

Media release

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Berlin, 23 September, 2024

Into the digital future with Stadler**Tailor-made signalling solutions from Stadler for state-of-the-art rail transport.**

Efficient, digital, sustainable, the rail transport of the future. Trains will be automated (ATO) or driverless (CBTC GoA4) on more and more routes, they will have high quality driver assistance systems on board (CWS, DAS) and will travel in using Europe-wide standardized train control and protection systems (ETCS). In the future, this will allow for higher travel speeds, shorter intervals and smoother cross-border traffic – the key to interoperability. Stadler is collaborating with rail operators on their journey into the digital future, offering a wide range of both conventional and innovative products and services in the field of signalling by developing customized solutions for every area of application (main line and branch line, LRV, metro, etc.).

Stadler's full signalling portfolio will be showcased at InnoTrans at the end of September, including the latest innovations such as CBTC, depot automation, the collision warning system and a new, dynamic passenger information system.

Fully automatic shunting

Stadler NOVA Pro Depot GoA4 is a CBTC (Communication Based Train Control) solution for fully automated (GoA4) shunting operations in railroad depots and tram depots. Stadler will present the customer solution for Waldenburgerbahn in the canton of Basel at Innotrans. The customer operates a 13 km long and up to 35 ‰ steep route with Stadler Tramlink streetcars and is already equipped with a modern CBTC system. Stadler NOVA Pro Depot GoA4 combines vehicles, infrastructure and automation technology to create an efficient overall system.

The system combines the benefits of on-board solutions such as ATO and sensor technology with the advantages of trackside technologies. This also includes scalable interlocking solutions that can be combined with existing systems and seamlessly integrated into the existing infrastructure. For rail operators, automated depot operation means, above all, fewer personnel costs, lowered risk of accidents and optimized vehicle transfer with shorter wait times.

Modern anti-collision system

Stadler NOVA Smartsense is another new addition to the Stadler Signalling portfolio and will be presented for the first time at Innotrans. The VDV-191-based collision warning system uses three modern sensor technologies for object detection: cameras, radar and lidar. When combined, they provide highly reliable and precise identification of classified obstacles such as cars or people on the track, even in the most adverse weather conditions. When an object is detected, train braking is automatically initiated.

Stadler NOVA Smartsense was developed for trams and light rail vehicles but can also be used on branch lines and slow sections of main lines (e.g. at stations). The modular and scalable system provides all the functionalities and configurations required to develop customized solutions. For example, Stadler NOVA Smartsense is currently in use on the Rheineck-Walzenhausen line of the Appenzeller Bahn (1.9 km, max. inclination: 263 ‰). A two-year test run is currently taking place here, which is set to lead to fully automatic rail operation.

Flexible signal transmitter

Stadler will also present new, high-quality LED signalling devices at the trade fair. These devices have high luminosity, are easily recognizable even in difficult lighting conditions and are characterized by their high availability. Compared to systems with incandescent lamps, they are maintenance-free, which minimizes the possibility of malfunction.

The LED signal heads are used in conjunction with special control modules in traffic signal systems, points control systems or our interlocking system. Depending on the area of application, they can also be used directly as a replacement for conventional signals. Light-emitting diodes are used in various signalling devices to produce alphanumeric displays. High-resolution matrix displays with very bright LEDs in all colors are also available.

Dynamic passenger information

Another innovation which will be shown at InnoTrans is the FIS4Stadler and MOFIS® passenger information systems.

MOFIS® provides travelers on bus and train platforms with dynamic information (actual, target, disruptions, etc.) directly on the latest generation of redesigned displays.

The newly developed, modular in-vehicle passenger information system FIS4Stadler provides passengers with dynamic information about the route. It is characterized by interoperability and is therefore able to communicate with the wayside passenger information system MOFIS®.

The modular structure enables the use of individual services and data, for example from Automatic Passenger Counting (APC) and Seat Reservation (RESI). The use of the DAS functionality enables rail operators to operate in an energy-efficient manner.

Proven ETCS solution

Stadler will also be presenting its ETCS solution GUARDIA at the trade fair in Berlin. GUARDIA is an on-board unit with SIL4 technology developed jointly with AngelStar to prepare multiple units and locomotives for the European Train Control System (ETCS). This system primarily monitors the maximum permitted speed, considering the ETCS braking curve, but also, measures the energy efficiency of a train for the route it is travelling on and compliance with special operating regulations. GUARDIA allows operation on all ETCS routes (Baseline 2 and 3) once approval has been obtained. The onboard solution allows the integration of existing Class B systems such as ATB (Netherlands) or PZB/LZB (Germany, Austria).

GUARDIA is already authorized and in use in numerous European countries. Last year, for example, trains in the Germany-Netherlands-Belgium border triangle were equipped with the system for cross-border operation. A project with Deutsche Bahn has shown that this is possible with GUARDIA, even without the involvement of the original vehicle manufacturer.

Innovative CBTC system

The new Stadler NOVA Pro CBTC system rounds off the display of innovations that will be presented at Innotrans. It is a high-quality, communication-based train control system (CBTC) for metro, LRV (light rail vehicle) and branchline applications. Stadler NOVA Pro consists of a modular design, can be flexibly integrated into existing infrastructures and is compatible with any wireless communication network. Fully redundant, it ensures greater operational reliability and higher excellence in rail transportation than legacy systems and allows infrastructure and maintenance costs to be reduced while increasing track capacity. Stadler NOVA Pro is a holistic and sustainable mobility solution for state-of-the-art digitalized rail operations.

Bundled competences

Stadler's signalling expertise is localized in its own competence center, which employs more than 600 specialists in signalling, control and safety technology at its headquarters in Wallisellen and other locations in Switzerland, Germany and Italy. The range of services extends from planning and project management to the installation and handover of turnkey solutions and includes the migration of existing technologies to new, automated and digitalized systems. The product portfolio is being continuously expanded and includes:

- Systems for automated driving (ATO),
- Train control and protection systems (ETCS)

- CBTC solutions for safe assisted or driverless driving,
- modern driver assistance systems and
- conventional and innovative infrastructure technology, including interlocking technology.

Stadler at the Innotrans 2024

24 to 27 September 2024

Messe Berlin

Hall 2.2, stand no. 230 + outdoor area

About Stadler

Stadler has been building trains for over 80 years. The provider of mobility solutions in rail vehicle construction, service and signalling technology is headquartered in Bussnang in eastern Switzerland. More than 14,500 employees work at several production and engineering sites and over 80 service locations. The company is aware of its social responsibility for sustainable mobility and therefore stands for innovative, sustainable and durable quality products. The product range in the mainline and urban transport sector includes high-speed trains, intercity trains, regional and suburban trains, subway trains, tram-trains and trams. Stadler also manufactures mainline locomotives, shunting locomotives and passenger coaches. Stadler is the world's leading manufacturer of rack railway vehicles.

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