



Port Road Management

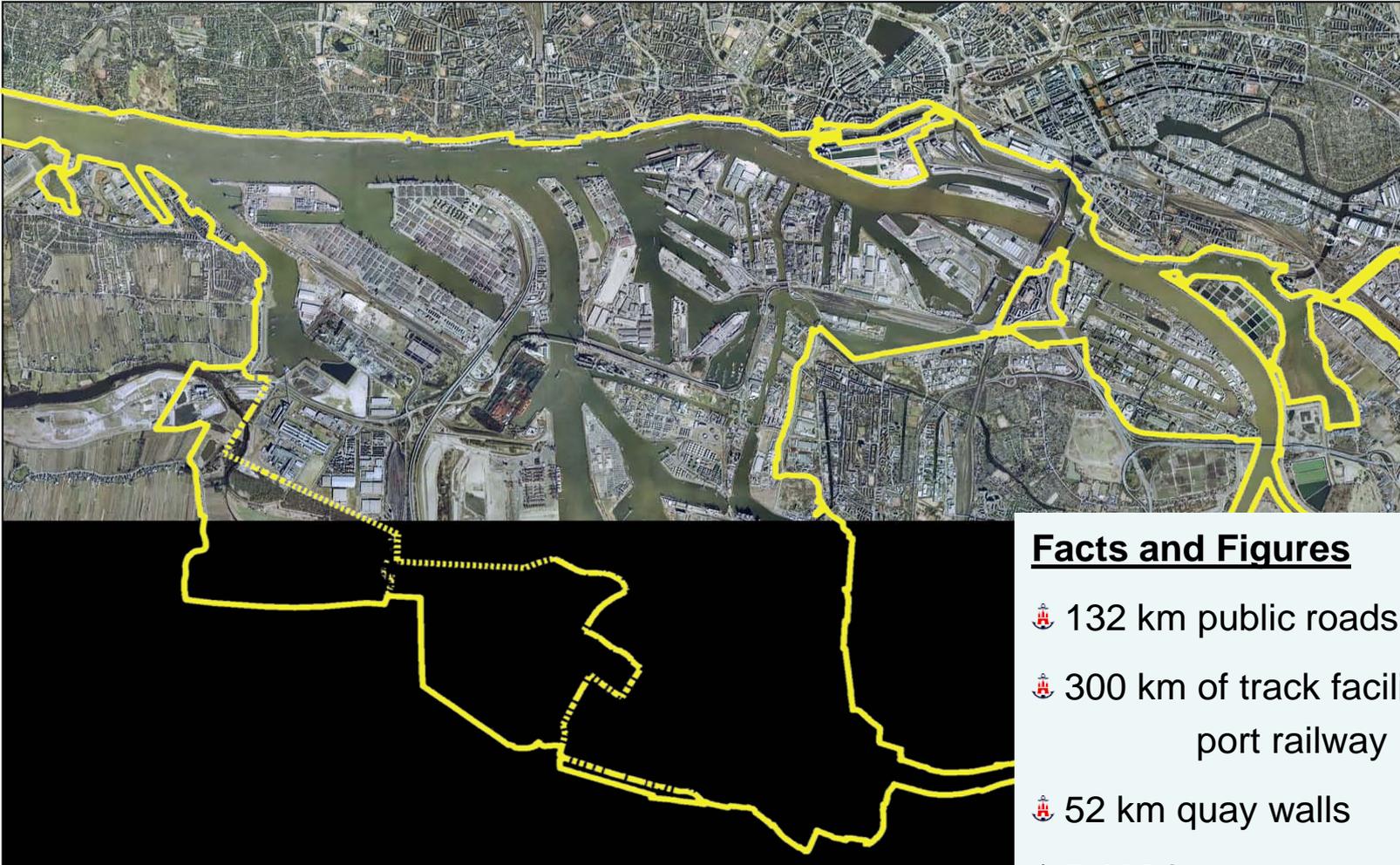
High level Transport services for
low carbon Cities
Shanghai, November 2011



Structure

- 🚚 Facts and Figures about the Port of Hamburg
- 🚚 Fields of action in Traffic Management
- 🚚 DIVA (Dynamic Information on traffic Volumes in the Area of the port) – LED Message Signs
- 🚚 Next steps / Outlook

Port of Hamburg



Facts and Figures

- 🚧 132 km public roads in the port
- 🚧 300 km of track facilities of the port railway
- 🚧 52 km quay walls
- 🚧 7.156 hectares port area



Main Issues in interaction of port traffic and urban areas

- ⚠ lack of capacity of the port roads (predictet)
 - therefore, additional traffic in residential areas

- ⚠ lack of parking spaces for trucks (predictet)
 - therefore, “wild” parking in residential areas

- ⚠ Increased emissions due to accelerating and braking of trucks



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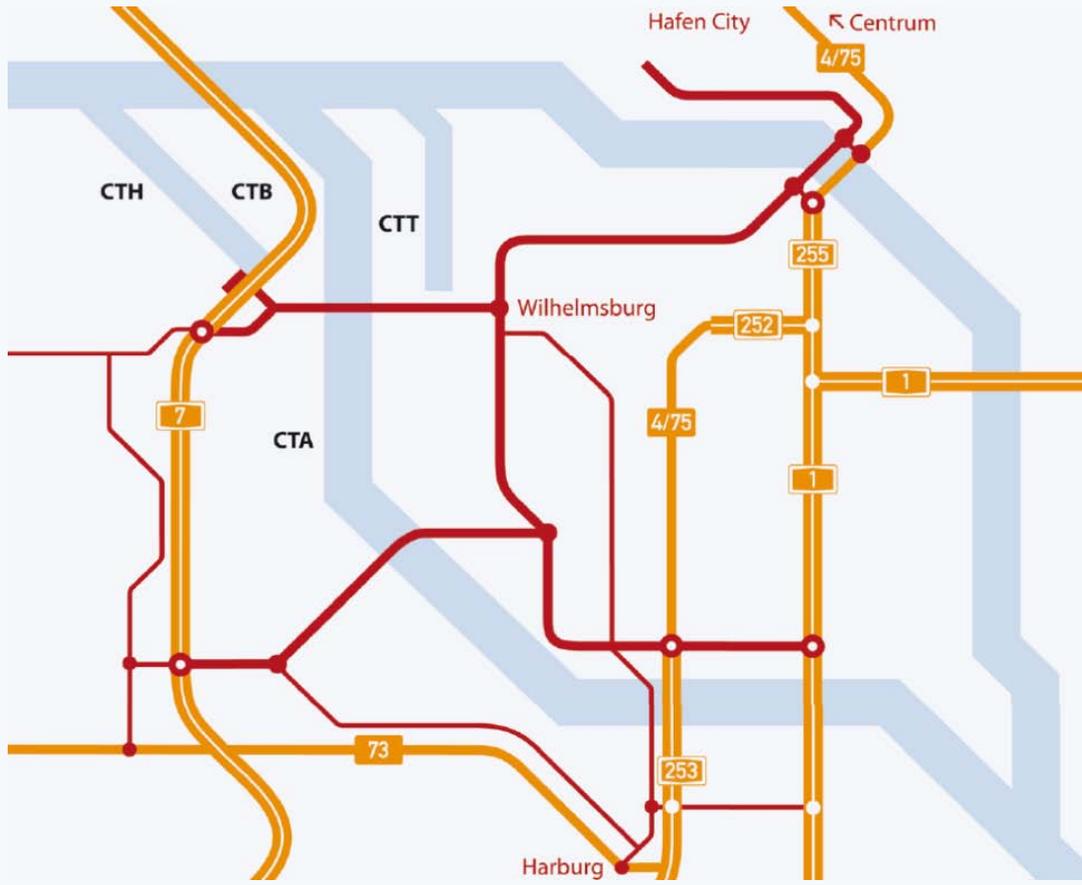


Fields of action in Traffic Management

- 🚢 Conception of a strategic network



The **strategic network** indicates the major routes of the port as well as the main alternative routes for traffic flow control options





Fields of action in Traffic Management

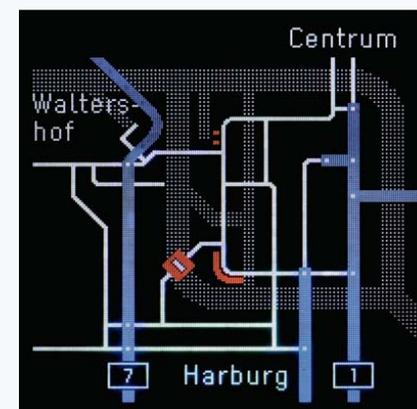
- 🚢 Conception of a strategic network
- 🚢 Development of an IT framework structure
- 🚢 Provision of up-to-date traffic information
- 🚢 Establishment of an incident management (incl. Variable Message Signs)
- 🚢 Establishment of a Port Road Management Centre (PRMC)
- 🚢 Parking space management
- 🚢 Dynamic traffic control (small-scale and large-scale)
- 🚢 Control of approaching traffic (via pre-gate car parks)
- 🚢 Increasing the efficiency of the road network





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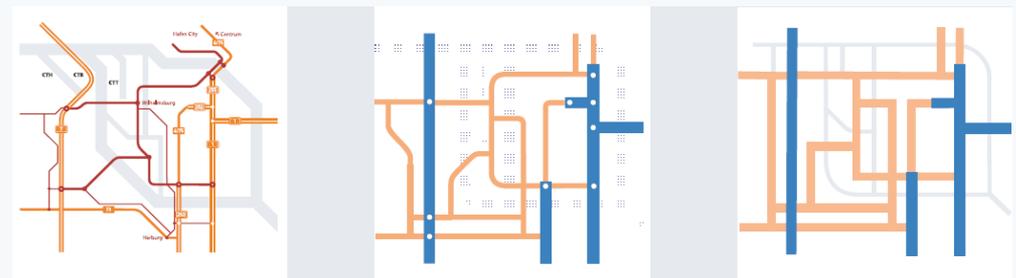
DIVA (Dynamic Information on traffic Volumes in the Area of the port)

Matrix of possibilities

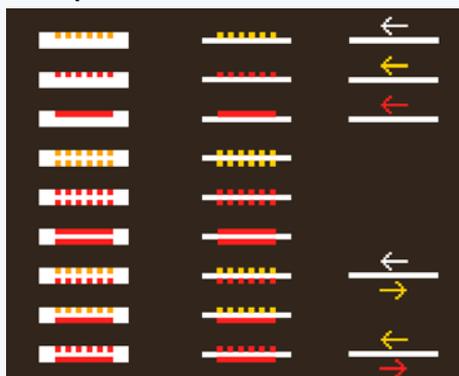
Presentation form

Struktur	Format ca.	200 x 350 cm	300 x 450 cm	350 x 500
	Module	nur Lageplan	nur Text	Lageplan und Textteil
	Technik	Vollmatrix LED	statisch + LED	
	Pixelabstand	10 mm	14 mm	20 mm
Inhalte	Netz	fein	mittel	grob
	Ortsangaben	Terminals	Stadtteile	
	BAB	mit BAB-Nr.	ohne BAB-Nr.	nur A1, A7
	Brückensperrung	eigenes Symbol	wie Straßenzustand	
	Straßenzustand	Symbol	Text	
	Richtung	Himmelsrichtung	ohne Angabe	
	Zusatzinformation	Ursache	Dauer	Ort der Störung
Darstellung	Abstraktionsgrad	niedrig	mittel	hoch
	Strecken	nur Winkel 90/45°	auch Kurven	
	Farbigkeit	bunt	Verkehrsfarben	monochrom

Level of abstraction



Graphic variations



Text view





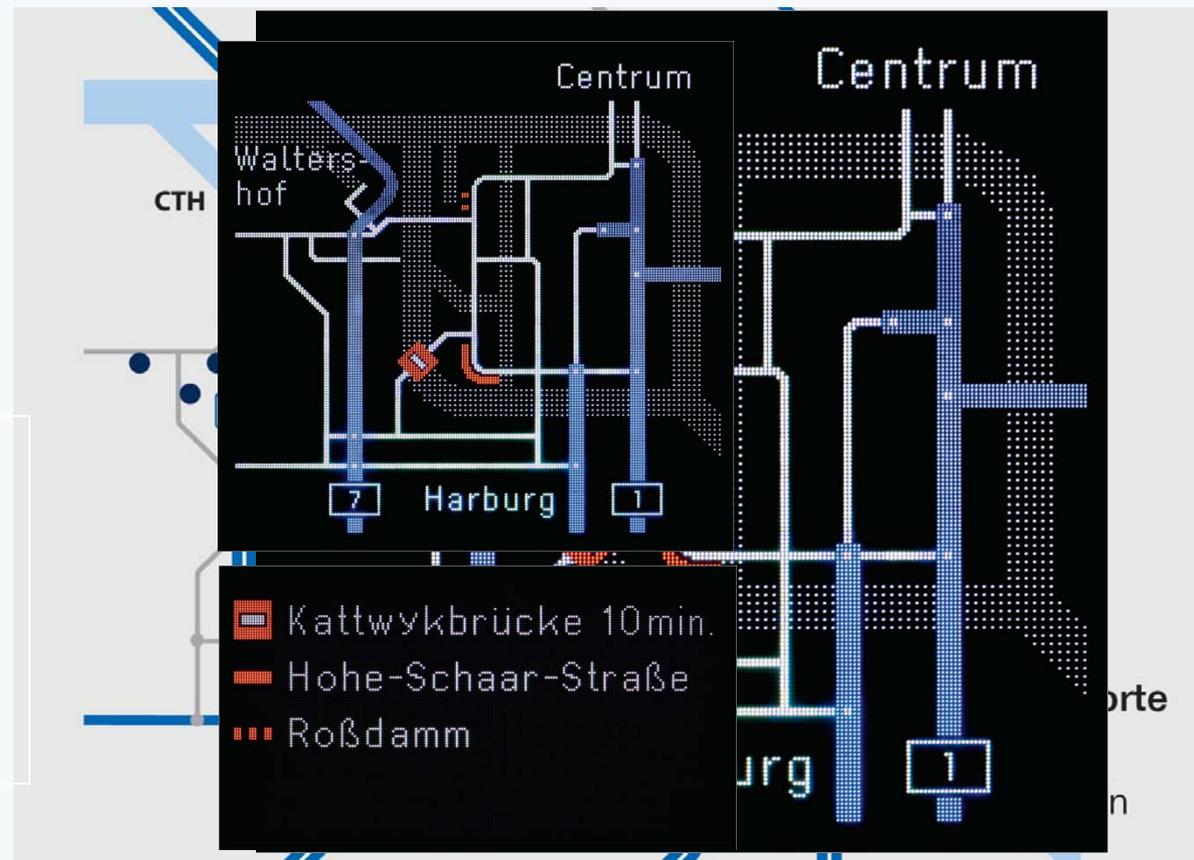
DIVA (Dynamic Information on traffic Volumes in the Area of the port) to minimise the Impact of Disruptions within the Network

Traffic Detection

- 🚧 Induction-loop sensors
- 📹 Video detection
- 🚛 Weigh-in-Motion (WIM)
- 📶 Bluetooth traffic detection

VMS-Concept

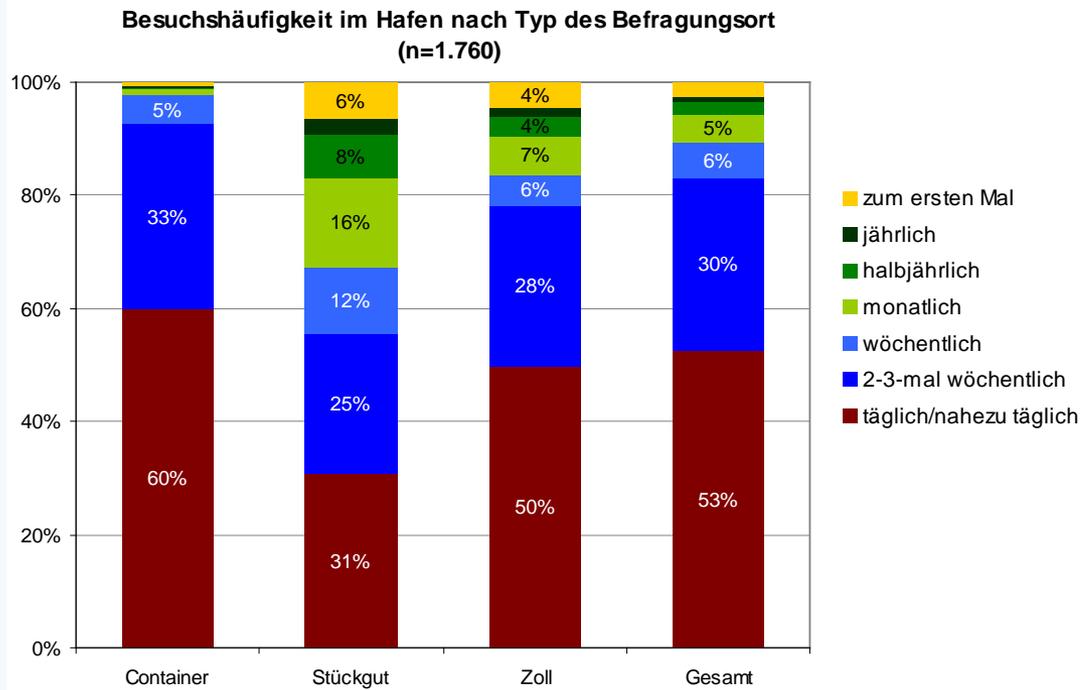
- 📺 Graphic information on the overall traffic situation
- 📶 Text message signs to display route-specific information at strategic traffic junctions



Frequency of visits Port of Hamburg

 **89 % of truck drivers are at least one time per week in the Port of Hamburg**

 **94 % of truck drivers are at least one time per month in the Port of Hamburg**





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Port Road Management

Next steps:

- 🚚 Scientific support for the evaluation
- 🚚 Representation of the traffic situation on highways and the terminal gates
- 🚚 Integration into the DWiSta (variable message signs with integrated information on traffic congestion)
- 🚚 Extension of traffic detection facilities
- 🚚 Extension of Variable Message Signs
- 🚚 Use of the message signs to display information on port evacuation in the event of flood, etc.
- 🚚 Integration of Floating Car Data (FCD)
- 🚚 Use of new media (apps) for individual traffic control



PRM-App

- 🚚 **Network-wide floating car data (FCD)** by default
 - Online traffic conditions, travel times, waiting times, in the port and the surrounding area...
- 🚚 **(individual) Traffic control**
 - transmit information already outside the port area
- 🚚 **Cooperative traffic control** with speed recommendation (personal Green Wave – in addition to the adaptive light signal control)
 - fuel saving and harmonious flow of traffic
- 🚚 **Parking information** for truck parking spaces within and outside the port area
 - with information already outside the port area
- 🚚 **Outlook:** Integration of information and functionality from container terminals, truck Appointment, Pre gate parking, etc.
- 🚚 ...

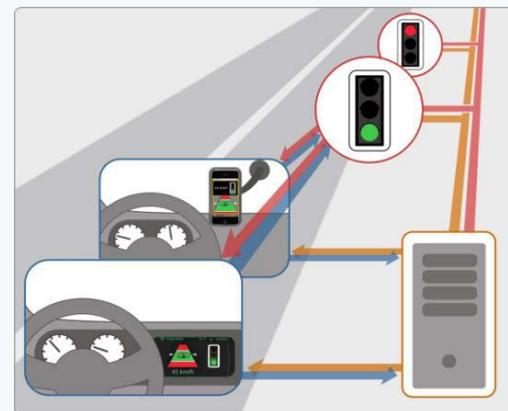


PRM-App “Personal Green Wave”

Implementation of a Smartphone-Application (App) to inform about

🚢 “Personal Green Wave” (progressive signal system) to inform the drivers about the best speed to reach the next signal by green light.

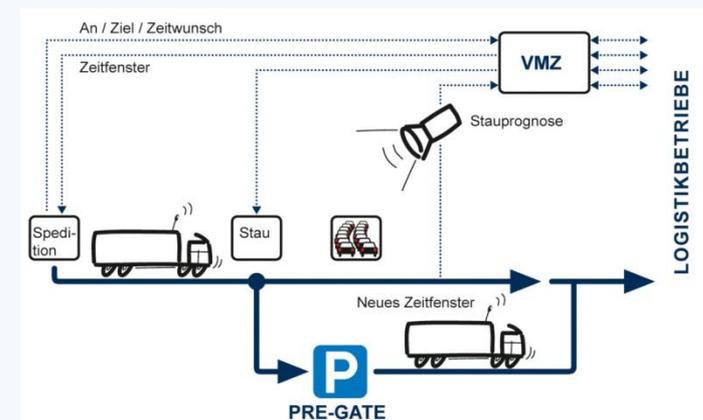
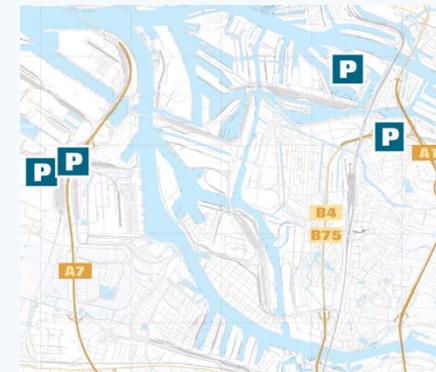
Result: a huge impact in reducing emissions
(less emissions due to braking and accelerating of trucks)





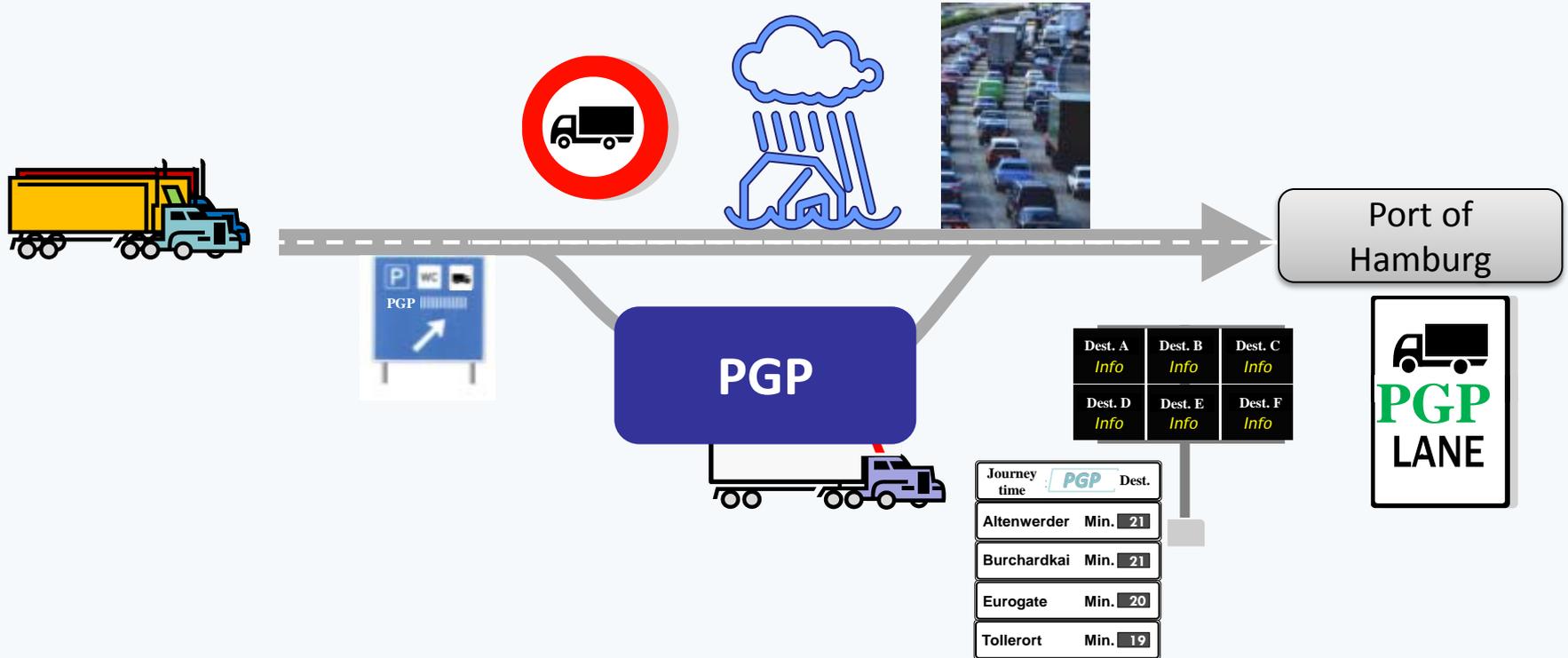
predictive flow control: Parking Management (pre-gate parking)

- Trucks in port and inlet to the port will be informed about free parking spaces in case of incidents on the road network or delayed incoming goods.
- If applicable these can be reserved in advance
- possibilities to guide/control the approaching traffic
- Information/Reservation with a PRM-App





Operating strategy: Recommended use in case of problems in traffic flow / other disturbances





Integrated Traffic Management

The further development will lead to an integrated traffic management system for all modes of transport

- roadways,
- railways and
- waterways



Thank you for your Attention!

Contact

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HPA
Hamburg Port Authority

ZUKUNFT HAFEN

PORT ROAD MANAGEMENT

Innovatives Verkehrsmanagement
im Hamburger Hafen

HPA
Hamburg Port Authority

ZUKUNFT HAFEN

**SCHNELL ANS ZIEL
MIT DIVA**

Jederzeit aktueller Überblick mit DIVA,
der Dynamischen Information
zum Verkehrs-Aufkommen im Hafen.