In January 2018, Koleje Mazowieckie and Stadler Polska published a framework agreement for the delivery of 71 FLIRT electric multiple units to operate in the Mazovian Region. The agreement includes fleet maintenance for 15 years. The order is the largest contract awarded for the purchase of rail vehicles in the history of the Polish railway. Manufactured at the Siedlce plant, trains will be delivered in six stages, based on individual implementation agreements and will gradually replace the old Koleje Mazowieckie rolling stock. Travelling in the region will become safer and more comfortable, and the new trains will make rail travel more attractive. The new fleet will be equipped with ETCS level 2 devices, air-conditioning, visual and audio information systems, wireless internet access, as well as internal and external monitoring. Fitted with on-board toilets, the trains will feature steps to help people with limited mobility get on and off, and there will be dedicated areas for pushchairs and bicycles. To ensure passenger safety, trains will have defibrillators and an intercom system, enabling travellers to contact the train driver, in case of an emergency. The use of aluminium light-eight structures will guarantee low electric energy consumption.

ELECTRIC LOW-FLOOR MULTIPLE UNIT
FLIRT

Koleje Mazowieckie, Poland
Technical features

Vehicle data

**Customer**
Koleje Mazowieckie

**Operated networks**
Mazowieckie Province

**Gauge**
1435 mm

**Supply voltage**
3 kV DC

**Axle arrangement**
Bo’2’2’2’2’Bo’

**Number of vehicles**
61

**Seats 2. class**
269

**Tip-up seats**
10

**Standing spaces (4 Pax./m²)**
321

**Floor height**
Low-floor 780 mm
High-floor 1270 mm

**Entrance width**
1300 mm

**Length**
98.2 m

**Vehicle width**
4280 mm

**Vehicle height**
780 mm

**Bogie wheelbase**
2700 mm

**Motor bogie**
2700 mm

**Trailer bogie**
2700 mm

**Driving wheel diameter, new**
870 mm

**Carrying wheel diameter, new**
760 mm

**Continuous power at wheel**
2000 kW

**Max. power at wheel**
3000 kW

**Starting acceleration, gross**
>1.0 m/s²

**Maximum speed**
160 km/h

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**Technology**

- Aluminium light-weight car body
- Multiple traction up to three vehicles
- Asynchronous traction motors
- Sprung pneumatic motor and trailer bogies
- Modern vehicle control system

**Comfort**

- Air conditioned passenger compartments designed in accordance with TSI PRM
- Seats with foldable intermediate armrests, tables, net magazine pockets and 230 V sockets.
- Induction loop for people with impaired hearing
- Modern passenger information system, monitoring, wifi
- Universal (TSI-PRM) and standard toilet

**Personnel**

- Ergonomically designed driver’s cab, equipped with devices to cool or heat food
- Ergonomic work-station for the conductor with a monitoring screen including a function enabling him or her to broadcast announcements

**Reliability/Availability/Maintainability/Safety**

- ETCS L2 Baseline 3.4.0 “Guardia” system
- Redundant drive systems with liquid-cooled IGBT converters
- Vehicle compliant with TSI Loc&Pas, CCS, CR TSI NOI, TSI SRT, TSI PRM
- Ergonomic diagnostic system of the vehicle for remote reading in order to ensure proper maintenance