

**COMMENT ASSURER LA
RÉALISATION DES OBJECTIFS DU
LIVRE BLANC DU TRANSPORT DE
LA C.E. ENTRE MONTPELLIER ET
BARCELONE**

*Le transfert du matériel roulant
route – chemin de fer*

OPÉRATEURS





Opérateurs

- **TP NOVA** – Barcelona - Lyon
- **HUPAC** – Barcelona - Antwerp
- **KOMBIVERKEHR** – Barcelona - Ludwigshafen
- **ATG** – Barcelona - Stuttgart
- **VIIA** – Barcelona - Bettembourg



VA1

Diapositiva 2

VA1

Valenti Ambros; 22/11/2019

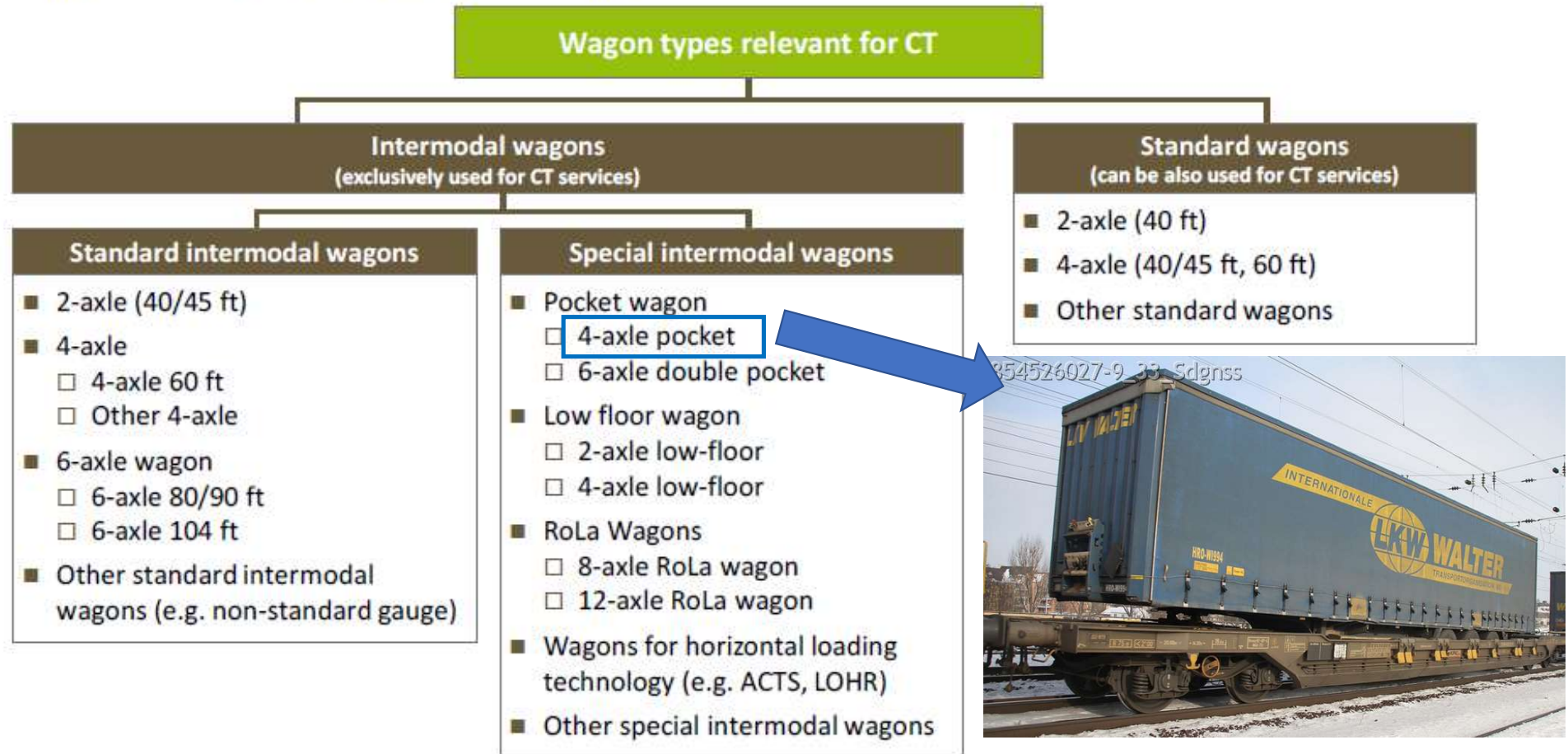
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WAGONS DE FRET

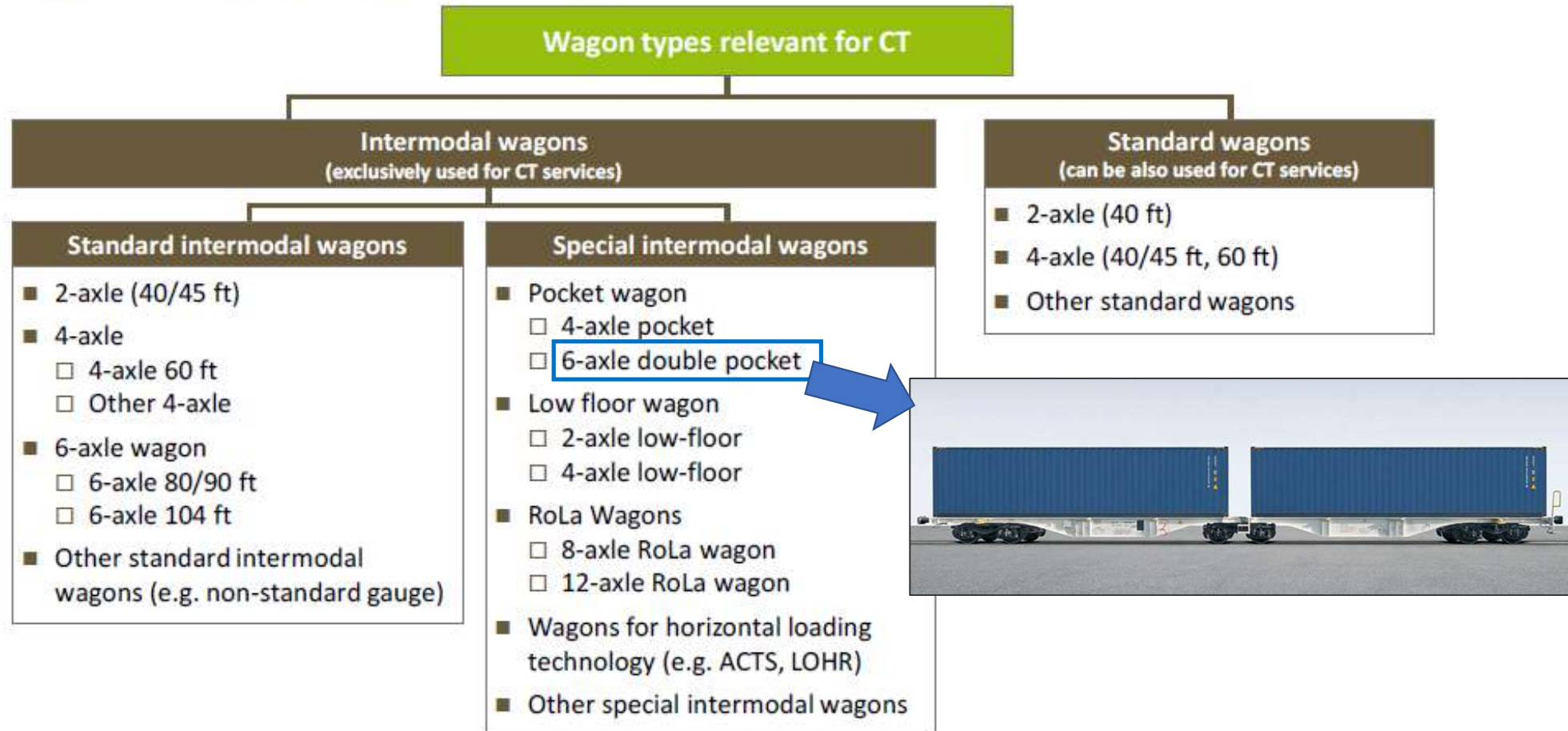


Figure 17: Overview of wagon types used in CT



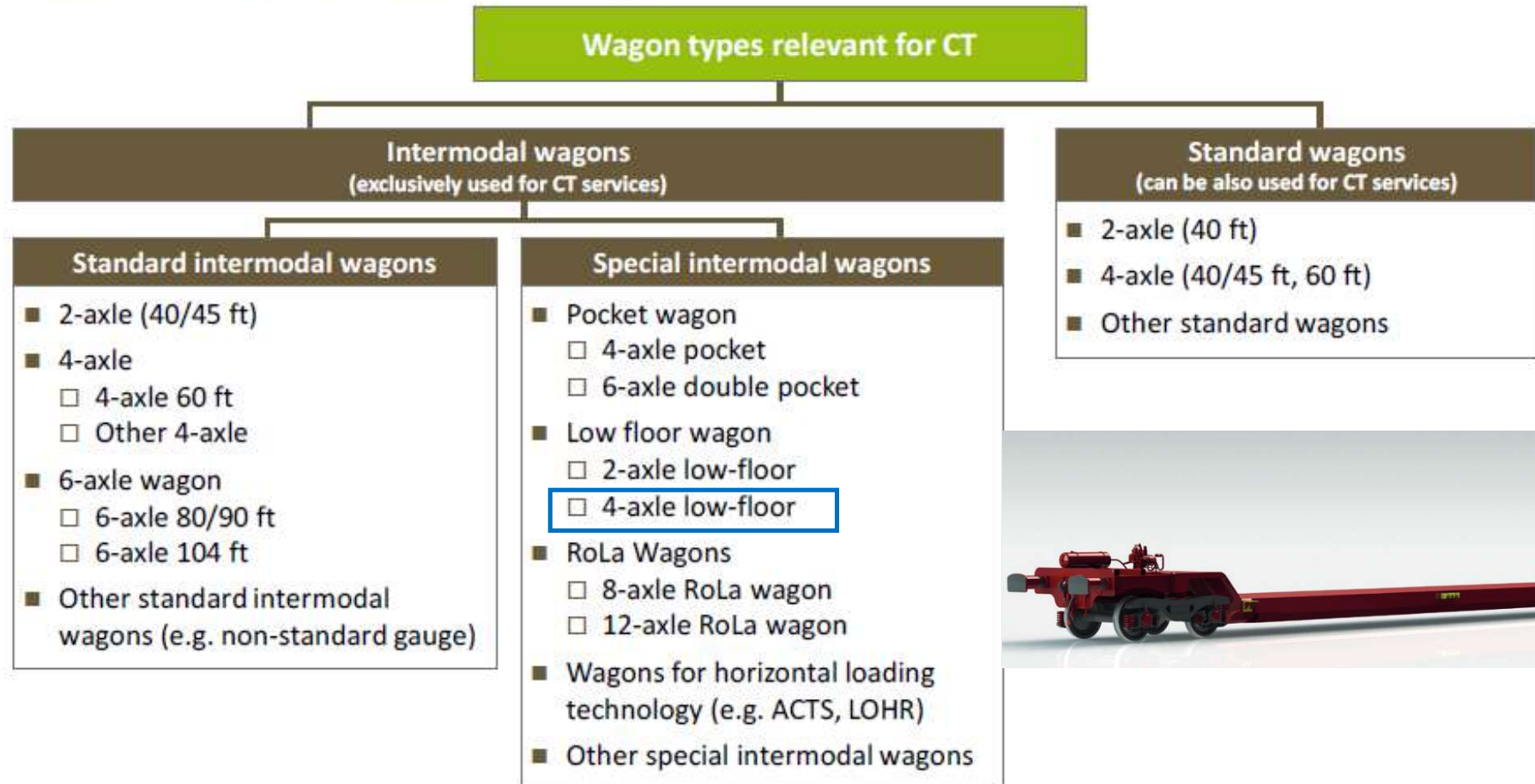
Source: BSL Transportation.

Figure 17: Overview of wagon types used in CT



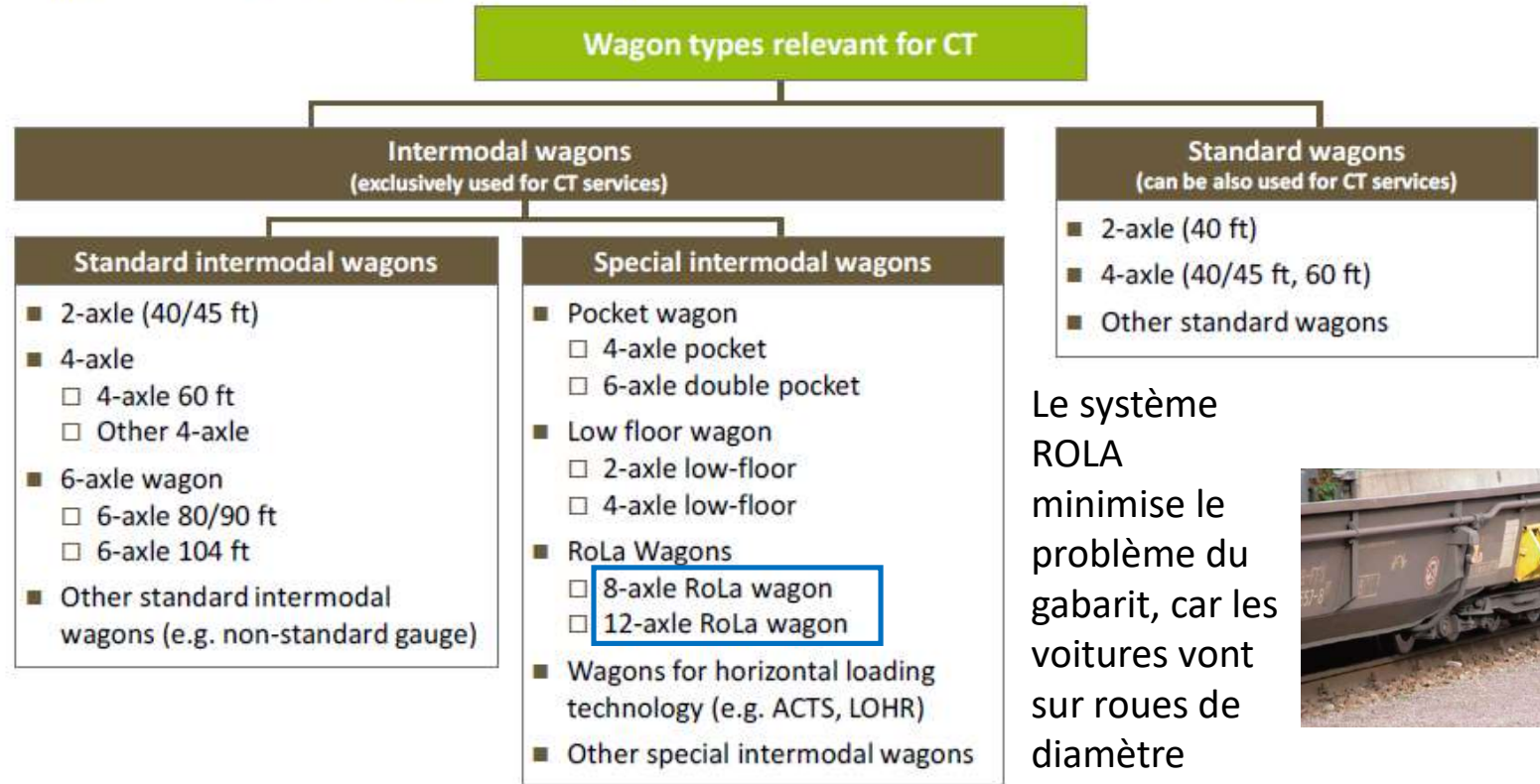
Source: BSL Transportation.

Figure 17: Overview of wagon types used in CT



Source: BSL Transportation.

Figure 17: Overview of wagon types used in CT



Le système ROLA minimise le problème du gabarit, car les voitures vont sur roues de diamètre réduit (36 cm)



Source: BSL Transportation.



Schéma de autoroute ferroviaire de typologie RoLa

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LOCOMOTIVES



Locomotives

La traction du service, qui part du terminal Can Tunis à Barcelone, est assurée par les locomotives 252 de Renfe Merchandise jusqu'à Perpignan, où l'opérateur français SNCF poursuit le voyage.



Deux locomotives sont nécessaires pour couvrir la section Le Soler – Perpignan (1.500 V CC), en raison de la plage de tension des locomotives RENFE (3.000 V CC et 25.000 V CA).

Locomotives

Pour augmenter le parc de locomotives, des tests ont été effectués avec la BOMBARDIER TRAXX E126, tri-tension et capable d'avoir trois systèmes de signalisation (par exemple, ASFA, ERTMS et KBV).



Implementation du ERTMS



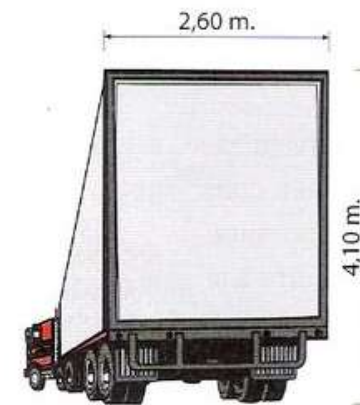
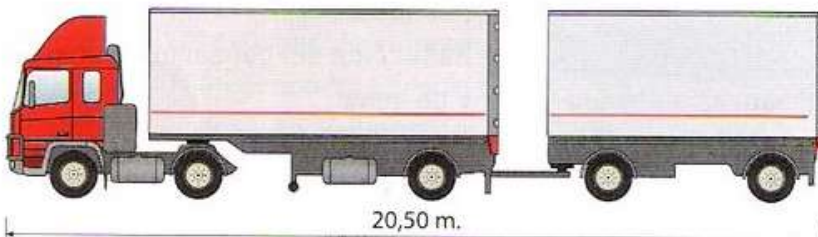
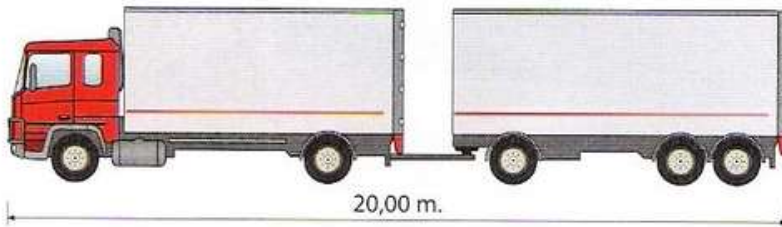
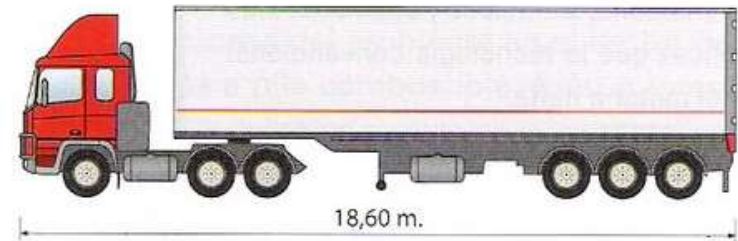
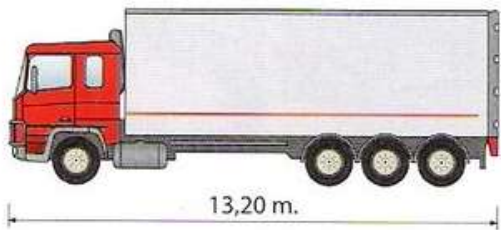
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CHARGEMENT DE CAMIONS
ET DE REMORQUES DANS
LES TRAINS



Dimensiones maximales autorisées



Alto máximo:
4,10 m.

Ancho máximo:
2,60 m.

CargoBeamer

Placement du semi-remorque sur une palette



CargoBeamer

Chargement sur les wagons avec une grue



CargoBeamer

Chargement automatique sur les wagons - 1



Figure 15: Cargobeamer



CargoBeamer

Le futur → Chargement automatique sur les wagons - 2



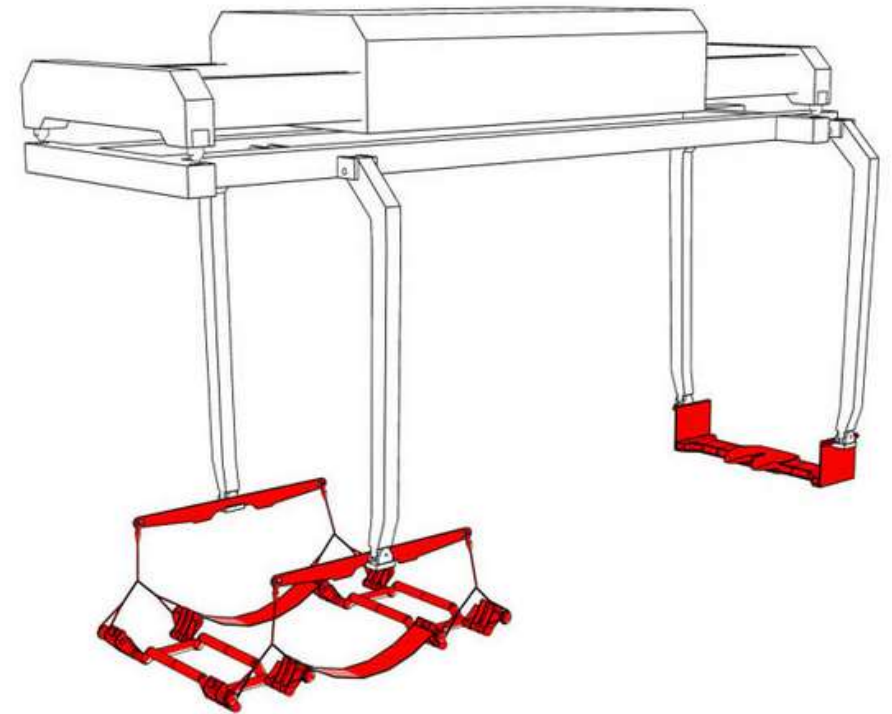
Table 4: Cargobeamer - overview

	Terminal Infrastructure	International Terminal Network	Operation and supply chain	Costs and Investments
CargoBeamer	Loading and unloading independently from the presence of the train in the terminal.	Approval of operation granted in Germany	Able to carry different intermodal types	
	No complex technologies onboard		Vertical handling of containers, swap bodies and craneable trailers possible, thus very flexible	
	Combination of a new linear, horizontal technique with the classic vertical handling	Still not in operational phase - no existing network available		
	Space requirements less than container terminal			
	Specialized technical infrastructure is needed			
	Needs a lot of terminal ground			



Innovativer Sattelanhänger Umschlag

Manipulation de semi-remorques non préhensibles





Innovativer Sattelanhänger Umschlag

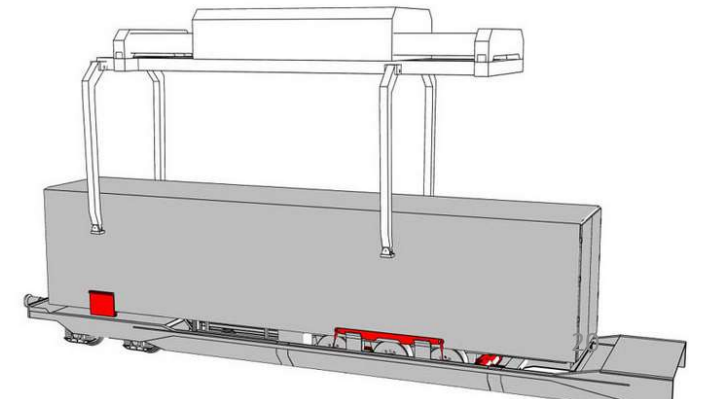
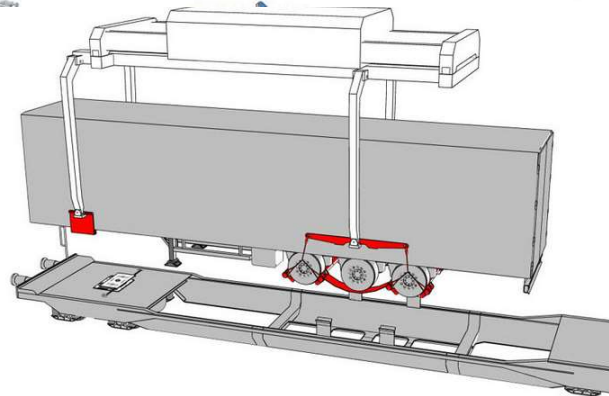
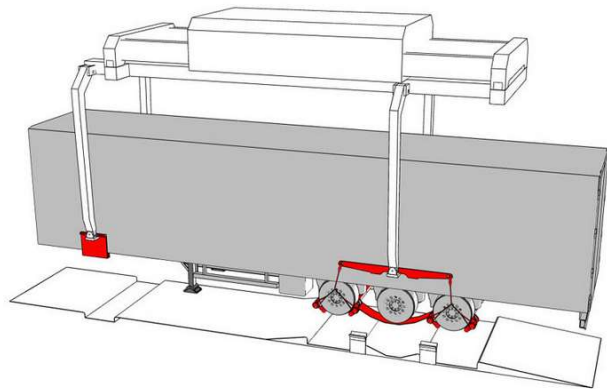
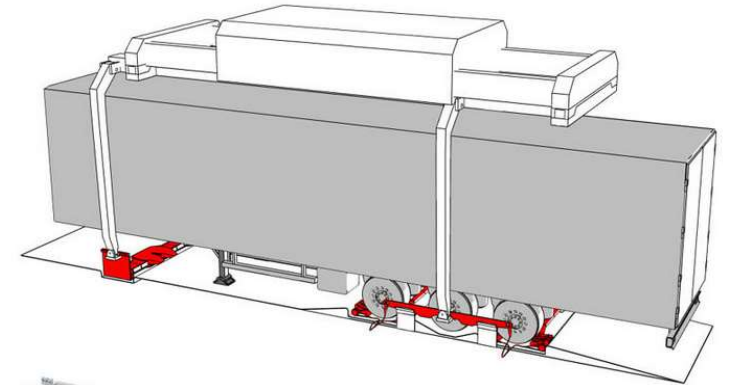
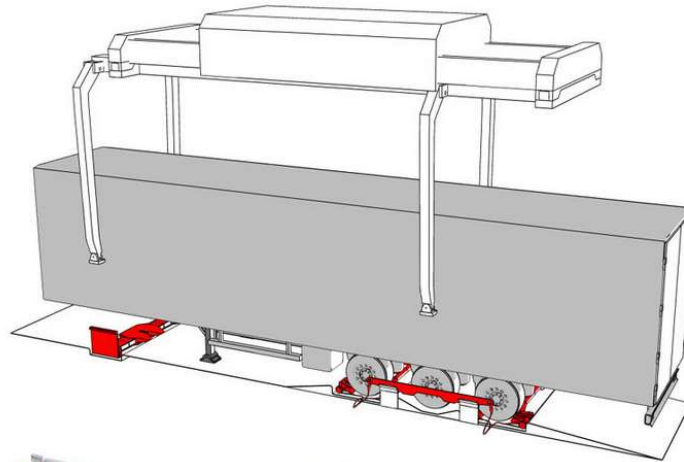
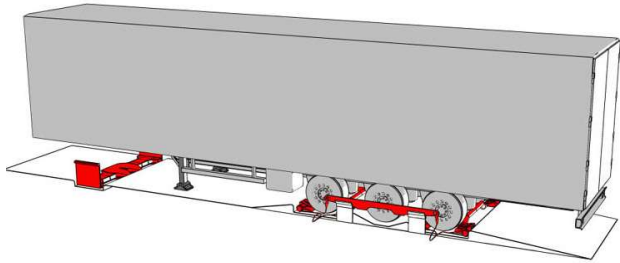
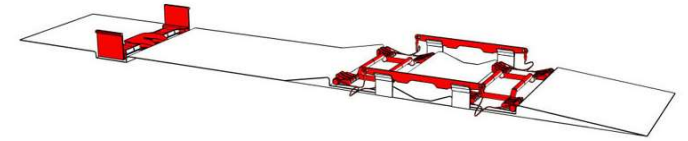
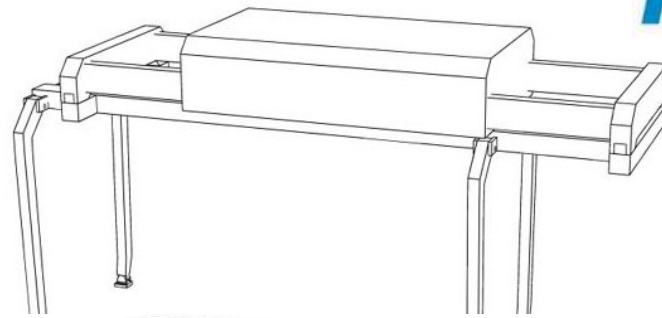
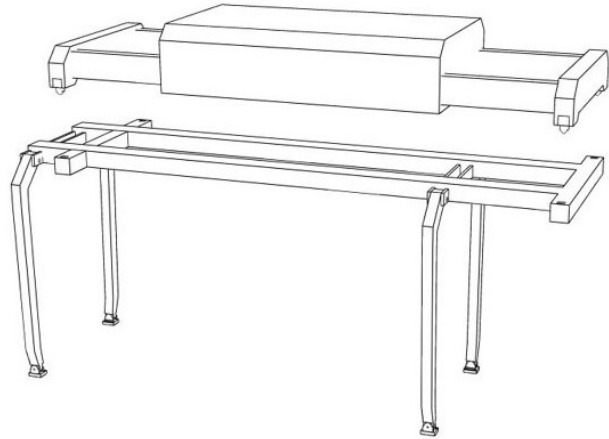


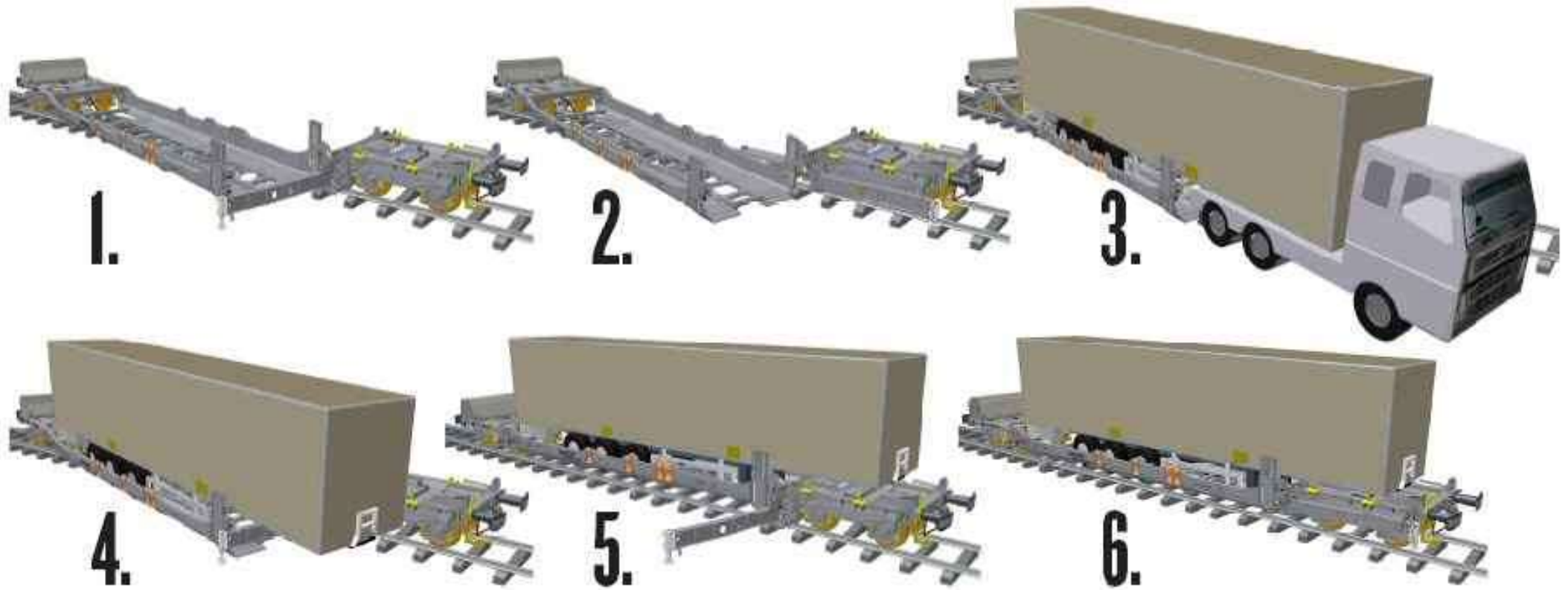
Table 5: ISU - overview

	Terminal Infrastructure	International Terminal Network	Operation and supply chain	Costs and Investments
ISU	Easy integration into existing services without heavy technology	First experiences with first connection from Wels to Bulgaria	Handling of non-craneable trailers	
	Easy integration into existing terminals			
	Complex loading and unloading as competitive disadvantage			
	staff training by system implementation (3 staffers needed per handling)			

Megaswing



Megaswing



Megaswing

Table 6: Megaswing - overview

	Terminal Infrastructure	International Terminal Network	Operation and supply chain	Costs and Investments
Megaswing	Allows easy handling of non-craneable trailers	No network needed	All types of specified railway loading units can be transported (containers, codified trailers and swap bodies)	Investment cost Megaswing wagon: 300 000 €
	Handling under electrified tracks possible	Successful test phase	Allows individual wagon unloading in coupled trains with multiple stop-overs	
	Allows horizontal and vertical handling	New wagon type, no experiences in daily use	Increased flexibility	
	No special infrastructure needed, a truck-drivable trackside along an existing railway track is adequate	Not realized on any relation and network		
	Possible in every existing terminal with trackside area for trucks/trailers			
	Relatively complex technical components			
	Quick loading and unloading in comparison to ACT, no special equipment/network is needed on terminals (in comparison to Modalohr), only paved platform			
	Cost saving due to horizontal loading (no craning needed)			

The wagon



- Articulated and low floor wagon for a quick and safe horizontal loading of standard semi-trailers
- TEN marking on Lohr UIC wagons (Trans European Network)

The terminal

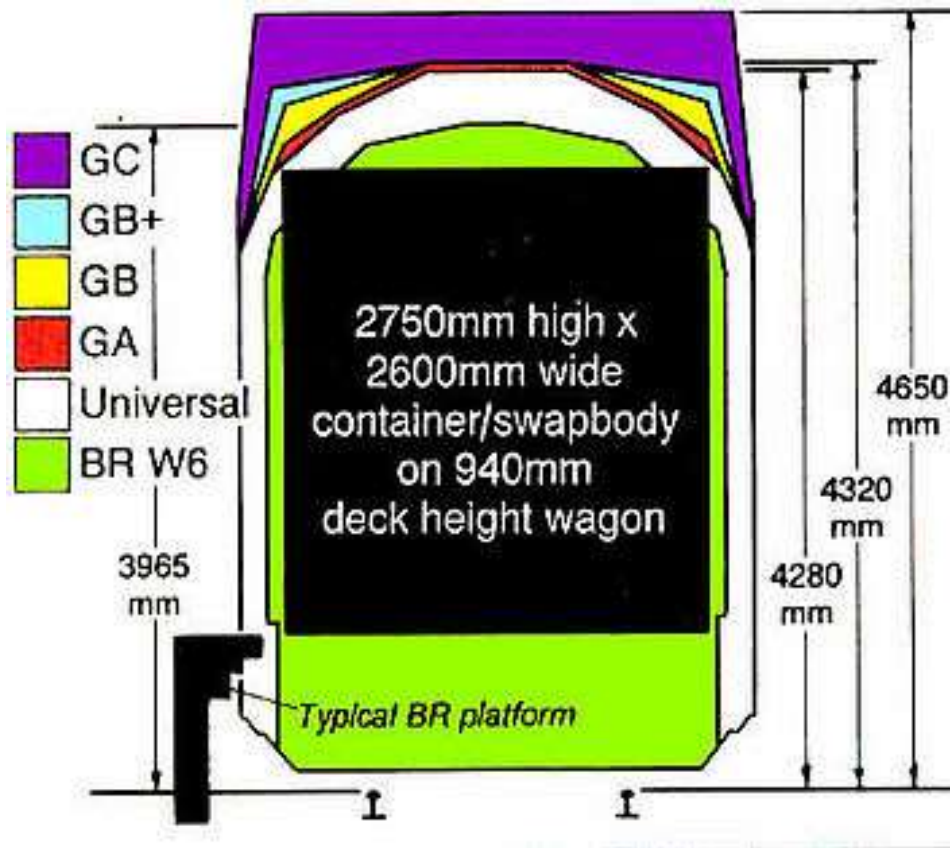


- On the terminal, the rail operator may offer a range of services to the road transport companies: several departures per day in each direction, trailers loading and unloading, secure parking, service station.

Table 4: Modalohr Horizontal - overview

	Terminal Infrastructure	International Terminal Network	Operation and supply chain	Costs and Investments
Modalohr	Handling of the loading units is possible without shunting while the train is under the electricity track		Handling time is shorter than for UCT (but only if enough staff is available; 26 people for 13 wagons)	Additional costs in comparison to the traditional combined transport occur for special wagons and specific terminals
	The very low loading platform enables 4 meter-high trucks to be loaded within the limits of existing railway gauges (UIC GB1)		Modalohr accepts most standard trucks without modification: (Maximum height: 4.04 m, Semi-trailer maximum length 13.7 m, Semi-trailer maximum load : 38 t)	Investment costs terminal: 6,7 Mio € ⁸
	Technical specification of special wagons and technically demanding terminals			
	High space requirement in terminals			

Gabarits UIC

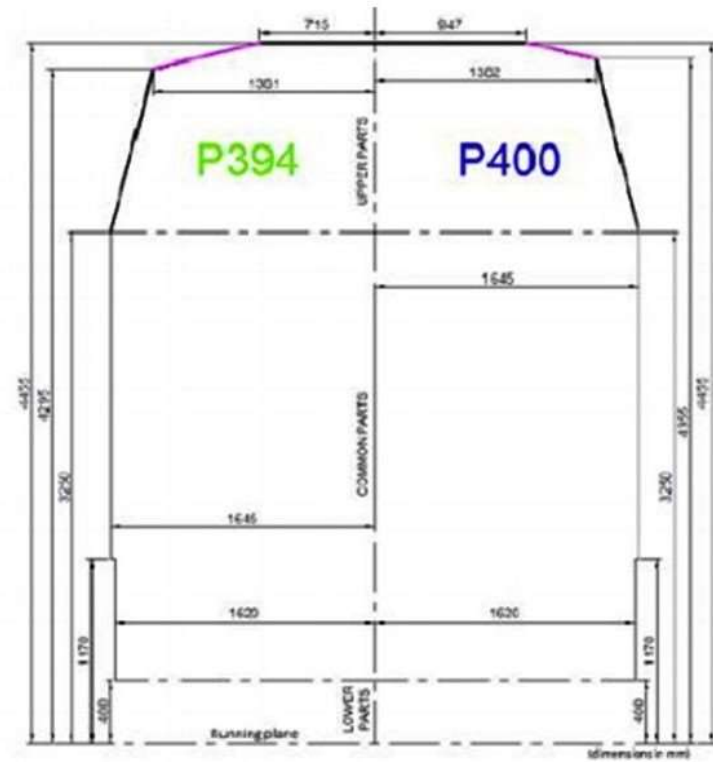
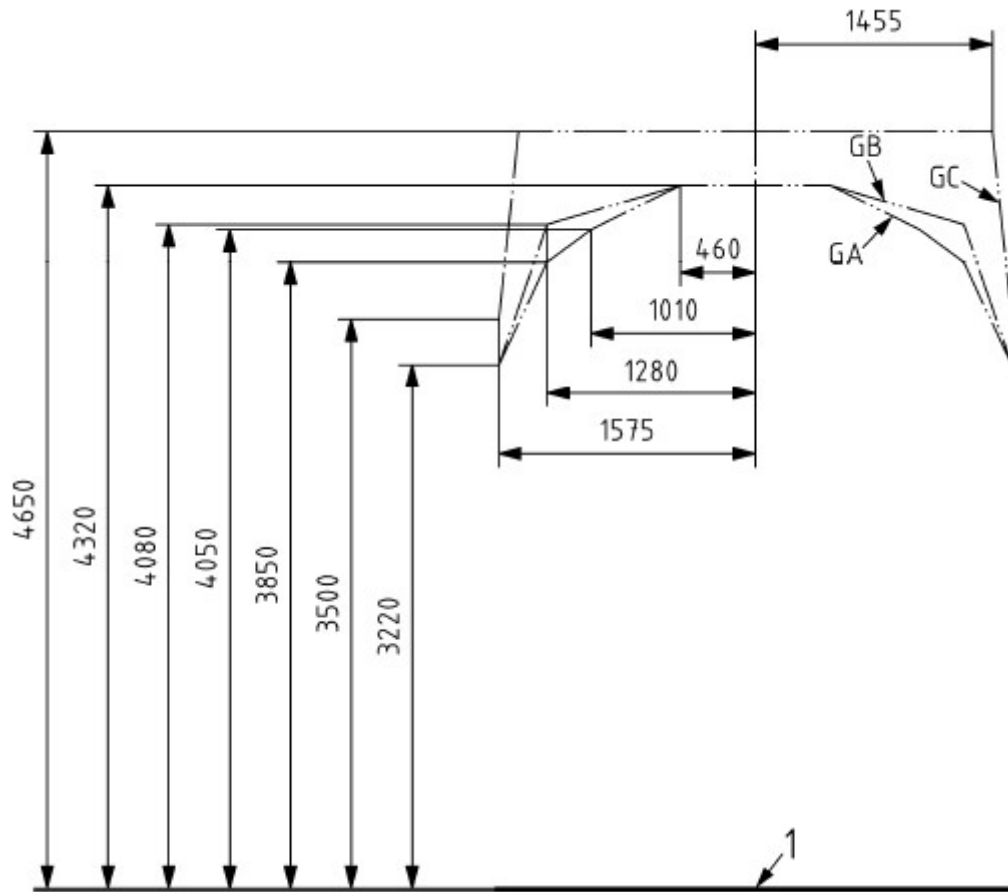


Les nouveaux gabarits de chargement GP394 et GP400 (à venir dans la nouvelle version de IN07060) dont la documentation est en cours de validation ont été définis. Ces nouveaux gabarits sont destinés à permettre le transport de semi-remorques de 4,0 mètres de haut sur des wagons dont le plancher de chargement se situe respectivement à 27 et 33 cm au-dessus du plan de roulement.

Gabarits UIC

Gabarits P394-P400

Figure 8: Reference profiles for the kinematic gauges GA, GB and GC



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