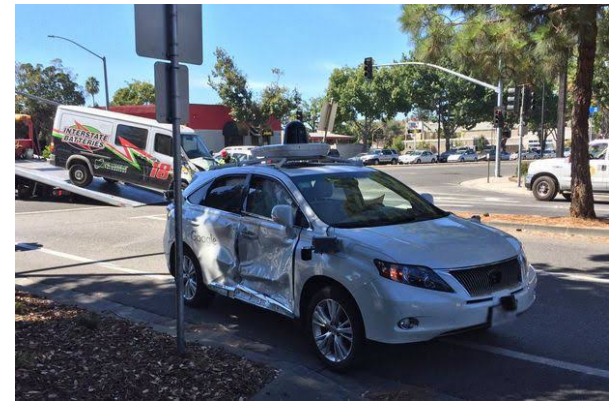
What is next – now?

Digitisation, Smart Ports and integration of the supply chain promise significant optimisation



What is holding us back to go further faster ?

Automation must not compromise work safety – where unexpected people action is the problem

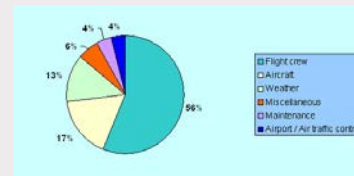


Human error

Why not disconnect the container from the chassis

Perceptions

64% of airplane crashes are caused by human error – still most people would not board an autonomous flight



The Google Car

Of the first 20 accidents since test trial - 1 caused by the google car

Questions?

For further information please contact

HPC Hamburg Port Consulting GmbH

Dennis Koegeboehn

Partner

Container Terminal Altenwerder

Am Ballinkai 1

21129 Hamburg

Germany

Phone: +49 40 74008-192

Fax: +49 40 74008-133

Mail: d.koegeboehn@hpc-hamburg.de