SPRÁVA ŽELEZNIC

Press Release

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ETCS System Also Being Tested for Higher Speeds Between Břeclav and Vranovice

One of the objectives of running tests under way between Břeclav and Vranovice is to test the European Train Control System (ETCS) also for speeds of 200 kph. This system started serving commercial railway operation in the section Břeclav – Kolín last year. Its installation is i.a. one of the necessary conditions for a gradual speed increase on the Czech railway above the current 160 kph.

For these runs, the testing locomotive Siemens Vectron was used. It is fully equipped with the on-board ETCS system part in version of basic specifications No 2 (the so-called Baseline 2). Besides basic function tests, proper cooperation between the on-board and the fixed part of the ETCS system has also been verified. It did not show any defects and confirmed the system's full functionality even at speeds of 200 kph. *"The tests' results demonstrated that after necessary modifications of the railway infrastructure, it will be possible in a relatively short time to increase maximum speed of trains in some line sections*", says Mr. Jiří Svoboda, Director General of Správa železnic.

Firstly on the rail network of Správa železnic, the ETCS system was completed in a part of Czech Rail Transit Corridor I Kolín – Česká Třebová – Brno – Břeclav – state border with Austria/Slovakia. *"The ETCS system allows a reliable and continual control of trains' running. The technology being used verifies if the train runs in the exactly specified section of the line. If the drive e.g. does not respect the "Stop" signal, the system will ascertain this defect and the train can stop safely*", adds Mr. Svoboda.

At present, the ETCS system covers in total 255 kilometres of railway lines managed by Správa železnic; more 206 kilometres between Břeclav and Petrovice u Karviné and 108 kilometres between Přerov and Břeclav will be added this year. The system is being currently installed also on further lines, more specifically Praha Uhříněves – Votice (will be completed this year), Kralupy nad Vltavou – Prague – Kolín (completion in 2023) and Plzeň (excluded) - Cheb (completion in 2022). Project preparation is currently under way for several more sections. The national implementation plan assumes that as of 1 January 2025, no trains without an on-board part of the ETCS system will be allowed to run on corridor lines.

The necessity to introduce the unified European Train Control system is due especially to the fact that there are currently many types of train control systems in EU member states. Besides fundamentally basic differences in their construction and technical design, they also demonstrate a different level of assuring railway operation safety. However, their main disadvantage is that trains in international transport must be equipped with various types of devices to communicate with train control systems of the states on the territory of which they are at a given moment. One common system can eliminate this unsatisfactory situation.

The ETCS system is an international train control system corresponds not only to EU legal regulations and technical specifications for interoperability but is also applied by Správa

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železnic in such a way to satisfy requirements of national regulations for equipping the infrastructure with the necessary safety equipment. Pursuant to legal regulations of the Czech Republic, a condition applies for investments co-financed from EU funds that in case of modernizing lines for speeds exceeding 100 kph, the obligation of their equipping with the ETCS system always arises. On lines managed by Správa železnic, ETCS Level 2 is currently being installed. It requires using data transfers by the GSM-R radio rail network which is an equivalent to the GSM mobile network with functions and modifications made for the railway.

The ETCS system does not control only the movement and position of trains on relation to signal heads with the "Stop" signal but it also supervises the observance of the maximum speed allowed in the given section and the maximum speed allowed for the train. In case of its exceeding, the train controls system will interfere into the direct vehicle's control. However before starting service or emergency braking, it warns the driver first so that he has the option to decrease the vehicle's speed himself by changing the way of driving or to stop the vehicle; thus it can prevent an intervention of the system as such.

Within the ETCS system Level 2, communication between the fixed ETCS part (radio block centre) and the on-board (mobile) ETCS parts in trains is going on by means of the GSM-R network. In practice this means that the radio block centre has at its disposal information from conventional train control systems on the whole line, trains provide information on their position and based on this information, trains are given clearance for running. Information on the trains' position is ascertained within the ETCS system both from conventional systems for trains' detection and by form of the trajectory run from eurobalises which are more line components of the ETCS system located in the tracks.