

Locos



Our mission is
to meet the current and future expectations of
national and foreign owners of rail rolling stock
by
building, upgrading and repairing their vehicles,
while at the same time maintaining
the high quality of our products and ensuring users' satisfaction.



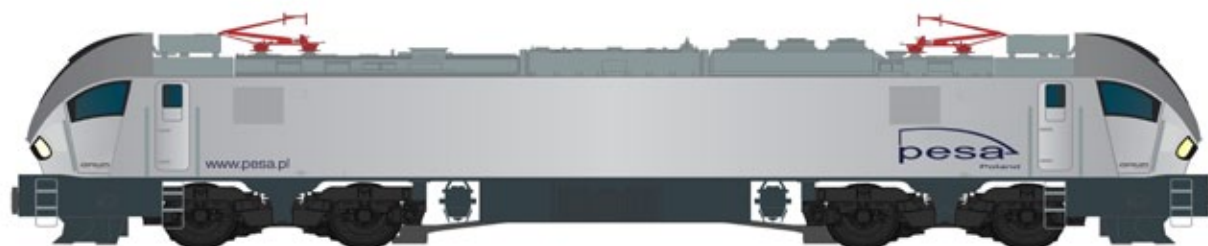


By combining its extensive experience with current intellectual and technological potential, in 2011-2012 PESA Bydgoszcz SA built its own loco – the GAMA MARATHON, the first of the new platform of vehicles known as the GAMA family.

The GAMA is a platform of multi-system locos. The vehicle family comprises diesel locos of 2200 kW with a speed of 160 km/h, and electric multi-voltage locos powered with 3 kV DC, 15 kV AC or 25 kV AC, capable of reaching the speed of 160 km/h when rendering freight services and 190 km/h in passenger traffic. An operator, depending on its

needs, is able to choose from different versions of the locos, including an option with all types of voltages. Operating the vehicles by the driver and loco staff is easy and standardized.

The first vehicle of the GAMA platform is a 5600 kW electric four-axle loco, supplied with 3 kV DC voltage, designated as 111Ed with the Marathon engine system. The design as well as the technical and operational parameters of the loco meet the requirements of the following standards: PN-EN, ISO, IEC, CEN/CENENEC, UIC leaflets, recommendations of ERRI(ORE) and TSI-LOC&PAS.







Thanks to the additional diesel generator, the Gama Marathon loco is one of the first units in the world to be able to perform shunting work on non-electrified sections without being helped by an additional locomotive.

| | |
|--------------------------------------|----------------------------------------------|
| Traction engine | 4 x 1400 kW |
| Power | 5 600 kW |
| Design speed | 160 km/h |
| Tractive force at start-up | 300 kN |
| Traction network voltage | 3 kV DC |
| Electric drive | 2 traction converters, 4 two-level inverters |
| Train safety system | ATP + dead man's switch + RS/ETCS (optional) |
| Control and diagnostic system | Microprocessor-based, distributed structure |

The technical parameters refer to the 111Ed loco.

The loco features a modern drive with two liquid-cooled traction converters and four inverters separately per engine. It has an electrodynamic resistance and regenerative brake. Tractive force is transferred from bogies to the body via slant traction rods.

The loco features two air-conditioned driver's cabs of equal importance at both ends. Two external doors lead to each cab, while the „anti-panic“ internal door leads to the engine section. The control panel in the cab meets the requirements of the UIC 612 leaflet.

On-board diagnostic and service systems help drivers check all the parameters that are crucial to ensure safety. The on-line diagnostic systems ensure the high reliability of locos.



The loco structure is made of high-strength steel. Side covers and removable roofs are made of light alloys.

The body conforms to the PN-EN 12663 standard and PN-EN 15227 (four collision scenarios). The formable elements used are removable and easily replaceable if damaged. Safety of operation is provided by properly designed crumple zones.

Train drivers' opinions and suggestions were taken into account at the stage of design and construction of the loco; today the loco is recommended by the Professional Association of Train Drivers in Poland.

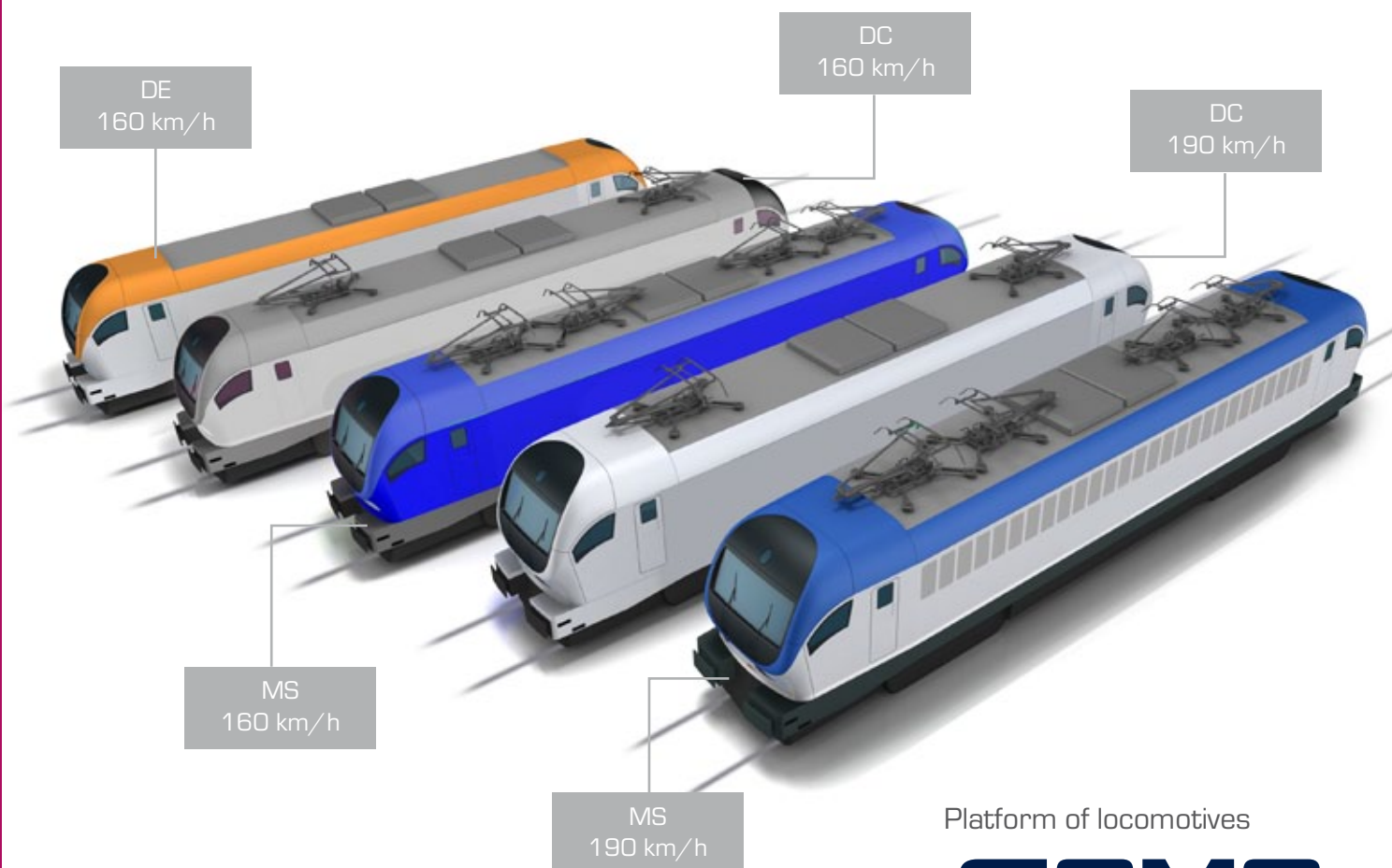




Having a fleet of Gama-based locos helps reduce the costs of:

- supply of spare parts due to the modular structure,
- training drivers and maintenance staff
- equipping repair shops

Should the market demand change in the future, the delivered locos can be reconfigured to adapt them to operation in other countries and to successfully use them as locos performing cross-border transport.



Platform of locomotives

GAMA
MARATHON



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