



INTERNATIONAL UNION
FOR ROAD-RAIL
COMBINED TRANSPORT

4th Florence Intermodal Forum

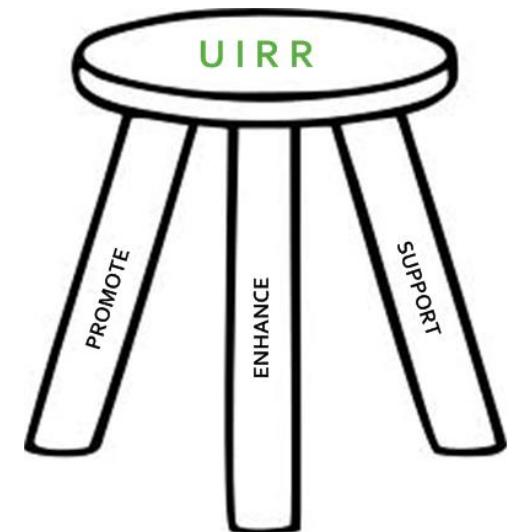
AUTOMATION IN ROAD-RAIL COMBINED TRANSPORT

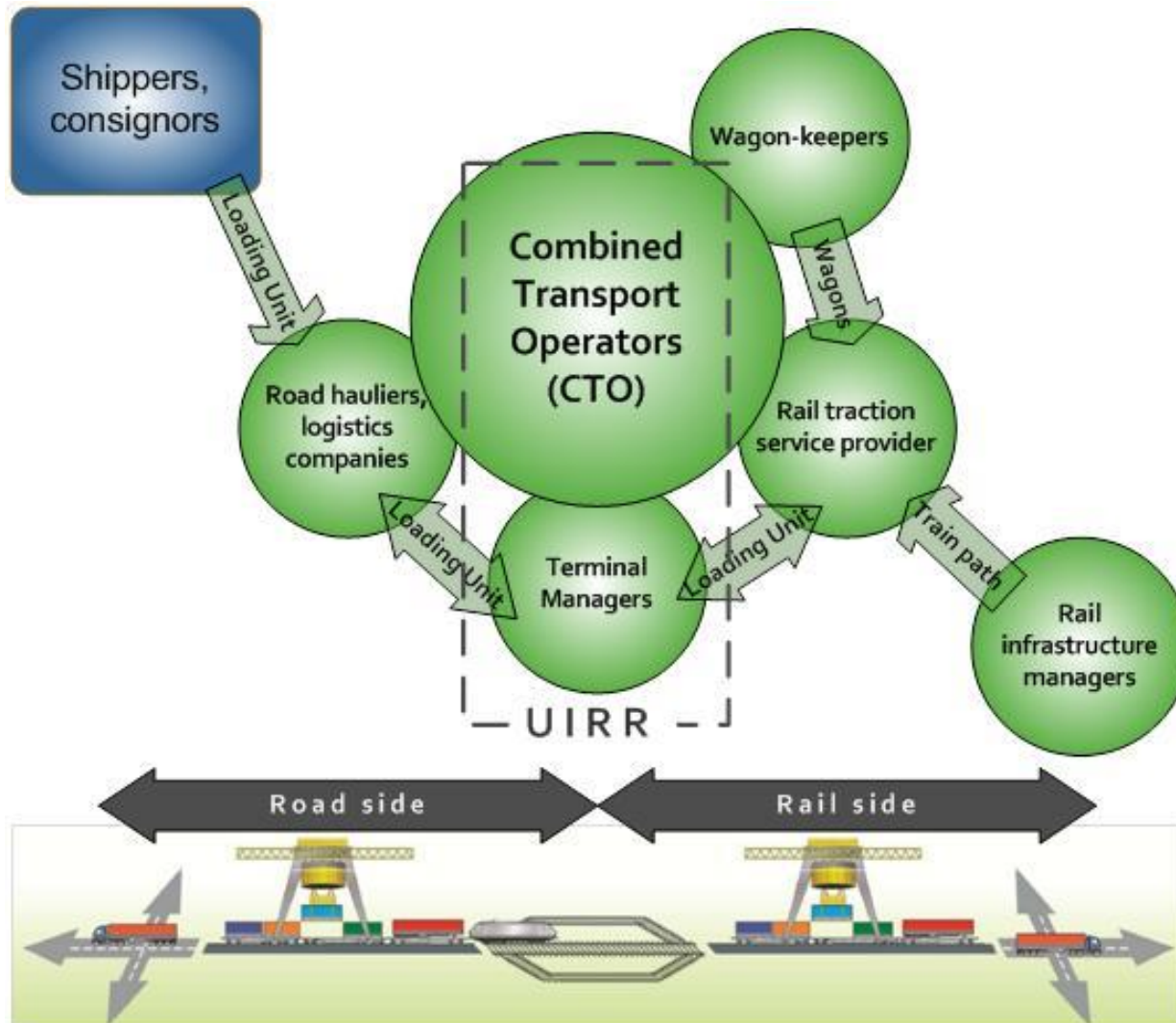


Eric Feyen
Technical Director



- **Members:** Combined Transport Operators and Terminal Managers, who enable the efficient insertion of rail into transport-chains (29 in total)
- **Logistics companies, road hauliers:** customers as well as shareholders of UIRR Members
- **Performance:** UIRR Members handled about 50% of European Combined Transport in 2015
- **Mission / Strategy:**
 - PROMOTES the public understanding and appreciation of Road-Rail Combined Transport,
 - ENHANCES its development and the proliferation of industry best practice,
 - SUPPORTS the daily operation of European Combined Transport with a series of services
- **UIRR:** founded in 1970
- seat in Brussels since 1988







- **Implementation of interoperable systems and standards to integrate all freight players in the logistic chain**
- **Freight e-documents, harmonised for public and private players (e-consignment note)**
- **Data democracy (data sharing) – real-time data available for all involved freight players, free of charge and restrictions**
- **Access to European-wide reference files (loading units, wagons, infrastructure data, location codes)**



■ 'Rail' Part

- Automation in rolling stock
 - Autonomous traction equipment on main and secondary line
 - Autonomous/intelligent freight wagon/automatic coupling
- Automation in the marshalling yards
 - Automatic sorting and building of trains
- Automation in the CT terminals
 - Train pre-departure and arrival controls
 - Transshipment operations
 - Check-in/out controls
- Automation for train controlling
 - Automatic checks during train journeys

■ 'Road' Part (last mile deliveries)

- Automation in the road vehicles (fully autonomous truck deliveries between terminals and logistic depots)
- Automation in boxes (automatic handling of boxes – modular units)
- Automation in packaging and handling of goods (optimisation of unit capacity)

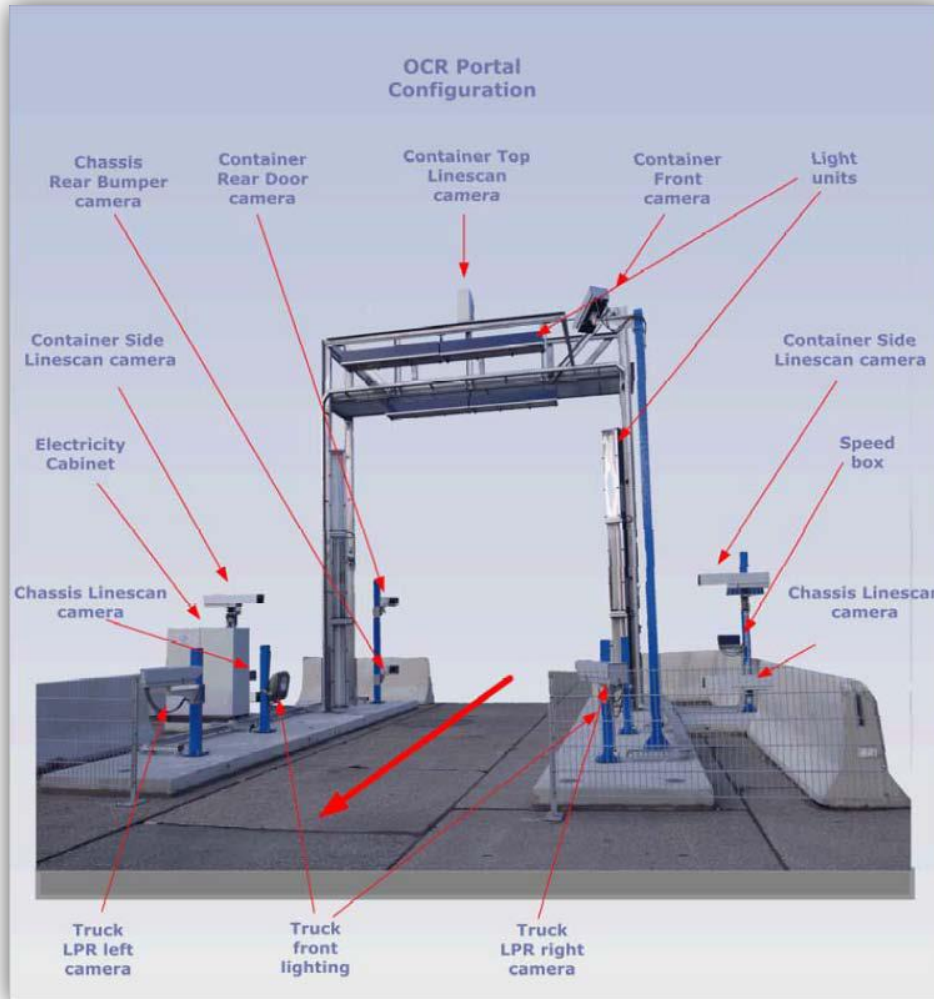
- Intelligent freight wagon



- Loading unit / cargo monitoring (ILU owner & goods, RU)
- Predictive maintenance (wagon keeper)
- Load optimisation (axle weight, total weight, composition)
- Data transfer and sharing (RU, wagon keeper)

=> Result : cost increase per wagon (leasing + 30% in some cases)

■ CT Terminals: pre-departure / arrival controls (road side)



Main targets

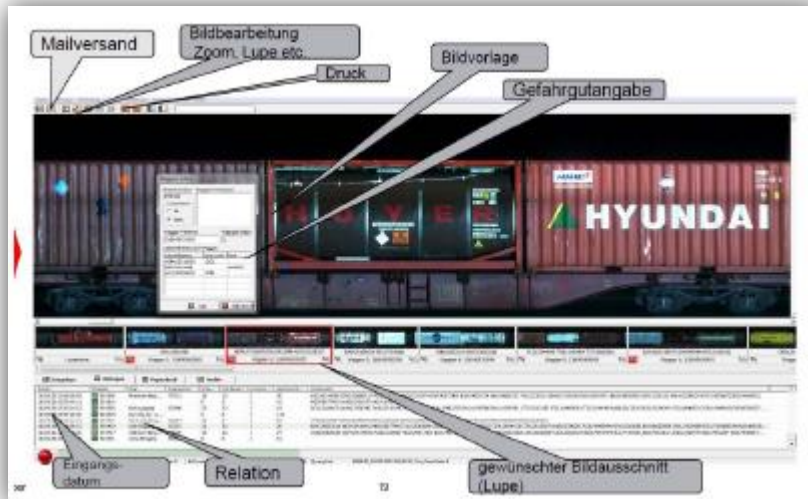
- Reduce of the waiting times for the trucking companies
- Improve overall customer satisfaction with CT services

■ CT Terminals: pre-departure / arrival controls (rail side)



Main targets

- Accelerate the release of CT trains for the terminals
- Improve overall customer satisfaction with CT services (facilitate direct loading)



■ Automation of controls during railway journeys



Gate controls in Switzerland (100 positions)

Main targets

- Control of train main characteristics (speed, weight...)
- Control of wagon main components (axel weight, total weight, load configuration)
- Control of loading units (labeling of dangerous goods)

■ Full automated handling facilities



Benefits

- an enormous increase in handling performance and improvements in terminal performance
- Reduction of wage costs
- Improved utilization of existing stack areas
- Increased productivity and concurrent cost reduction per move
- automatic guided vehicles and automatic stacking cranes

Rottedam Euromax - Hamburg CTA

ISO Containers	YES
Other types	NO
Only in maritime environment	

- Autonomous road transport with platooning



Fully electrified road network with autonomous driving capabilities...

Is this not 'something' very similar to rail ? Better the original than the copy...



- Automation can be considered as a huge opportunity for improvement but also as a huge barrier for further rail freight development (Who will invest ? Who will really benefit? Only new equipment ? Retrofitting?)
- Automation needs interoperable standards (wagons, loading units...)
- A consistent concept integrating all elements must be developed and assessed by the CT stakeholders (automation of one element might cause the disruption of the entire chain)
- CT terminals are seen as the most promising component to facilitate the access to CT services
- Railway research and implementation: Shift2Rail system demonstrator (avoid single solutions for single entities)
- CT still in fierce competition with long-haul transport journeys



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THANK YOU

For your attention

