

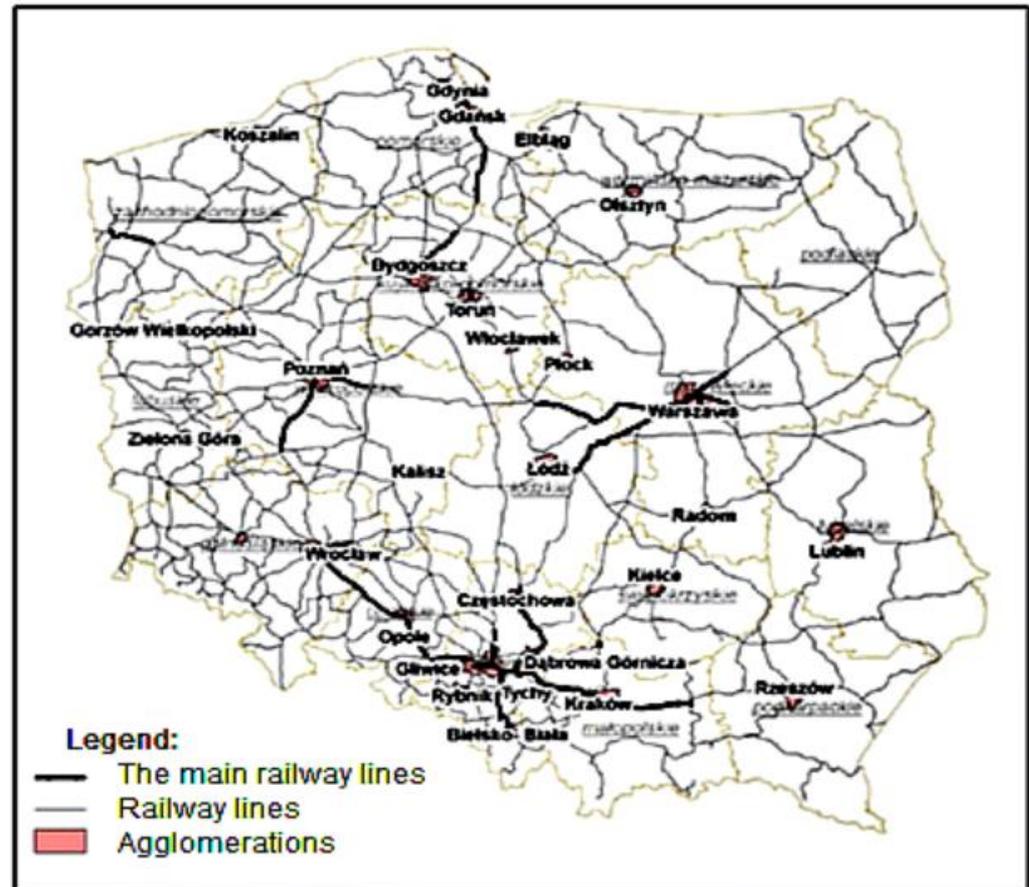
# Acoustic modernisation of PKP CARGO freight wagons

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- Revised TSI NOI: from the 8th December 2024 the introduction of quieter routes: minimum length of 20 km; the average number of daily operated freight trains during the night-time higher than 12.
- According to PKP PLK, Polish Infrastructure Manager, quieter routes mainly in the vicinity of big cities, across the Silesia industrial area and near sea ports. Initial analyses indicate that over 80% of rail freight traffic in Poland will be partially conducted along quieter routes.



- Revised TSI NOI: Particular implementation rules for wagons operated on quieter routes of Poland: the following existing wagons can be operated on quieter routes in the territory of Poland until 31 December 2036:
  - Wagons with tyred wheels
  - Wagons with 1Bg or 1Bgu brake configuration fitted with cast iron blocks
  - Wagons designed for 'S' traffic equipped with 'SS' brake fitted with cast iron blocks \*)
  - Wagons fitted with cast iron blocks and designed for 'SS' traffic for which retrofitting with LL brake blocks would require fitting with wheels complying with EN 13979-1 and a kink valve \*)

\*) However, these PKP CARGO wagons will be acoustically modernised !

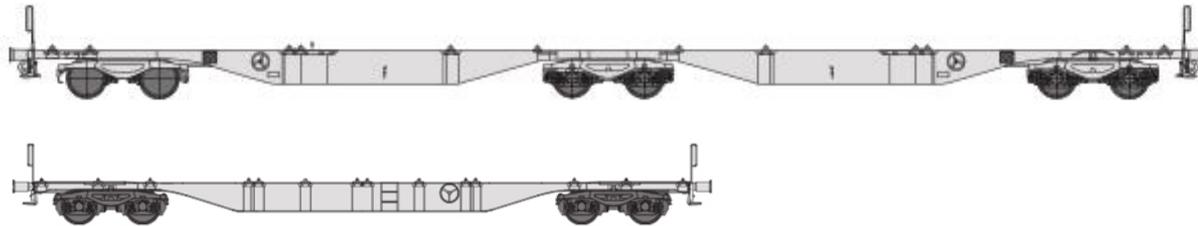


# Acoustic modernisation of PKP CARGO wagons

- Launched in 2016: acoustic modernisation of over 10,000 existing wagons, used mainly in international traffic
- The modernisation mainly consists in the installation of LL composite brake blocks and, in some wagons, replacement of wheelsets equipped with tyred wheels by wheelsets equipped with monoblock wheels.
- Over 3400 wagons modernised so far. 10,000 wagons planned to be modernised by 2021.
- CEF financial support obtained by PKP CARGO (20% of eligible costs of purchasing composite brake blocks).
- Poland as a third biggest country in Europe as regards the number of retrofitted freight wagons.



- Renewal of PKP CARGO fleet by purchases of new quiet wagons.
- Over 1,000 new wagons for combined transport planned to be purchased in nearest 3 years. They will replace noisy wagons equipped with old type bogies and tyred wheels with cast iron brake blocks.
- Planned purchases of other wagon types, mainly open wagons.
- All new wagons approved with two types of K composite brake blocks, to be competitive in tender procedures.



- No dangerous incidents noted so far with the application of composite brake blocks, however, the weather conditions were favourable in recent years (e.g. mild winters).
- Training locomotive drivers in running trains equipped mostly or exclusively with composite brake blocks (both types K and LL).
- Remarkable difficulties in purchases and considerable increase in wheelset prices: a problem in case of PKP CARGO fleet with majority of wagons equipped with tyred wheels.
- Purchases of kink valves, required for the acoustic modernisation of wagons equipped with 'SS' brake.
- Decrease in the durability of brake blocks due to cracks in friction material, requiring earlier replacement of brake blocks.



Thank you for your attention

