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Aula der Wissenschaften

The new STADLER Intervention Train

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ÖBB Servicejet - Intervention Train 3rd Gen

2021 STADLER starts development of **Servicejet** for ÖBB

Today 5 trains engaged in type-testing and training



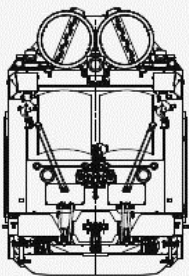
Key innovations clustered by functionality:

- General specifications
- Propulsion
- **Protection**
- **Rescue**
- **Evacuation**
- **Fire Fighting**
- Other Services

General specifications

Fully bi-directional multiple unit

- Full functionality even in black-out scenarios
- Total length 68 m - steel structure - 40 years design live
- Air suspension as secondary stage
- Prepared for DAC implementation
- ETCS L2 BL3.6 & PZB 90
- Homologation for AT & DE under TSI Loc&Pas, TSI-Noise



Propulsion

Flexible and highly redundant propulsion system

Trimodal drivetrain

- OH 15 kV up to **3 MW** power
- Battery-Diesel hybrid up to 1.2 MW power
- Battery only up to 600 kW power
- 2 x 390 kW diesel gensets
- 2 x 140 kWh battery storage
- 4 driven axles, **200 kN** max. tractive effort
- Vmax **160 km/h** (OH), 120 km/h (diesel, battery)



Protection

Protective functionality for rescue operations by integration of

- 4 jet fans @ 900 N thrust supporting air flow direction in tunnel
- End-to-end connectivity of protective interior
- Subdivision of interior into distinct protection zones, acting as air locks
- Smoke curtains
- Dust-, activated carbon-, CO- and HEPA- filter systems to ensure safe breathing air
- Leakage-resistant car-bodies at 50 Pa overpressure



Rescue

Emergency rescue operations conducted by this train with

- 20 fire fighters on board
- Up to 50 individuals rescued, utilizing the full protective functionality scope
- Diesel gensets provide power during rescue operations
- Traction batteries with sufficient energy for final escape from the longest tunnel & in worst case scenario (no OH power & severely reduced O₂ environment)



Evacuation

Evacuation and recovery operations enabled by this train

Evacuation of individuals

- Total of 331 people can be taken on board, when protective functionalities are not needed

Towing / ETCS coverage of broken-down trains

- Sufficient tractive power, even in black-out scenario
- Suitable breaking system
- UIC coupling / train busbar



Fire Fighting

Fully bi-directional equipment to fight and prevent fires

- 40m³ water, 1m³ foaming agent and CAFS
- LP water system @ 10 bar with 1 controllable monitor per end
- HP water system @ 100 bar with 2 controllable monitors per end
- Outer shell wetting of the driver's cabs
- 4 external LP water hook-up connections at corners of the train



Fire Fighting - continued

Fully bi-directional equipment to fight and prevent fires

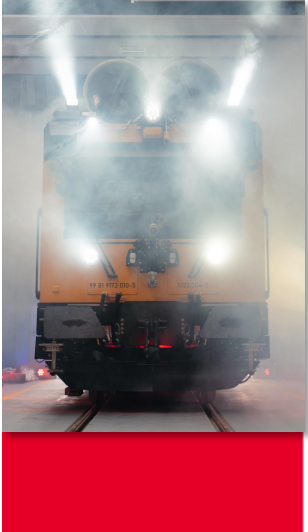
- Two-person driver cab for driver and fire fighter
- Fire department radio
- Exterior designed for operations @ 60°C ambient temperature for 30 minutes
- Thermal imaging camera on each end



Other Equipment

Integral systems enable maintenance activities in tunnels and around the rail infrastructure

- One lift for mobile equipment per side, 500 kg capacity
- Storage area for 7 mobile equipment containers
- Universal fastening systems throughout the interior
- 2 searchlights per end
- Lateral path lighting





Thank you for
your attention!

