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Ministry of Transport and Communications
Ministry of Transport and Communications of the Republic of Latvia

Gogoļa iela 3, Riga, LV-1743, Latvia, phone: +371 67028210, fax: +371 67217180,
e-mail: satiksmes.ministrija@sam.gov.lv, www.sam.gov.lv

Riga, 13.12.2017
No 13-1/3810

Henrik Hololei
Director General,
Directorate-General Mobility and Transport
European Commission

Re CCS TSI national implementation plan
Pursuant to Regulation (EU) 2016/919 and amendments to the OPE TIS national implementation plan in accordance with Regulation (EU) 2015/995

Dear Mr Hololei

Pursuant to Article 6(4) and (5) of Commission Regulation (EU) 2016/919 of 27 May 2016 on the technical specification for interoperability relating to the 'control-command and signalling' subsystems of the rail system in the European Union, which requires Member States to draw up, and notify the European Commission of, a national implementation plan ensuring compliance of technical specifications for interoperability with the 'control-command and signalling' subsystems (CCS TSIs), in 2007 the CCS TSI national implementation plan was adopted, this having been drawn up in the light of the requirements set out in the Commission Decision of 28 March 2006 concerning the technical specification for interoperability relating to the control-command and signalling subsystem of the trans-European conventional rail system. The national implementation plan was notified to the European Commission and the Latvian Permanent Representation on 20 December 2007 under cover of letter ref. 2.3.10.-3594.

Please note that the command and signalling systems used for trains on Latvia's 1520 mm system is a Class B signalling system. Binding EU legislation provides for a Class A signalling system. The national implementation plan provides for the deployment of ERTMS on the 1520 mm railway network where line speed is increased to 160 km/h or more. The national implementation plan also describes the control-command and signalling subsystems used by the public infrastructure manager VAS Latvijas dzelzceļš [Latvian Railways] and sets out ERTMS deployment scenarios. In accordance with point 7.2.3 of the Annex to Regulation (EU) 2016/919 ("Availability of Specific Transmission Modules"), to provide a technical CCS description of how signalling system communications work between the rail infrastructure and traction units, a technical description has been drawn up for Class B infrastructure and traction unit signalling.

In compliance with Article 6(4) of Regulation (EU) 2016/919, the national implementation plan was reviewed at the end of 2017 and is available on the website of the Valsts dzelzceļa tehniskā inspekcija [State Railway Technical Inspectorate] at: http://www.vdzti.gov.lv/index.php?id=399&sa=322,329,436,373,374,375,376,382,377,399 .

Similarly, the Ministry of Transport and Communications, pursuant to point 2 part 3 of Commission Regulation (EU) 2015/995 amending Decision 2012/757/EU concerning the technical specification for interoperability relating to the ‘operation and traffic management’ subsystem of the rail system in the European Union (amending Articles 1, 2 3 of, and Annex J to, the Decision), is sending the European Commission the revised 2017 OPE TIS national implementation plan. Pursuant to point 3 part 3 of Regulation (EU) 2015/995, the national implementation plan can be accessed on the State Railway Technical Inspectorate’s website at:
http://www.vdzti.gov.lv/index.php?id=401&sa=322,329,436,373,374,375,376,382,377,399,400,401 .

Encl.:
1. Revised CCS TIS national implementation plan (2017 version), 12 pages;
2. Revised OPE TIS national implementation plan (2017 version), 1 page;

State Secretary K. Ozoliņš

Ivanova
Margarita.Ivanova@sam.gov.lv
(+371) 67028371

Annex No 1

European Railway Traffic Management System (ERTMS) National implementation plan

Latvia

(Revised 2017)

Contents

Introduction

This plan has been drawn up pursuant to Commission Decision 2006/679/EC concerning the technical specification for interoperability relating to the control-command and signalling subsystem of the trans-European conventional rail system (hereinafter 'TSI'), which requires a TSI implementation plan to be drafted. The plan was revised in the light of the requirements of Commission Regulation (EU) 2016/919 of 27 May 2016 on the technical specification for interoperability relating to the 'control-command and signalling' subsystems of the rail system in the European Union and Commission Implementing Regulation (EU) 2017/6 of 5 January 2017 on the European Rail Traffic Management System European deployment plan.

1. Current status

Public railway infrastructure in Latvia is equipped with the control-command and signalling systems shown in Fig. 1.1.

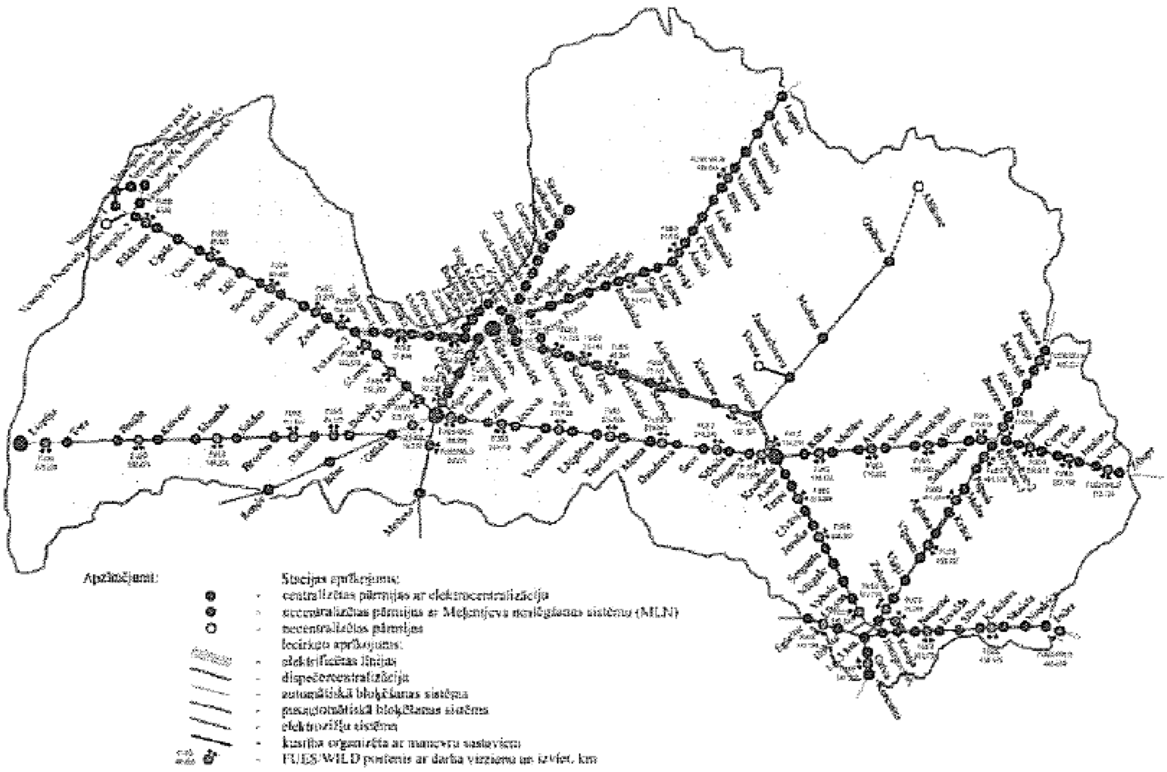

Figure 1.1 Latvia's rail zones and the equipment they feature

Automatic and semi-automatic blocking systems ensure the transmission of information to rolling stock with the help of the Continuous Automatic Train Signalling (ALSN) system (continuously on sections equipped with an automatic blocking system and prior to individual sets of traffic lights where use is made of a semi-automatic blocking system). This system also periodically monitors driver alertness and checks speed, as per the description of Class B systems in the European Railway Agency's technical documentation 'Description of CCS Class B systems', ERA/TD/2011-11, version 3.0.

The train radio communications system is an analog simplex voice communication system that is fitted on all sections of line; It operates in the 2130 Hz band.

There is also an intra-station radio communications system, which covers communications relating to shunting, technical maintenance, and technological/special communications for

emergency situations. This system operates on the basis of a zoning principle in the 150 and 450 Hz bands.
Latvia's 1520 mm gauge network has historically been developed with an eye to full interoperability with the railway networks of the neighbouring EU Member States Estonia and Lithuania, and with the 1 520 mm gauge railway networks of the neighbouring non-EU Member States - the Russian Federation and the Republic of Belarus. The same is true of the Class B ALSN system referred to in the European Railway Agency's technical documentation 'Description of Class B CCS systems'. The systems recently introduced in these countries (e.g. the KLUB-U and BLOK systems in Russia and VEPS in Estonia) are based on the ALSN standard and are in fact a new variant of it with separate additional functions.

The sections of strategic significance on Latvia's public rail network are the east-west and south-north (Rail Baltica) corridors.

The main purpose of Latvia's east-west rail corridor is to bring freight from the Russian Federation and Belarus to Latvia's ports. Allowance is also made for this in the TSI, point 1.2 of which states that "these TSIs apply to networks with 1435 mm, 1520 mm, 1524 mm, 1600 mm and 1668 mm gauges. They do not, however, apply to 1520 mm gauge lines which are short in length, cross borders and are connected to the network of third countries." This is necessary to allow locomotives from Russian Federation and Belarus railway undertakings to run. These types of locomotive currently operate on the lines running from the border to the Rēzekne and Daugavpils stations.

2. ERTMS deployment measures

There are two basic components to the European Railway Traffic Management System (ERTMS):

- GSM-R, which is based on the GSM standard, but which uses other dedicated rail frequencies and a number of progressive functions. This is a radio system that is used to exchange information (voice and data) with trains;

- ETCS, the European Train Control System, which not only provides train passengers with information on train speed, but also continuously monitors compliance with instructions.

2.1. GSM-R:

The objectives of projects to upgrade Latvia's 15200 mm gauge radio system are as follows:

- to set up a uniform GSM-R train and station voice radio communications system that complies with EU standards, replacing the current radio communications system;

- to ensure communications between all personnel involved in rail traffic, with various priority levels, user groups, local-dependent and functional addressing, emergency calls, etc., thus guaranteeing safety and helping prevent accidents;

- to enhance train operational safety;

- to reduce the risk of rail accidents that may impact human life or property or cause harmful substances to be released into the environment;

- to lay the foundations for state-of-the-art service provision to passengers and freight carriers and other companies involved in rail transport;
- to create the basic conditions for the deployment of the second and third-level ERTMS traffic control system;
- to reduce the running costs of the radio communications system;
- [to] ensure compliance with the requirements of Directive 2008/57/EC of the European Parliament and of the Council on the interoperability of the rail system within the Community.

Radio systems are chiefly used to maintain communications with train control centres and train drivers, and for shunting communications. The use of GSM-R will allow rail staff to communicate via a single dedicated ratio communications system, providing an innovative basis for train use and rail services and so satisfying the needs of subscribers and customers alike.

2.1.1. Current status of the 1520 mm gauge network

For radio communications with trains on the basic 1520 mm gauge network, use is currently made of radio stations in the 2.13 MHz frequency spectrum (RVS-1; RV-4KV-D; RS-46MCV).

The 2.13 MHz frequency band's technical parameter “spurious domain emissions limit” for manufacturers in Ukraine, Belarus and Russia is not in line with the EU’s “Recommendation ITU-R SM.329, TABLE 3; Category B limits”, with Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility, or with the requirements of the related standards EN 50 121-3-1, EN 50 121-3-2, EN 50 121-4, EN 61000-6-2, EN 61000-6-4 and EN 301 489.

In view of the above, after 2019 it will not longer be possible to extend rail radio station permits in the 2.13 MHz frequency band.

Since the plan is to ban the use of current radio stations in the 2.13 MHz frequency band and roll out the GSM-R system only between 2025 and 2028, consideration must be given to deploying DMR (Digital Mobile Radio) or the TETRA radio system for the intervening period on the basic 1520 mm gauge network.

For example, the DMR radio communications system operates on the 450 MHz band and the DMR digital protocols are fully defined in the ETSI MDR Tier 2 standard, which is the internationally recognised and applicable standard.

As things stand, the DMR system has been deployed in the Estonian rail company a/s Eesti Raudtee, and the GSM-R system solution in the Lithuanian rail company a/s Lietuvos Geležinkeliai.

2.1.2. Deployment of GSM-R on the 1520 mm network

The earliest the GSM-R deployment plan could be implemented on Latvia's 1520 mm gauge network is 2025-2028. The total length of rail infrastructure lines on the Latvian 1520 mm gauge system to be fitted with GSM-R is 1 860 km. To do so, 226 base stations and voice communications would be needed. On Latvia's 1520 mm gauge network, after transition to GSM-R, a dual rail control procedure will have be to introduced in border areas in coordination with the competent authorities in the countries concerned.

The rail systems of neighbouring countries (e.g. Russia and Belarus) will continue to use their current radio communications systems. Application of the dual regime in Latvia will thus be on the basis of existing radiocommunications.

Latvia's EU neighbours Lithuania and Estonia will also deploy GSM-R. The current arrangement with these countries will thus be replaced with the GSM-R solution. In the light of the Lithuanian and Estonian plans to deploy GSM-R, the deployment schedule in the relevant sections of line in border areas may be adjusted with a view to streamlining deployment of GSM-R arrangements.

2.2. Specific Transmission Module

Point 7.2.3. of the TSI (availability of Specific Transmission Modules) states that if lines that fall within the scope of this TSI are not equipped with a Class A train protection system, the Member State shall make every effort to ensure the availability of an external Specific Transmission Module (STM) for its legacy Class B train protection system or systems. In this context, due regard is to be given to ensuring an open market for STMs under fair commercial conditions. Point 4.1.2 of the TSI gives an overview of the requirements for Class B systems and the STMS (which allow a Class A on-board system to operate on Class B infrastructure) for which the Member State in question is responsible.

Since the Class B system used in Latvia is the same as that used in Lithuania and Estonia, all three countries need the same STM module, so this specification is common to all three. Since the historically different gauge hampers the movement of new locomotives fitted with Class A systems to each of the Baltic States, in practice there is not currently a need for a module fitted with Class A systems.

In the light of the above, technical requirements for the STM module and the technical description for the Class B equipment are as follows:

Traction unit ALS safety equipment

The traction unit automatic locomotive signalling (ALS) safety equipment is an integral part of traction units' safety devices, operation of which is ensured by:

– Trackside ALS devices;

– Track circuits;

– Traction unit ALS safety hardware ("hardware");

– Rail traffic lights, installed at various points along the track according to the speed restriction programmed by the hardware;

– Traction unit, acting as a source of shunt resistance;

– Traction unit's speed restriction, braking and driver alertness monitoring algorithms.

2.2.1. Hardware's main functions

2.2.1.1 ALS signal reception, decoding and signal display on traction unit traffic lights.
2.2.1.2 Traction unit speed restriction.
2.2.1.3 Halting of traction unit in emergency situations.
2.2.1.4 Monitoring of driver alertness.
2.2.1.5 Recording of traction unit's principal dynamic parameters.

2.2.2. Reception and decoding of ALS signals

2.2.2.1 Hardware must receive and decode the track signals shown by the ALS. Strength of ALS signal current on track:
– 1.4A-25A on line sections powered with alternating current with 75 Hz ALS signal frequency;
– 1.2A-25A in zones with autonomous propulsion and in zones powered with direct current with 50 Hz or 75 Hz ALS signal frequency;
– 2A-25A in zones powered with alternating current with 50 Hz or 75 Hz ALS signal frequency;
2.2.2.2 ALS time diagrams, corresponding to the field device used, are shown in Annex 1.
2.2.2.3 ALS signal frequency may be 50 Hz or 75 Hz.
2.2.2.4 the results of ALS signal decoding and train traffic light signal readings are shown in Annex 2.
2.2.2.5 ALS signal frequency may be selected automatically or manually. Transition from coded to non-coded sections may be automatic or manual, but from non-coded to coded, i.e. with display of code signals, only automatic.
2.2.2.6 Hardware must correctly detect and decode ALS signals where the ALS signal level is 12 dB (or more) higher than the level of interference.
Note. Correct decoding – if at least two signals are detected by the ALS hardware from three continuous and consecutive code signals.

2.2.2.7 Hardware must provide:
2.2.2.7.1 traction unit's traffic light signal corresponding to the received code signal;
2.2.2.7.2 white signal on the traction unit's traffic light when the code signal disappears, if prior to its disappearance a G or Y code signal was received;
2.2.2.7.2 red signal on the traction unit's traffic light when the code signal disappears, if prior to its disappearance a RY code signal was received;
2.2.2.7.4 short audio signal when the traction unit's traffic light signal changes;
2.2.2.7.5 continuous monitoring of traction unit speed;
2.2.2.7.6 continuous monitoring of 20 km/h speed limit being exceeded, with a red signal appearing on the traction unit traffic light;
2.2.2.7.7 continuous monitoring of 60 km/h speed limit being exceeded in the case of passenger trains and 50 km/h in the case of freight trains, with a red or yellow signal appearing on the traction unit traffic light;
2.2.2.7.6 continuous monitoring of 80 km/h speed limit being exceeded, with a yellow signal appearing on the traction unit traffic light;

2.2.3. Traction unit restrictions and programming

2.2.3.1 Restriction of traction unit speed is done by activation of the brakes where the traction unit exceeds the permissible speed limit. Authorised speeds are programmed into each traction unit type according to design speed and permitted travel speed along station/area track sections, these being determined by the rail infrastructure manager.
2.2.3.2 Maximum permissible speeds are programmed according to the readings received from the traction unit's traffic light signals:

- **Green signal (G)** (for operation in areas with automatic blocking), **white signal** (for operation in areas with semi-automatic blocking) – maximum permissible speed (**determined by the train infrastructure manager**) in station/area track sections depending on type of traction unit (passenger, freight, shunting);

- **White signal** (for operation in areas with automatic blocking, signal indicates absence of ALS codes) – 60 km/h (in coded areas);

- **Yellow signal (Y)** – determined by the rail infrastructure manager depending on the algorithm used to monitor driver alertness;

- **Yellow and red signal (YR)** – 60 km/h for passenger trains and 50 km/h for freight trains;

- **Red signal** – 20 km/h.

2.2.3.3. If the traction unit speed exceeds the permitted limit, a sound warning is activated and if after seven seconds the driver fails to slow the train down to the permitted level, a safety device cuts in to bring the traction unit to a halt.
2.2.3.4 The conditions for passing (or stopping at) a traffic light showing red are laid down by the rail infrastructure manager.
2.2.3.5. To enhance the safety of the Class B system, use is also made of an over loop on sections with upgraded signalling systems.

2.2.4. Alertness monitoring

2.2.4.1 The hardware must control driver alertness.
2.2.4.2.Alertness must be controlled automatically depending on signal readings (i.e. driver takes no action to check alertness monitor).
2.2.4.3 Recommended alertness control period (minimum) –
If the traction unit traffic light shows:

- **green, white signal** (on sections fitted with semi-automatic or automatic blocking) - 60-90 s;

- **yellow signal** – 30-40 s at a speed of over 80 km/h and 60-90s at a speed of up to 80 km/h.

- **yellow and red signal** – 30-40 s. Along station tracks - 15 to 20 s.

Driver alertness must also be controlled when the lights showing on the traction unit's traffic light change. This requirement does not apply if the traction unit traffic light changes to green.

Driver alertness need not be controlled if the traction unit speed is less than 10 km/h.

2.2.5. Construction requirements

2.2.5.1 Hardware comprises:
- ALS signal receiver poles;
- ALS signal reception/decryption, driver alertness control, management and recording unit;
- traction unit traffic light:
- Driver alertness control switch if there is no automatic driver alertness control (button, pedal, etc.).

2.2.5.2 The ALS signal receiver poles must be installed in the traction unit over the rails so as to ensure the continuous reception of ALS signals along curves with a minimum radius of 200 m, with the lowest point of the installed receiver poles being at least 100 mm above the track surface.
2.2.5.3 The device must be mounted in a traction unit with a shunt resistance of no greater than 0.06 Ω.

2.2.6. Recording of main parameters

2.2.6.1 Main movement parameters to be recorded:
- traction unit speed:
- driver alertness status;
- air pressure in brake line and brake cylinders;
- traction unit's ALS hardware status;
- traction unit's traffic light signal readings;
- status regime of electro-pneumatic auto shut-off valve (on/off).

All the above parameters must relate to track kilometre points.
2.2.6.2 once recorded, it must be possible to export the parameters to a computer or print them out.

2.3. Deployment of ETCS

Given the continuous development of ETCS, which is affected by objective circumstances, it is not currently possible to specify the use of this or another ETCS version. Latvia's approach to ETCS deployment varies according to whether given lines connect to neighbouring countries and the prospects for further development. The plans for these lines thus vary.

2.3.1. Deployment of ETCS on the 1520 mm gauge network

As mentioned above, the 1520 mm gauge railway network in the Republic of Latvia has historically been developed with an eye to full interoperability with the railway networks of the neighbouring EU Member States Estonia and Lithuania, and with the 1520 mm gauge railway networks of the neighbouring non-EU Member States - the Russian Federation and the Republic of Belarus. The same is true of the Class B ALSN train movement management system. The systems recently introduced by these countries (e.g. the KLUB-U and BLOK systems in Russia and VEPS in Estonia) are based on the ALSN standard and in fact are a new variant of it, with separate additional functions.

The main purpose of Latvia's east-west train corridor [(Kārsava/Zilupe–Rēzekne)/(Indra–Daugavpils)–Krustpils–Jelgava/Riga–Ventspils/Liepāja], which makes up the central portion of the rail network, is to move freight from the Russian Federation and Belarus to Latvia's ports. Allowance is also made for this in the TSI, point 1.2 of which states that "these TSIs apply to networks with 1435 mm, 1520 mm, 1524 mm, 1600 mm and 1668 mm gauges. They do not, however, apply to 1520 mm gauge lines which are short in length, cross borders and are connected to the network of third countries." This is necessary to allow locomotives from Russian Federation and Belarus railway undertakings to run. These types of locomotive currently operate on the lines running from the border to the Rēzekne un Daugavpils stations.

As things stand, there is no justification whatsoever for deploying the ETCS train management system on the existing 1520 mm gauge railway network, as there is already full interoperability in the region, and as for rail traffic on the 1425 mm network, locomotives cannot physically cope with the gauge difference. This being the case, deploying such a system will not in itself increase the general level of interoperability which the Class B system currently assures on the 1520 mm gauge network. There are no plans in the foreseeable future to make other upgrades to the rail system (e.g. increase in maximum speed) which would result in the existing train management system being improved. Deployment of ETCS would mean simultaneously maintaining the existing Class B system to ensure that locomotives from neighbouring states are able to continue running. However, the investments needed to deploy the ETCS system are completely disproportionate to the likely benefits of deploying such a system.

The upgrade of the management and signalling system on the east-west corridor has been completed using state-of-the-art microprocessor systems, and these works are set to continue. Preliminary work has been completed on the upgrade with a view to simplifying deployment of ETCS modules, should the need arise. These systems allow level 2 ETCS functionality to be assured using GSM-R, whilst simultaneously maintaining the functions of the Class B ALSN.

2.3.1.1. Speeds of up to 120 km/h

As already pointed out, there is nothing to suggest here that the Class B system cannot continue to serve its purpose and not guarantee interoperability, so there are currently no plans to deploy the ETCS.

2.3.1.2. Speeds of between 120 and 160 km/h

In the event of the speed of passenger trains being increased, the existing Class B system which is scheduled and whose signal placement is commensurate with speeds of up to 120 km/h, will no longer be able to guarantee train management at higher speeds, so an upgrade will be necessary. Latvia plans:

- to deploy ETCS devices on lines where there is scheduled to be an increase in the speed of passenger trains;
- since these lines will continue to form part of the 1520 mm gauge network, and the option must be maintained of using existing rolling stock on them, the ALSN system will be kept in parallel, with upgrades being made as necessary. This guarantees that existing rolling stock can run at speeds of up to 120 km/h.
- The new rolling stock, which is designed to operate at speeds of over 120 km/h, will be fitted with on-board ETCS devices, though interoperability with the Class B system on other lines will be assured by the STM module.

Thought was also given to the option of having the ETCS as the only system on the line, but this would hamper the interoperability of the 1520 mm gauge rail system. In order to ensure that existing rolling stock was able to use the 1520 mm gauge network in full, all traction units (belonging to all operators, including private) would have to be fitted with on-board ETCS devices and an STM module, which would generate excessive costs without delivering any functional improvements. The proposed scenario, by contrast, will ensure that all rolling stock can operate right across the 1520 mm gauge network, whilst simultaneously allowing rolling stock equipped with ETCS to travel on lines fitted with ETCS at speeds of up to 160 km.h.

Deployment deadlines and costs depend on what sort of infrastructure development plan is approved, and will be set as and when lines are upgraded. One fundamental aspect that must be taken into account in the event of an increase in train speed is measures to improve infrastructure geometry and the removal of level crossings. Deadlines must also be dovetailed with the planned deployment of GSM-R, otherwise the system will not be able to work.

Implementation of these measures also depends on what plans Lithuania and Estonia have for the railway lines that go to Latvia.

2.3.1.3. Speeds of over 160 km/h

In this case, deployment of ETCS is just one precondition for an increase in speed. In addition to deployment of ETCS, thought will also have to be given to ambitious line conversion works, including the improvement of line geometry, the removal of level crossings, etc. As things stand, these measures have not been investigated in further detail on Latvia's 1520 mm gauge network.

2.3.2. Deployment of ETCS on the 1435 mm gauge network (the new Rail Baltica rail link)

Commission Implementing Regulation (EIU) 2017/6 of 5 January 2017 on the European Rail Traffic Management System European deployment plan, and Annex I thereunto, define, inter alia, an ETCS deployment timetable for the network corridor in the Baltic States.

The object of the Rail Baltic project is to integrate the Baltic States into the European rail network, and the project involves four EU countries - Poland, Lithuania, Latvia and Estonia plus, indirectly, Finland, the route being extended to connect Tallinn with Helsinki. Under the project, the plan is to deploy a new line with a 1425mm gauge (European standard) in the Baltic States.

Deployment of the signalling system throughout the entire length of the line will be done centrally starting in 2022 (indicative launch), and will be done by AS RB rail, a consortium representing all three Baltic States. The project's basic design guidelines foresee the deployment of the Level 2 baseline 3 ETCS system, this decision being reassessed prior to deployment to ensure that recent changes to the ERTMS development system are taken on board. Likewise, a decision regarding the mobile radio communications system will be taken at a later date, as the launch of this in the European Union is set to mark the discontinuation of the GSM-R system, so the new system specifications are as yet unknown.

The Baltic consortium AS RB rail has been in contact with the European Union Agency for Railways with a view to dealing in a coordinated way with issues relating to deployment of the ERTMS system.

Annex No 2

Technical specification for interoperability relating to the 'control-command and signalling' subsystems of the rail system in the European Union, 'Operation and traffic management'

Table showing the revised implementation plan (2017)

	Name	Description	Competent body	Implementation schedule
1	Train drivers' handbook of procedures. Document setting out operating procedures for employees who are not engine drivers and who work on or use the IP network.	**4.2.1.2.1. Train drivers' handbook of procedures** During the compilation/revision of the train driver handbook of procedures, the job of the rail operator is to draw up an initial or revised document. **4.2.1.2.2. Description of the track and related trackside equipment** 4.2.1.2.2.1. Preparation of the route description; 4.2.1.2.2.2. Modifications to information contained in the route description; **4.2.1.3. Documentation for rail company employees who are not train drivers** The railway undertaking must provide all members of its staff (whether on board or other) engaged in basic safety-related duties involving a direct interface with the infrastructure manager's personnel, equipment or systems, with the rules, procedures, rolling stock and route information it deems appropriate to such tasks. This information shall be applicable in both normal and degraded operating conditions. For staff on-board trains, the structure, format, content and process for preparing and updating such information must be based on the specifications given in Subsection 4.2.1.2 of this TSI.	Railway undertaking (carrier)	Within two years (2019) of receipt of the information from the infrastructure manager (received on 3 August 2017)
2.	Data accessibility ensured by IP for vehicle components	**4.8.2. Rolling stock** The following rolling stock related data items must be available to infrastructure managers. The vehicle keeper is responsible for the correctness of the data: whether the vehicle is made of materials that may pose a hazard in the event of an accident or fire (for example, asbestos), total length of the vehicle, including buffers where applicable.	Railway undertaking (carrier)	Within two years (2019) of receipt of the information from the infrastructure manager (Received on 3 August 2017)