

# SMART RAIL

Smart Supply Chain Oriented Rail Freight Services

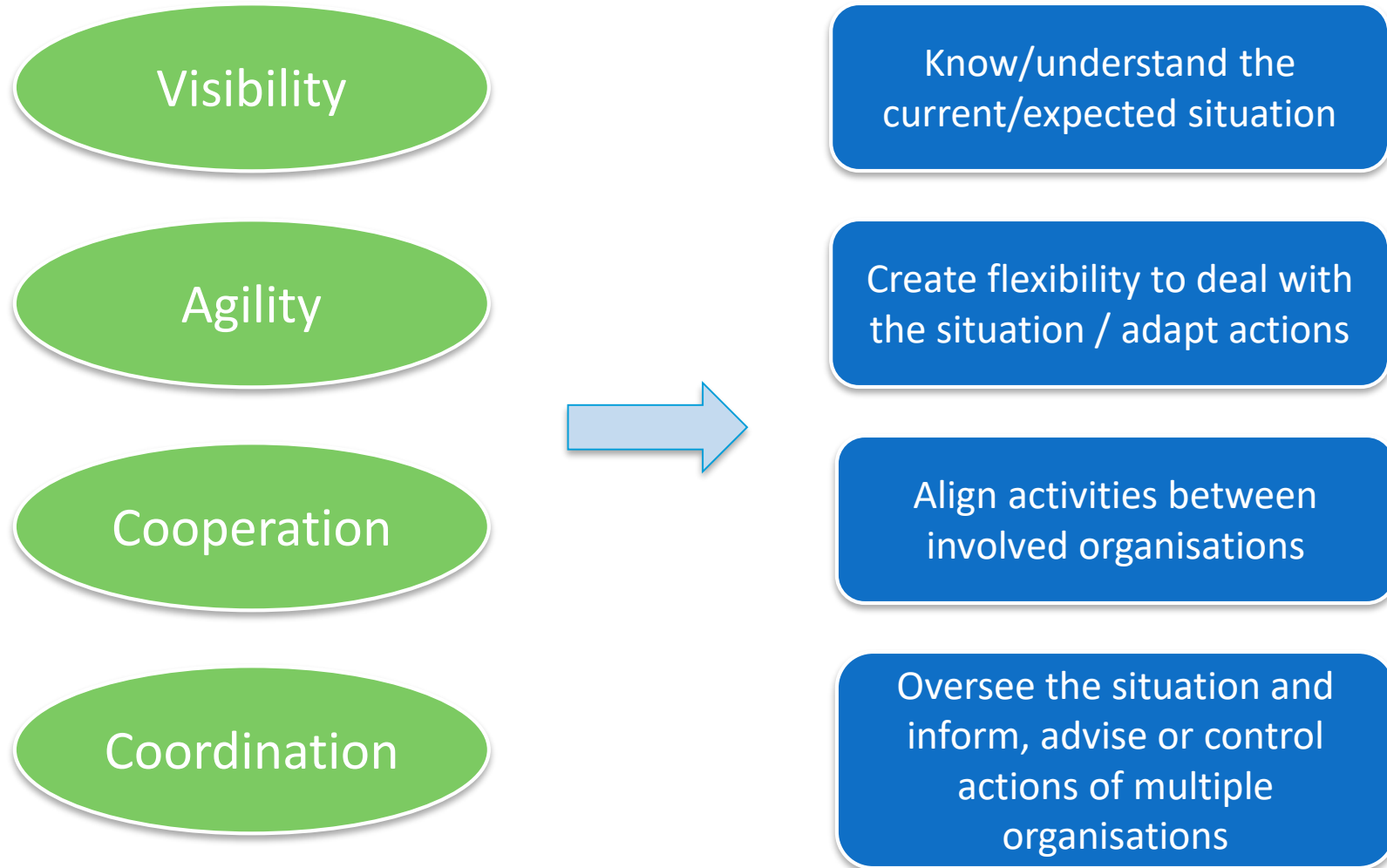
*Horizon 2020 – European Commission*

**Making rail more attractive to existing and new freight customers**

*Thijs Smit- TNO*

Vienna, 18<sup>th</sup> of April 2018

# Requirements for improvement of reliability in rail freight transport



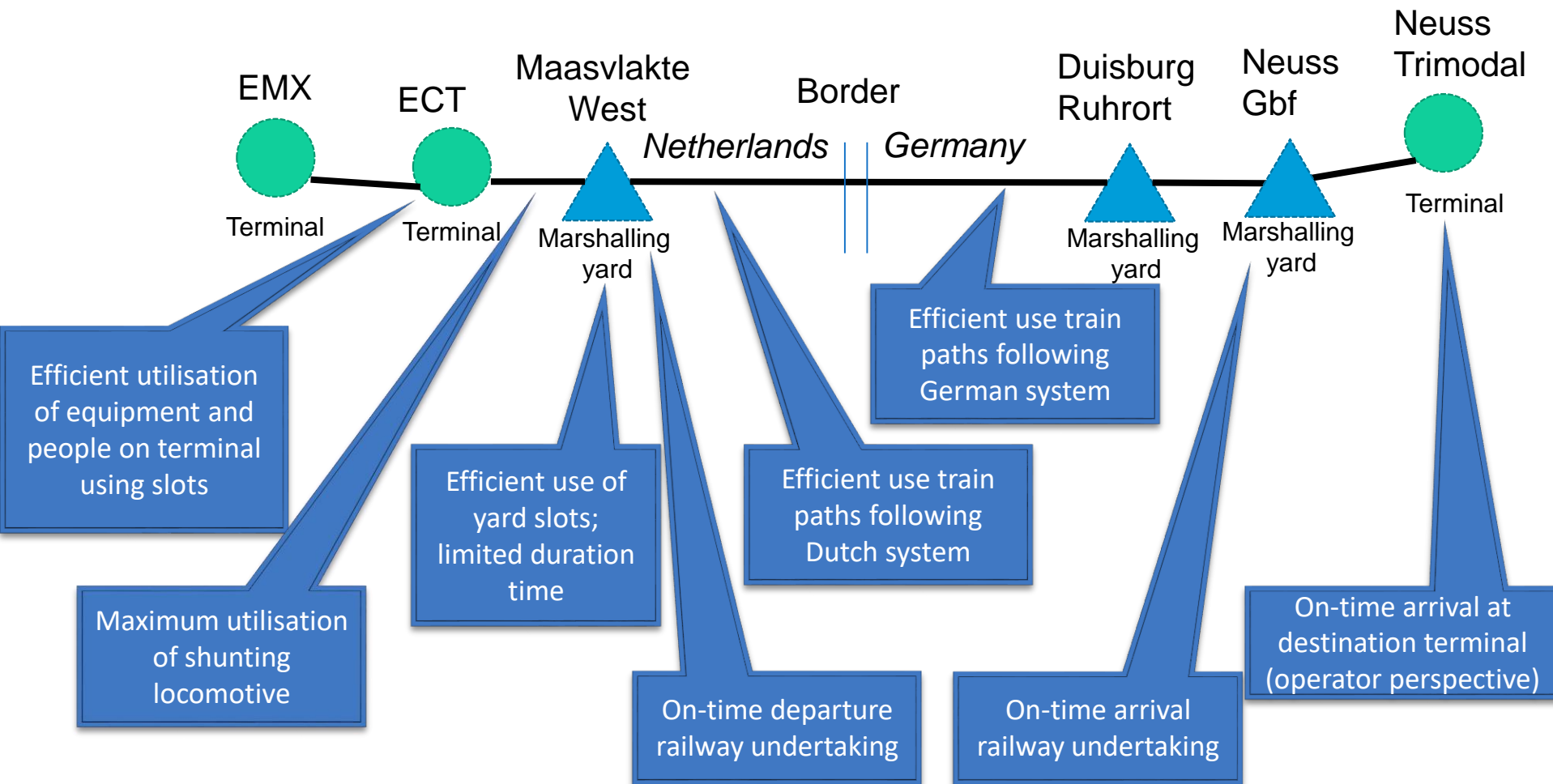
# SmartRail: testing ground for realising impact

Three initiatives were conducted:

1. Intermodal transport on the corridor Rotterdam – Neuss  
**(visibility, coordination and agility)**
2. Port Study | Aligning activities in Ports  
**(agility, cooperation and coordination)**
3. Large planned and unplanned disruptions in the rail chain  
**(visibility, agility, cooperation and coordination)**

# 1: Intermodal transport on the corridor Rotterdam – Neuss

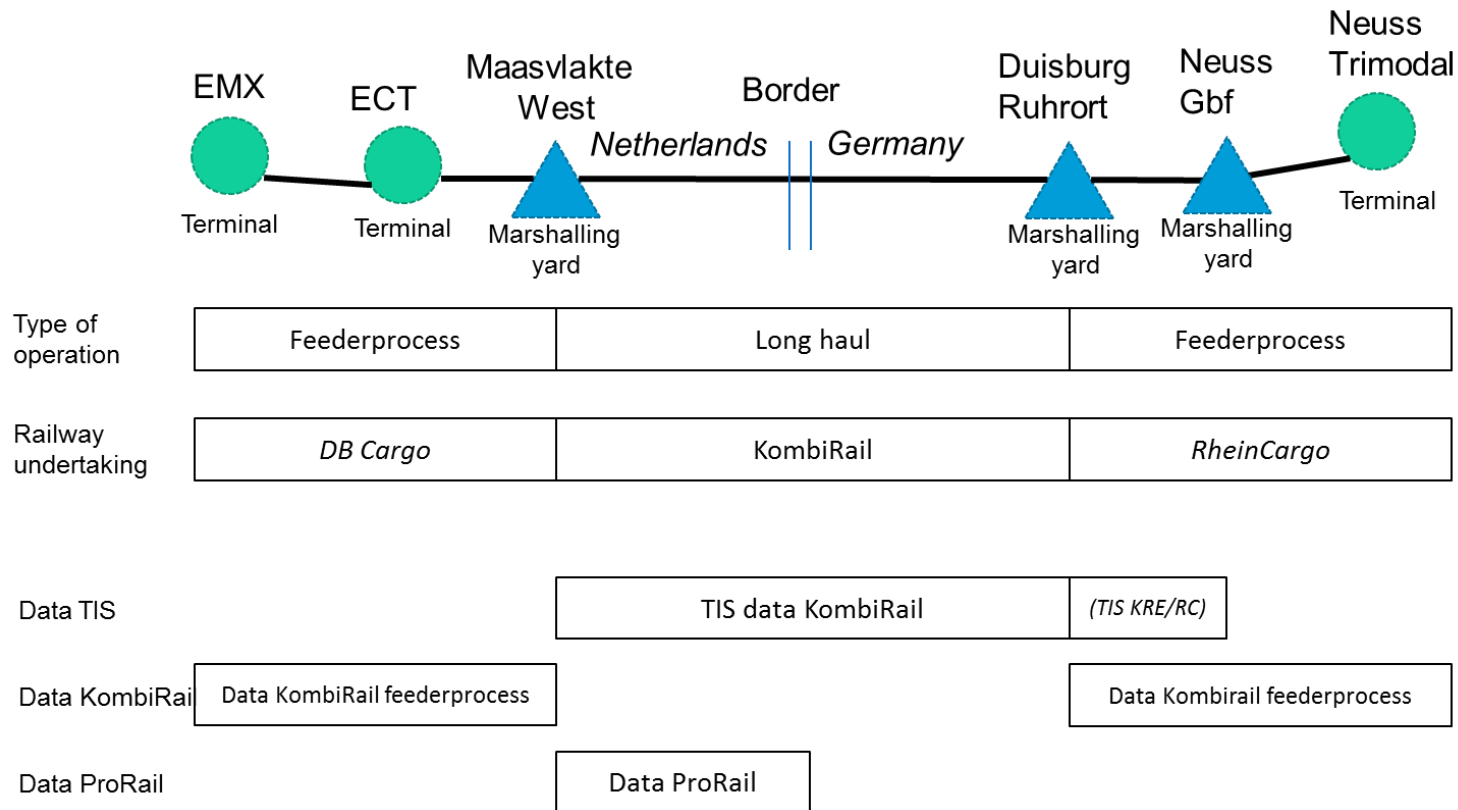
## | Different interests and little coordination



**Many different stakeholders involved (RU's, operator, IM's, Terminals)**

# 1: Intermodal transport on the corridor Rotterdam – Neuss

## | No end-to-end visibility of the train service



**Fragmentation of data**

# 1: Intermodal transport on the corridor Rotterdam – Neuss

## | Improvement measures

### Step 1: use GPS trackers



#### IMPACT:

1. End-to-end visibility
2. Improvement of data quality (real time)
3. No dependency of stakeholders

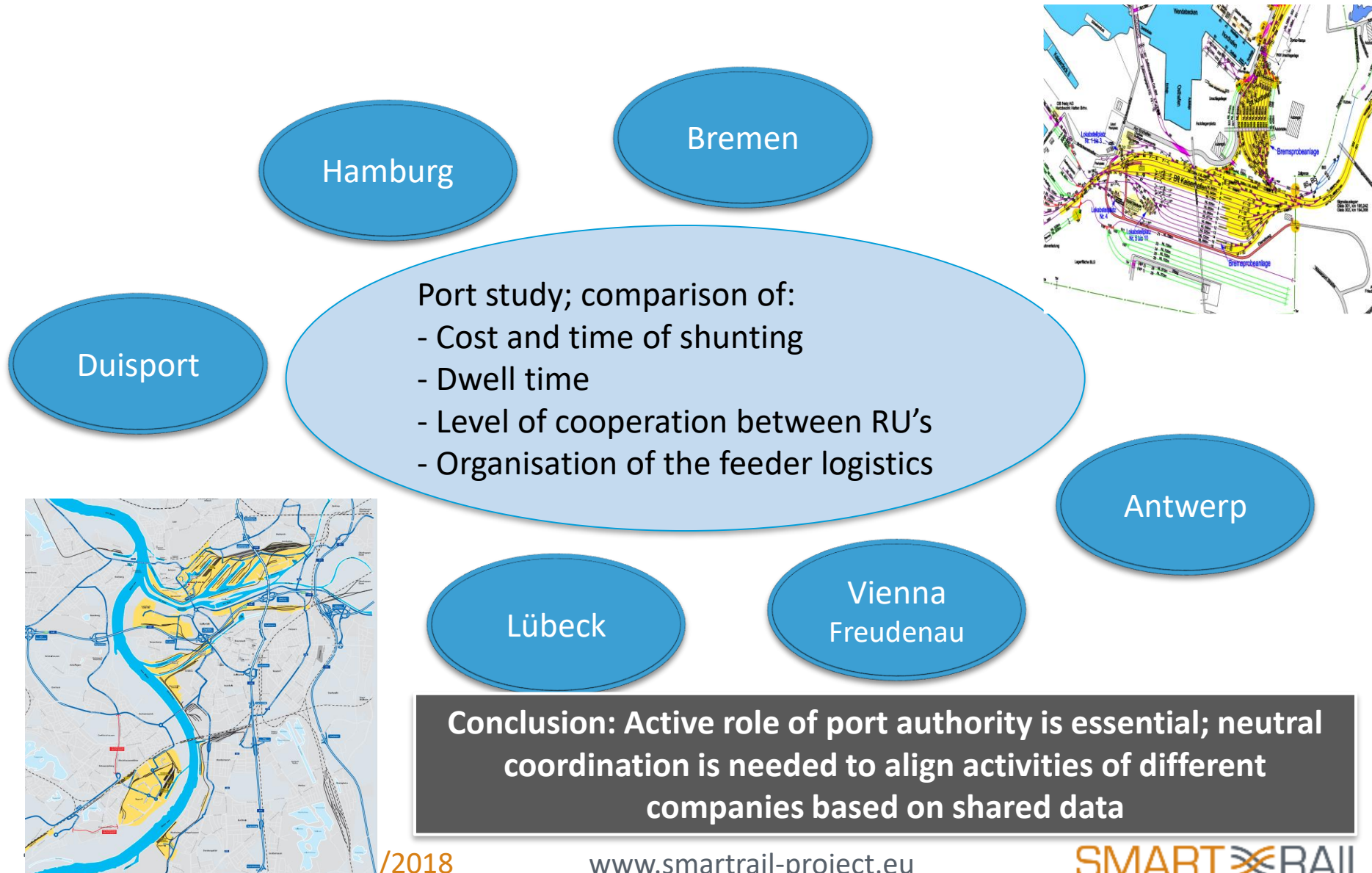
### Step 2: develop and use a webtool

Planning: 3h 0m Actual: 0h 20m Performance: 900% Deviations: -3h 20m	<b>RWG</b> Planning: 8h 0m Actual: 4h 10m Performance: 192% Deviations: -4h 10m	Fri 1 Sep 2017 STA: 04:00 ATA: 07:29 Delayed: +3h 29m	Fri 1 Sep 2017 STD: 12:00 ATD: 11:39 On Time: +0h 20m	<a href="#">Add comment</a>
Actual: 2h 15m	<b>Maasvlakte West</b> Planning: 0h 30m Actual: 3h 30m Performance: 14% Deviations: +3h 0m	Fri 1 Sep 2017 STA: 00:30 ATA: 03:39 Delayed: +3h 9m	Fri 1 Sep 2017 STD: 01:00 ATD: 07:09 Delayed: +6h 9m	<a href="#">Add comment</a>
Actual: 1h 20m	<b>Emmerich</b> Unplanned Actual: 0h 19m	Fri 1 Sep 2017 ATA: 01:04	Fri 1 Sep 2017 ATD: 01:24	<a href="#">Add comment</a>
Planning: 1h 0m Actual: 0h 49m Performance: 122% Deviations: -0h 11m	<b>EDRH_Vor.</b> Planning: 0h 57m Actual: 4h 0m Performance: 24% Deviations: +3h 3m	Thu 31 Aug 2017 STA: 20:00 ATA: 19:43 On Time: +0h 16m	Thu 31 Aug 2017 STD: 20:57 ATD: 23:43 Delayed: +2h 46m	<a href="#">Add comment</a>
Planning: 1h 30m Actual: 0h 11m Performance: 818% Deviations: -2h 41m	<b>KNG</b> Planning: 0h 30m Actual: 0h 36m Performance: 83% Deviations: +0h 6m	Thu 31 Aug 2017 STA: 18:30 ATA: 18:16 On Time: +0h 13m	Thu 31 Aug 2017 STD: 19:00 ATD: 18:53 On Time: +0h 6m	<a href="#">Add comment</a>

#### IMPACT:

1. Ability to register cause of disruptions to identify improvements
2. Stimulating problem solving thinking

## 2: Port Study | Aligning activities in Ports





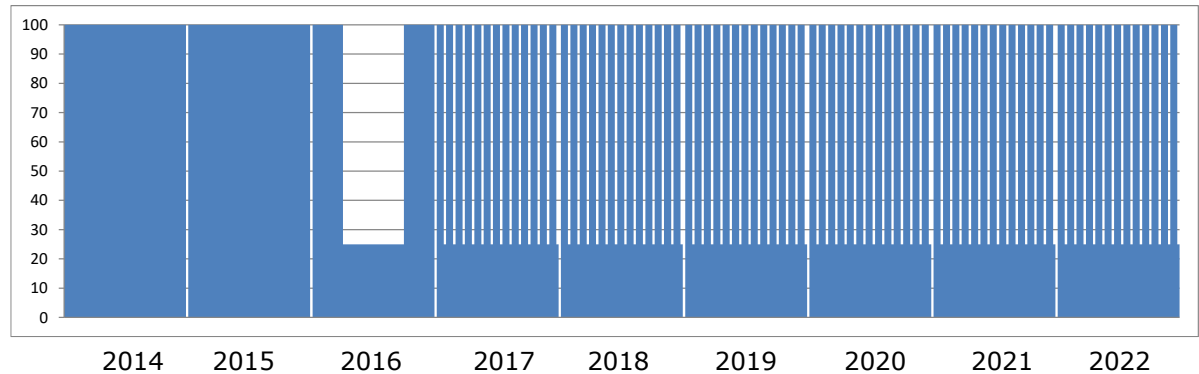
# 3: Large planned and unplanned disruptions in the rail chain | Third Track

## Main conclusions:

- Due to dedicated attention of several stakeholders, punctuality during this period was very high

Agility V

Visibility V



- Key factors for success:
  - the shared urgency amongst government and private companies
  - the active role of the Ministry of Infrastructure and Environment, ProRail, Port Authority Amsterdam and Port Authority Rotterdam,
  - the project organisation with a steering group and a working group together with government and private companies

Cooperation V

Coordination V



# 3: Large planned and unplanned disruptions in the rail chain | Rastatt

October 02, 2017

Rastatt was a disaster for rail freight.

Visibility **X**

Agility **X**

German chemical industry: shift to barge and road

KombiVerkehr: economical nightmare

**DB: railway Karlsruhe-Basel remains closed till 7th of October**

Published on 23-08-2017 at 09:59

Cooperation **X**

No Contingency Plans in place

Coordination **X**

93. 05/04/20

RAIL

# Making rail freight more attractive | Conclusions and recommendations

Stimulate mental shift: thinking in possibilities by preparing and using alternatives in cooperation with other stakeholders

*Essential requirement for agility, cooperation*

Stimulate coordination: alignment of activities over a larger number of stakeholders

*Essential requirement to deal with the fragmentation in the rail freight market*

Stimulate creation of visibility in the chain including data analytics and predictive analytics

*Essential requirement for agility, cooperation and coordination  
and finally for improvement of reliability*

# SMART RAIL

**TNO** innovation  
for life

BD rail services

**ProRail**

**UNIRESEARCH**

**eder  
log**

**Panteia**  
Research to Progress

**SEACON**  
LOGISTICS

**CER**  
CENTRE FOR  
EUROPEAN  
RAIL

**railistics**

**ECG**

**ZARAGOZA LOGISTICS CENTER**

**TankMatch Rail**  
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**iti**



**toi** | Institute of Transport Economics  
Norwegian Centre for Transport

**ECCO**

**abirail**

**H-Log**

**Port of Rotterdam**