

Trends in Freight Rail Transport, Modular Freight Wagons, Digital Automatic Coupling

To improve the integration of freight rail transportation with logistics processes in manufacturing industries, higher degrees of flexibility and adaptability are required from rail freight wagons, transporting different types of materials.

Carrier Wagon with removable Swap Body

A new generation of lightweight freight wagons offers higher degrees of multifunctionality to operators. Freight wagons are built for industrial applications and consist of two core modules: a) the carrier wagon and b) the swap body. While carrier wagons are dimensional to different lengths, the swap body can carry multiple types of industrial container systems. The expectation is that up to 70% of all freight wagons will use such a modular concept to minimize turnaround times, pre-carriage, and after-carriage, as well as overall freight circulation time.

Digital Automatic Coupling, Autonomous Shunting

Digital automatic coupling (DAC) is an enabling technology. Based on the objective of increasing the flexibility of freight rail transport, the DAC connects freight wagons of different kinds to train formations, ensuring continuous power supply and train integrity in real-time via data connection. The primary DAC objective is to minimize turnaround times per freight wagon to 1-3 minutes through automatized coupling/decoupling processes in shunting yards. Second, freight wagons equipped with DACs can decouple before reaching planned destination stations. While some freight wagons continue their route, other freight wagons can stop and unload, depending on destination-specific objectives and with time and cost advantages as benefits. The DAC is key and a prerequisite for the autonomous freight transport of the 21st century.

Light-Weight Freight Rail Transport, High-Speed Freight Trains

Modularization and digitalization of freight wagons are increasing the competitiveness of freight rail transportation in comparison to trucking. Lower transportation costs and CO2 emissions are intended and achievable when moving freight from road to rail. Light-weight-double-decker freight trains (aka. high-speed freight trains) transport up to 100,000 parcels per train between intralogistics hubs and distribution centers. Speed levels today are up to 270 km/h, to achieve up to 400 km/h in the future. Transportation of mail, parcels, and food products by high-speed freight trains has been gaining traction since the COVID-19 pandemic due to higher growth rates in e-commerce/internet.

Heavy Haul Freight Rail Transport, Cargo Monitoring, Telematics

The rail is especially suitable due to its system properties for long freight trains carrying high transportation loads (aka. heavy haul). With a gross mass of more than 5,000 tons per train, heavy haul freight loads can be, e.g., steel, chemicals, fertilizers, grains, and transported between industries. Digital freight wagons integrate sensors for monitoring sensitive goods in real-time, e.g., temperature control of basic chemical materials and to improve safety in rail transport. In addition, IoT Cloud technologies offer freight wagon tracking and tracing and the provision of exact arrival times.

MEDSTERN CANADA LLP delivers top results. Our Business Mediators facilitate Business-to-Business processes and support successful project collaborations between Leaders active in Advanced Rail Transportation, Digitization, Industry 4.0, and Infrastructure Modernization:

- ★ ARE YOU IN NEED OF SPECIFIC EXPERTISE? INTERESTED IN FREIGHT RAIL TECHNOLOGY?
- ★ DO YOU REQUIRE LIAISON OR BUSINESS MEDIATION SUPPORT FOR YOUR B2B PROJECT?
- ★ WOULD YOU LIKE TO EXTEND YOUR BUSINESS NETWORK IN FREIGHT RAIL TRANSPORT?

Please visit us at <https://medstern.ca> or follow us on LinkedIn <https://www.linkedin.com/company/medstern-canada-llp/?viewAsMember=true>

Forward this Post to your #Followers and Receive a Free Consultation Today!

<https://medstern.ca/book-a-consultation/>