



Report

DEUTA - ETCS Onboard Units

For the German Unification Transport
Project VDE 8



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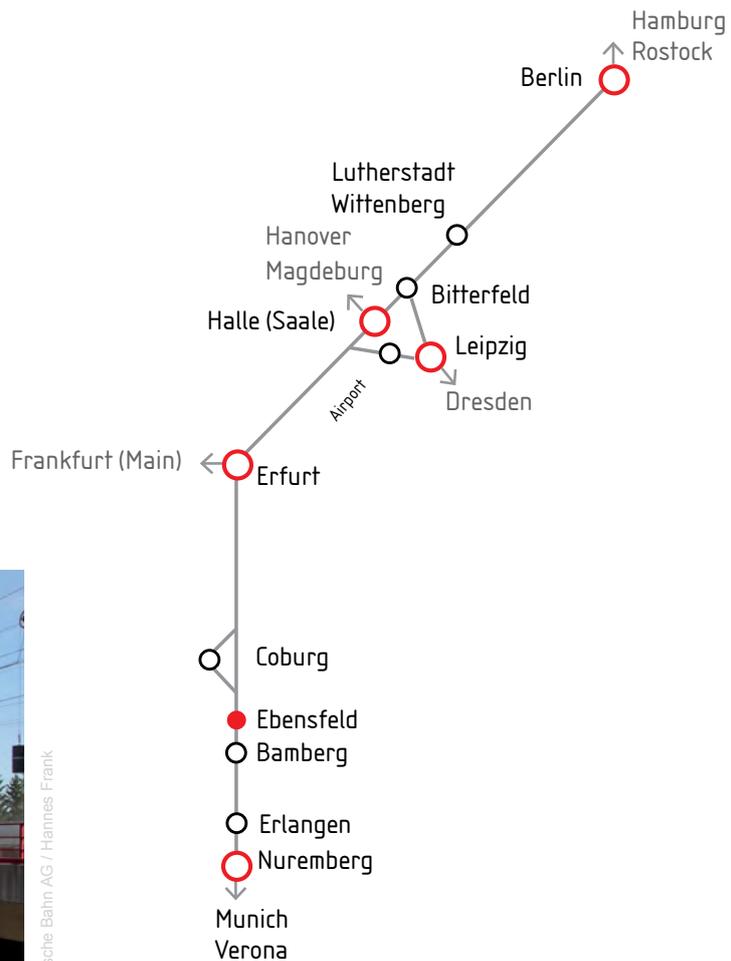
»DEUTA - For Maximum ETCS Safety – across Germany and Europe«

For their ride on the VDE 8 track the high speed trains ICE 1 and ICE 3 of Deutsche Bahn AG were equipped with modern ETCS Onboard Units and prepared for the implementation of the specification Baseline 3. The Baseline 3 requires the safe display acc. SIL 3 and the safe touch input acc. SIL 2 for the man machine interfaces.

Since 1990ies DEUTA-WERKE already equipped the driver's desk terminals for the refitting of the ICE 1 (BR 401) and ICE 3 (BR 403) fleets. Within the VDE 8 project the existing speed terminals of the two train models were retrofitted by Multi-Functional Terminals with safe IconTrust® and SelectTrust® technology.

DEUTA-WERKE is the specialist for retrofit solutions worldwide. For the driver's desks of the ICE 1 and ICE 3 models the DEUTA engineers developed for each model a tailor-made form, fit, and function solution, with a terminal hardware integrating 1:1 inside the existing driver's desk and train protection environment.

The existing DEUTA data storage cassette DSK, was replaced in both ICE models by the Multi-Functional Recorder DEUTA REDBOX^{top}. The ETCS-Onboard equipment is completed by Doppler Radar Sensors DRS 05.



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»IconTrust® & SelectTrust® –

4x patented safety on each ICE«

IconTrust® for the safe display in ICE 1 and ICE 3

DEUTA's patented IconTrust®-solution allows train drivers and passengers to feel really safe. IconTrust® monitors predefined areas on the TFT display in the driver's desks of the ICE 1 and ICE 3 fleet differentiating between valid and invalid information. IconTrust® uses a safe computer to transmit the data to the panel PC, where they are processed and displayed. IconTrust® monitors the represented screen areas on the TFT display and transmits the confirmation back to the safe computer. The comparison occurs in the safe computer, e.g. in the EVC (European Vital Computer).

Since IconTrust® technology scans the TFT-signal directly, it does not depend on any academic MTBF value estimates for graphic controllers and detects even potential bugs of the software running on them, it fully scrutinizes for all conceivable malfunctions.



SelectTrust® – for safe touch input

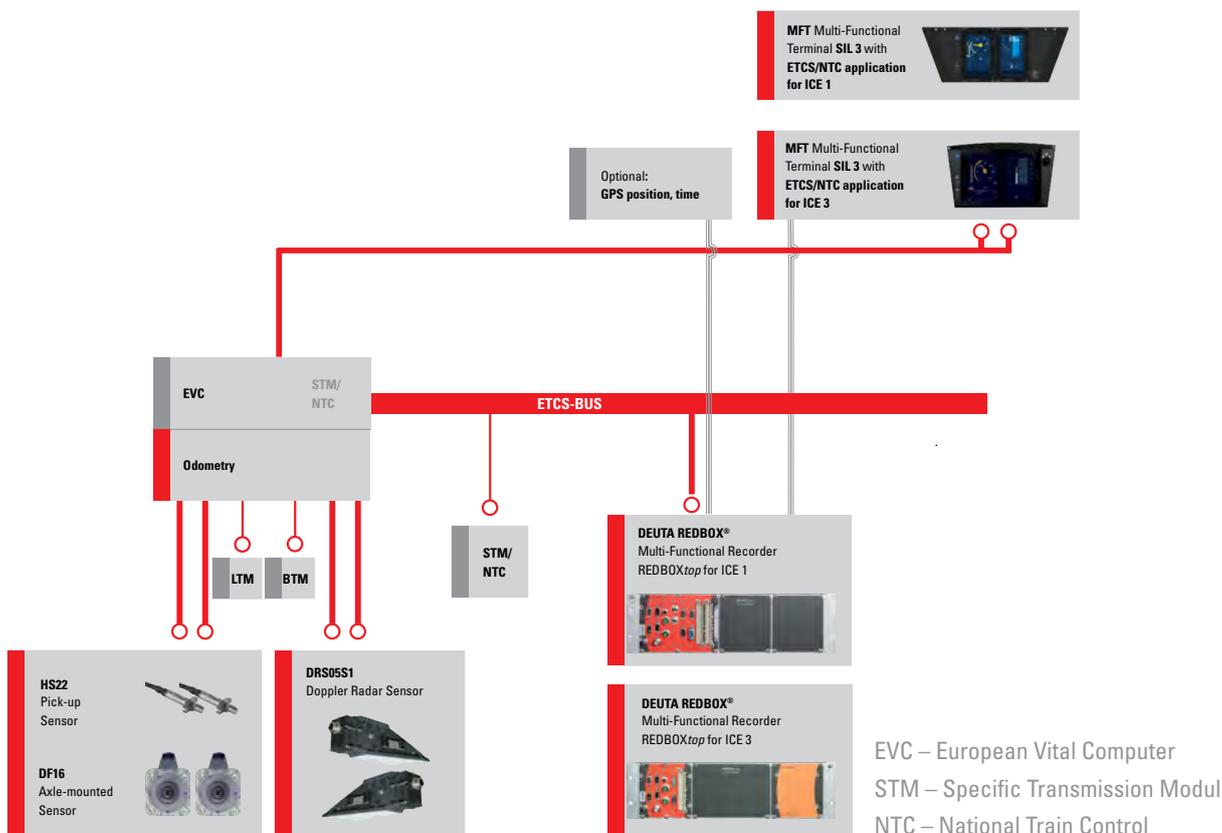
In the VDE 8 project IconTrust® is completed by SelectTrust®. This technology demonstrably enables safe manual input of information via touch screen or a softkey, for the first time. The entry position and the visualisation at this position are checked in the functional safe SelectTrust® solution. In case of total correctness, a functionally safe entry action will be transmitted to a safe EVC computer.

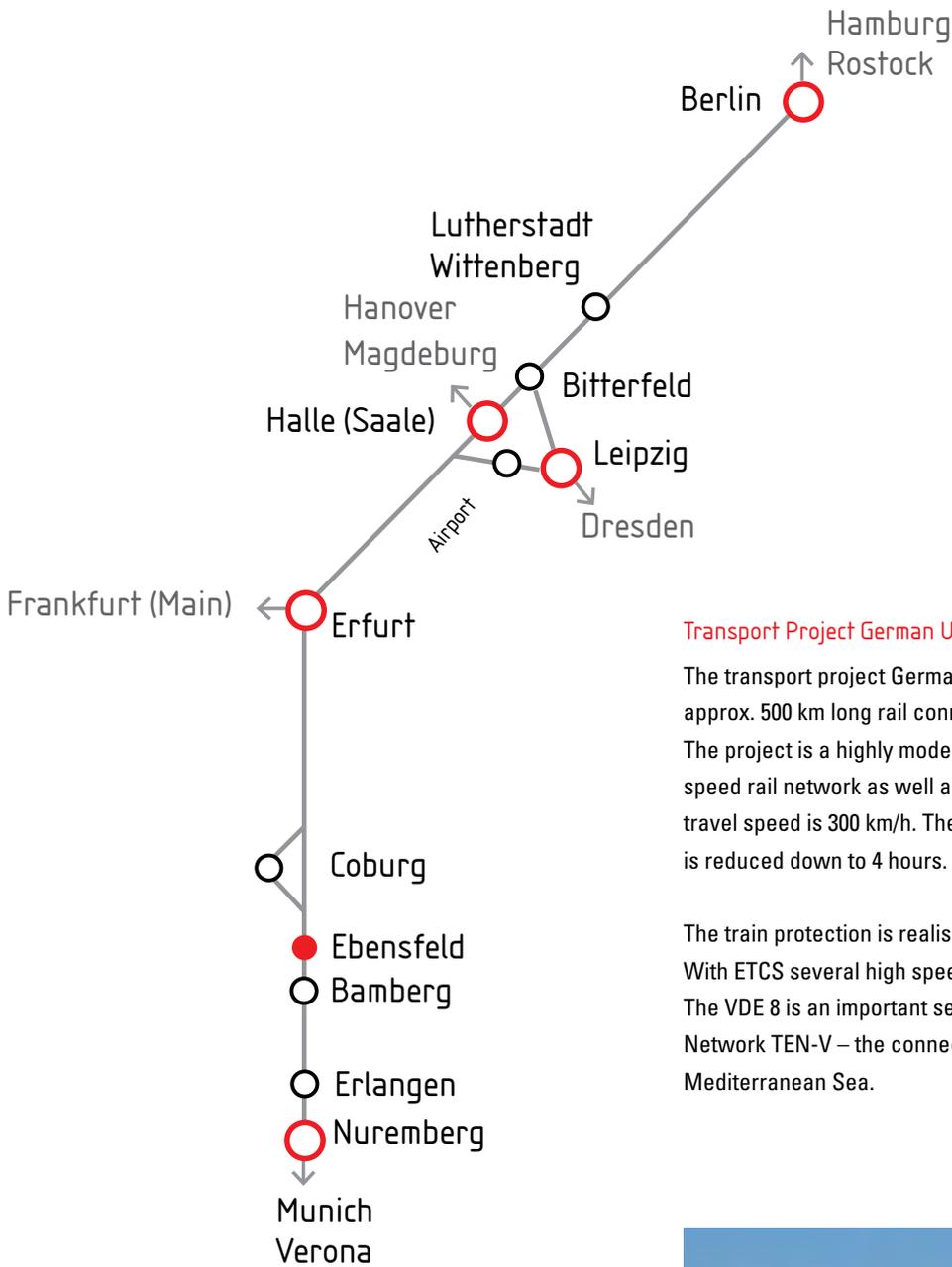


»DEUTA – ETCS Onboard Units – for ICE 1 and ICE 3 at a glance«

The DEUTA Multi-Functional Terminals are prepared for the European-wide ETCS and also for country specific STM/NTC operation. The Multi-Functional Terminal equipped with the DEUTA terminal application represents the specific information for the national train protection system in ETCS as well as in STM/NTC operation: target speed and current speed, target distance, signal information and the mode of the train protection.

The DEUTA REDBOX® recorders store the ETCS relevant data according to the Baseline 3 specification. ETCS essentially works on the basis of message data. In the STM-/NTC operation mode the signals of the class B systems are also stored. Here, it is essential to record data such as, e.g. speed and Balise information, speed changes. The quality and ruggedness, self-diagnosis and reliability of sensors have a considerable influence on the accuracy and safety of the ETCS applications. The different types of output signals ensure secure data transfer. DEUTA's range of sensor products can be divided along three measuring principles – radar sensors, pick-up sensors and axle-mounted generators.





Transport Project German Unification No. 8 - VDE 8

The transport project German unification No. 8 (VDE 8), covers the approx. 500 km long rail connection between Nuremberg and Berlin. The project is a highly modern traffic concept in the German high-speed rail network as well as in the freight network. The maximum travel speed is 300 km/h. The travel time between Berlin and Munich is reduced down to 4 hours.

The train protection is realised with the European Standard ETCS. With ETCS several high speed trains can run in parallel on one track. The VDE 8 is an important section in the Trans-European Transport Network TEN-V – the connection between Scandinavia and the Mediterranean Sea.



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DEUTA – Your Worldwide Home of Trust-Technology:



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