

The ERTMS Newsletter

Summary

Did you know ... CINEA has launched a call for proposals under the Connecting Europe Facility (CEF) for Transport funding instrument.	Page 1
In the spotlight – Interview with Mr. Borghini of Europe’s Rail Joint Undertaking	Page 2
ERTMS CEF Actions	Page 4
Breaking News	Page 6
Contact details	Page 14

Did you know ...

... CINEA has launched a call for proposals under the Connecting Europe Facility (CEF) for Transport funding instrument.



The CEF makes 7 EUR billion available for projects aiming at building, upgrading and improving European transport infrastructure. The Call for proposals 2021 (CEF 2 Transport, actions related to smart and interoperable mobility) supports actions under the CEF-General envelope concerning smart applications for transport (ERTMS, ITS, SESAR, RIS, etc.) and transport interoperability.



Please visit ...

https://cinea.ec.europa.eu/calls-proposals/2021-cef-transport-call-proposals_en#details

and get to know their 2021 CEF Transport call in detail.

In the spotlight:

Interview with Mr. Borghini, Executive Director of Europe's Rail Joint Undertaking



How do you see the railways in 10 years from now?

In 10 years, railways will start to benefit from the operational and technological innovations that have been created in Shift2Rail and future Europe's Rail. Many national and regional programmes are also contributing to achieve the rail system transformation that is required to answer the needs for "ZERO" and a sustainable mobility. Such major transformation can only be realized if the rail sector (i.e. suppliers, operators, infrastructure managers) is working together and involves the scientific community, start-ups, clients and stakeholders.

The Railway infrastructure will be ready to accommodate trains from different operators with a new generation of on-board intelligence. The railway infrastructure will be making use of 5G technologies, satellite localization and other solutions to ensure the performance and safety of the system. It requires a systemic approach, bringing together all the aforementioned actors and creating opportunities for new jobs and skills. It will also require working deeply on addressing the still remaining operational, technological and national barriers that limit the performance of railway today.

How will Europe's Rail contribute to the future railway system and what will be its role in the framework of the future railway standards and regulations?

Europe's Rail will have to develop the new technological and operational solutions to deliver the railway system that meets the expectations of the Sustainable and Smart Mobility Strategy. These expectations are: to double the High Speed Rail services by 2030 and tripling them by 2050 and reaching an 50% increase of rail cargo (freight) by 2030 and doubling by 2050. In order to achieve these ambitious targets, Europe's Rail is structured around three main pillars:

- the System Pillar to deliver the future concept(s) of operations and the underpinning system architecture;
- the Innovation Pillar to research, design, create, test and demonstrate at large scale innovative technological and operational solutions and;
- the Deployment Coordination Group to ensure that future solutions are deployed in a coordinated and consistent way at European level.

To be able to meet the targets, corresponding digital twins will be established with a focus on a European Traffic management Layer, sustainable assets, a seamless rail freight and integrated system solutions.

This is a summary of the major system transformation that Europe's Rail will have to deliver. Via the System Pillar, Europe's Rail ensures that results enter the pipeline of regulatory framework and standards when and as needed.

What are the main differences between the new Europe's Rail JU and S2R? What are the greatest successes of S2R?

The main difference between the new Europe's Rail and S2R is the introduction of a structured system approach. This approach covers the full lifecycle of research and innovation, from the definition of the future concept of operations to coordinated deployment, delivered by the research and innovation activities that are at the core of the Programme. S2R has been paramount to federate the sector around the objective to transform rail and make it the backbone of the future mobility and transport again. Many results such as ATO GOA2, adaptable train communications, the interoperability framework for passenger services (ticketing, planning, journey companion, etc), the European DAC solution, condition based maintenance, new traction solutions are only examples of the key results of S2R. But InnoTrans 2022 will be an occasion to showcase this and much more.

Which are your main lessons learnt throughout these years when working with the different research and development representatives of the main railway manufacturers, Infrastructure Managers and operators?

There are many lessons learnt over the years, as the S2R Programme has a dimension, scope and ambition that makes it the biggest rail research and innovation initiative in Europe. The balanced involvement of the sector in the Programme has been one of the main lessons we learned: where the full value chain has been involved in the research and innovation activities, the Programme has progressed at a faster speed and with clear vision on a possible deployment path. The European DAC Delivery Programme is an example of it. Also, the architecture works or the elements that are the building blocks of the TSI 2022 package (ATO, adaptable communications, localization preparedness, etc.) are key examples of such collaboration and integration. Without a European sector involvement and representativeness there will be no European network. Without a European network, we risk jeopardising the competitiveness of the European industry at global level.

How could the deployment of S2R technologies be incentivised in the rail freight to bring about a modal shift from road to rail?

There is a need to recognize the sustainability of rail freight compared to other modes of transports. In order to accelerate the transformation of rail cargo with the deployment of innovative solutions, we first need to clearly indicate the value and impact of these opportunities. This shift to sustainable transport will only happen if rail offers new services to the clients. I am looking at this from a European rail research and innovation perspective. We are committed to deliver and demonstrate the socio-economic impact of the solutions, to meet the expectations identified in the Sustainable and Smart Mobility Strategy. If we are able to meet the customer needs consistently and continuously, the logistic value chain will have no doubts making rail the first choice.

Where do you see the potential for the most rapid uptake of the game changers?

The game changers entering the TSI 2022 package are the first candidates: ATO GOA2, DAC, new generation of telecoms preparedness, etc. I also believe that all the ambition on ticketing aspects will benefit enormously from the work achieved in the interoperability framework, but it is not a question of rapid uptake, it is a matter of ensuring coordinated and consistent deployment, otherwise we will create new barriers.

Which game changers are going to bring about the biggest benefits for the sector?

The definition of new concepts for operations and system architecture will provide the key opportunity for a major transformation of rail; it will require researching and innovation on how the rail system is operated and how the "intelligence" of the system is distributed. As it happened in all other modes of transport, rail would benefit from more "intelligent" vehicles and reconsider the performance, supervision and safety that can be achieved with such transformation. I am sure that the research and innovation on such areas will bring major performance advances.

ERTMS CEF 1 Actions ¹

Overview of CEF 1 actions related to works, studies or both

Throughout this section, actual ERTMS costs and contributions for the period 2017 – 2024 are presented. For actions that are still ongoing, indicative costs are referred to costs in line with the Grant Agreement in force. The cost figures take into consideration the applicable ceilings for certain ERTMS interventions. Actual costs and contributions for completed actions are based on the final payments. Actual contributions for closed actions usually represent 50% of the eligible costs.

As depicted in Figure 1, the majority of actual ERTMS costs incurred are related to works and amounted to 97% (EUR 5.35 billion). Studies account for 1% (EUR 84.7 million) while 2% (99.6 EUR million) is attributed to projects combining studies and works.

The majority of ERTMS contributions is related to works, reaching 85% (EUR 714.4 million). Studies account for 10% (EUR 42.4 million), and 5% (EUR 81.1 million) is related to a combination of studies and works.

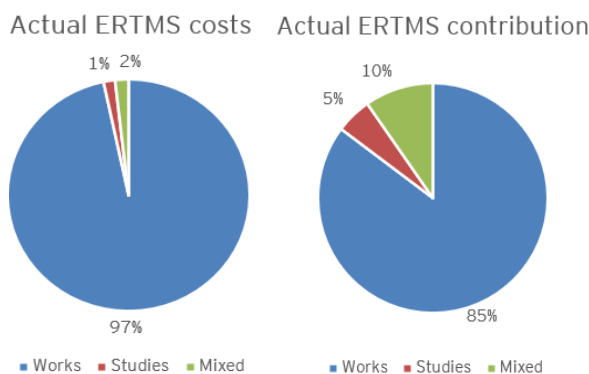


Figure 3 - Percentage distribution of actual ERTMS costs and contributions

Figure 2 highlights the actual contribution share of CEF to the actual cost of the ERTMS deployment. For works, contribution amounted to 13% of total cost, or EUR 714.4 EUR million. Even though this monetary contribution is by far the largest provided within the three action types (works, studies and mixed), it accounts for 13% only because actual ERTMS costs for works amount to EUR 5.35 billion. As far as studies are concerned, EUR 42.4 million were contributed to the total cost of EUR 84.7 million, reaching a 50% contribution. The combination of studies and works received the highest contribution percentage, covering 81% (EUR 81.1 million) of the EUR 99.6 million.

Yearly actual ERTMS contributions percentage from CINEA remained relatively stable for the years 2017 to 2023, ranging from 50% to 63% contribution. Actual monetary ERTMS contribution however, kept increasing throughout the period, peaking at 408 EUR million in 2023.

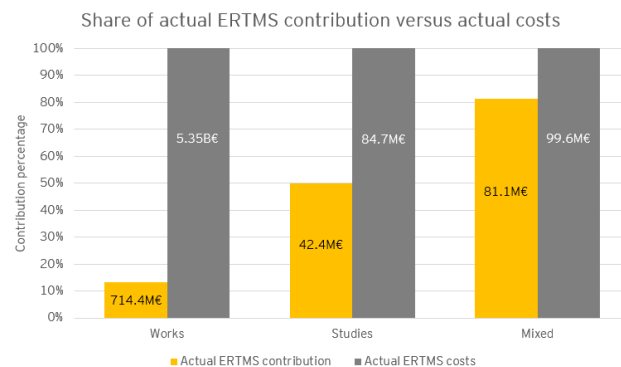


Figure 1 - Share of actual ERTMS contribution and contribution percentage versus actual ERTMS cost

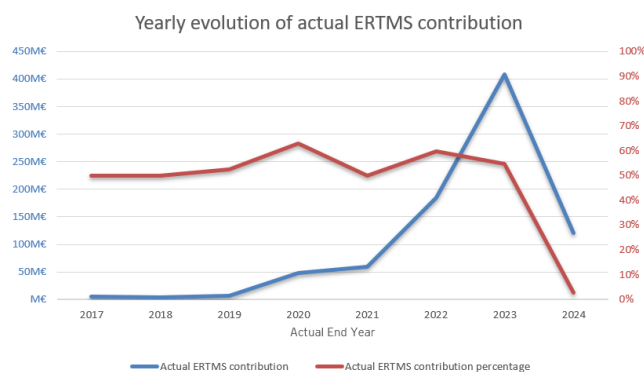


Figure 2 - Evolution of actual ERTMS contribution and costs annually for the period 2017-2024

Geographical spread of ERTMS contributions

The following map provides an overview of the beneficiary countries² with an indication of the type of action (works, studies or a combination of both) and an indication of the respective size of the received CEF funding. As Figure 4 (next page) indicates, the majority of funding throughout the Member States was used for works. CINEA funding was used for studies or mixed action particularly in the cases of Czechia where contributions for mixed actions reached 62.9 EUR million, Hungary at 11.4 EUR million and France which administered 5.1 EUR million for mixed actions and 20.4 EUR million for studies.

¹ The analysis in this article are done by the Deployment Management Team and based on raw data provided by CINEA with regards to CEF 1 Actions. CINEA does not take any responsibility for the correctness of the information provided.

² Note that, for simplification reasons, when data was relevant for multiple countries, the averages were divided per country to allow for a visual representation.

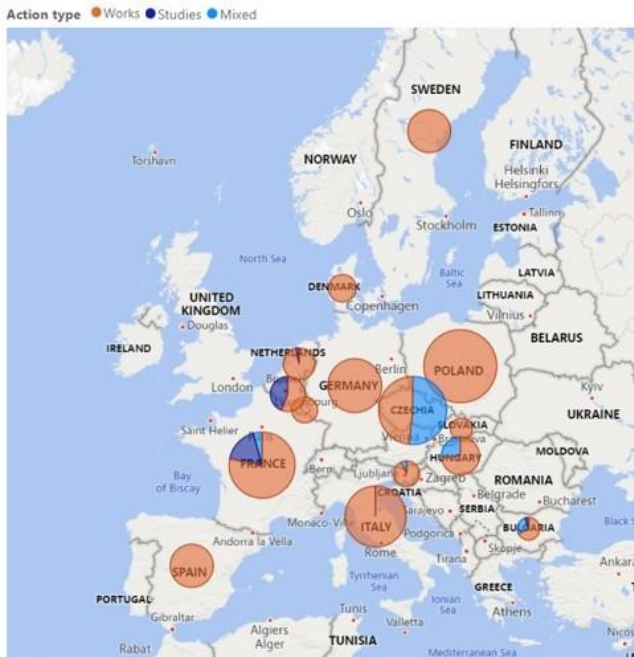


Figure 4 - Actual ERTMS Contribution by location country and action type

The majority of actual ERTMS contributions from CINEA between 2017 and 2024 were to Poland, Italy, France and Germany (see Figure 5). Regarding the works action, the four mentioned countries received 55% of the total actual ERTMS contribution, totalling 391.7 EUR million.

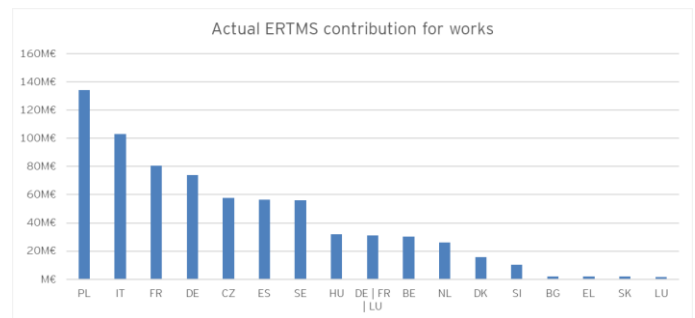


Figure 5 - Actual ERTMS contribution for works in the EU Member States

Actual number of vehicles and km of double-track

As shown in in Figure 6, Italy, Poland and Spain, followed by France, are the Member States, which upgraded the highest number of km of track and collectively received 47% of the total ERTMS contribution (374.2 EUR million). The Member States, which upgraded the most vehicles, namely Spain, Sweden, Belgium, Germany, France and Luxemburg, received 22% of all ERTMS contribution, amounting to 174 EUR million.

Actual ERTMS contribution, number of vehicles and km of double-track upgraded in EU Member states

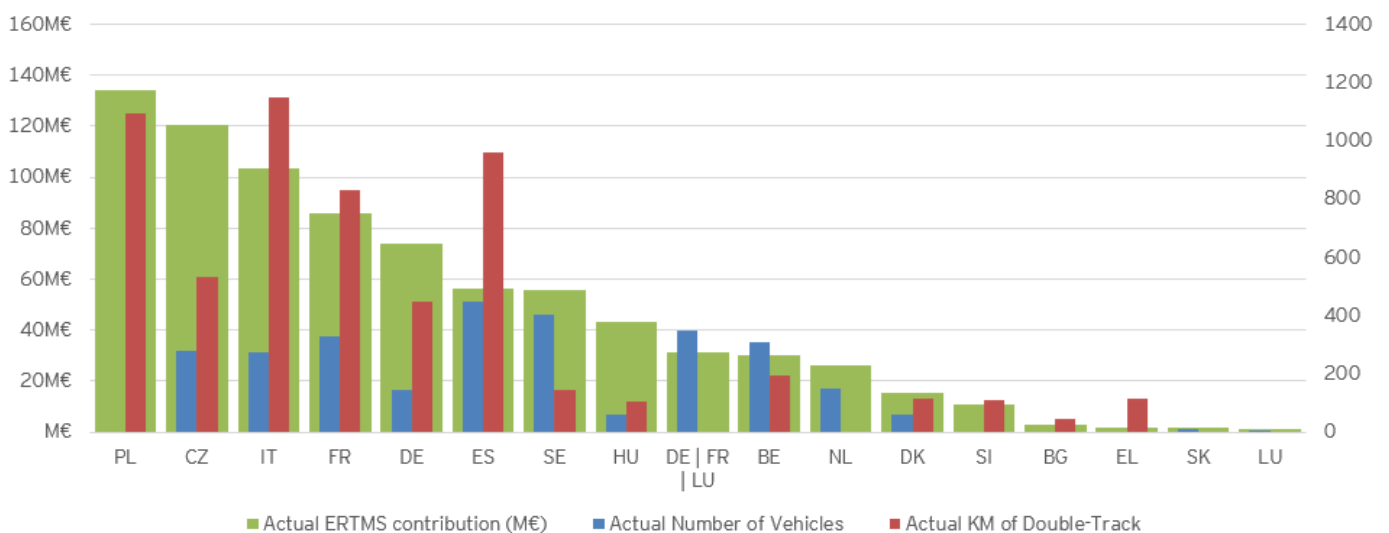


Figure 6 - ERTMS contribution, number of vehicles and km of double-track in EU Member States

Breaking news

Disclaimer

All articles included in this press review were sourced from publicly available websites.

Authorship of all articles remains with the individual publishers, in case of quotations the original authors of the individual news items should be quoted as source.

The Deployment Management Team and the European Commission do not take any responsibility for the correctness of the information provided.

Belgium - NMBS receives 3.9 million euros extra subsidy for ETCS equipment

August 2021

Rail operator NMBS receives a subsidy of around 3.9 million euros for the upgrade of ETCS in more than 150 trains. The grant is provided by the Innovation and Networks Executive Agency (INEA) of the European Commission. At the end of last year, this institution also provided 2.4 million euros for an ETCS upgrade.

The subsidy is intended for the equipment of 155 M7 steering posts with ETCS level 2, baseline 3. In concrete terms, this concerns 65 Bdx (steering posts without traction, ed.) and 90 Bmx (steering posts with traction, ed.). These were ordered under the framework agreement for M7 double-decker trains concluded with the Bombardier/Alstom consortium.

Initially intended for domestic traffic

These control posts will be delivered over the next two years and are intended to be driven in Belgium, but in the long term they can also cross the border to Luxembourg, the Netherlands and Germany. They will be used to replace old control posts that cannot be equipped with a more suitable ETCS system for technical or economic reasons.

The equipment of ETCS at these M7 control posts thus contributes to increased interoperability on the European network and further increases the efficiency and safety of train traffic.

Previous subsidy of 2.4 million euros

At the end of last year, the carrier also received an ETCS subsidy of 2.4 million euros from INEA. This financial support was intended for the upgrade of four different (non-M7-) vehicle types to ETCS level 2, baseline 3. This involved a T18-19 locomotive, a Siemens Desiro trainset and an M6 and I11 carriage that is now ETCS baseline. have 2 on board.

Source: <https://www.treinbestuurder.be/nieuws/read.php?id=9525>

Czechia - On the Prague Uhřetěves - Votice line, there is a new ETCS security for CZK 211 million

September 2021

The railway administration has completed the installation of the ETCS security system on the 50-kilometer section between Prague - Uhřetěves and Votice on the 4th transit corridor. The total investment exceeded 211 million crowns. This was stated by the company's representatives in a press release.

Part of the fourth corridor between Prague's Uhřetěves and Votice underwent gradual modernization between 2005 and 2013. ETCS is a standardized European train protection device that ensures smooth operation in international rail traffic between different national railway systems.

ETCS should be gradually deployed on the entire line from Prague via České Budějovice and Horní Dvořiště on the state border with Austria. However, this is expected only after the completion of construction projects in the sections Votice - Sudoměřice u Tábora and Doupě u Tábora - Soběslav and the last constructions between Ševětín and Nemanice.

The construction work took place in the stations Prague-Uhřetěves, Říčany, Strančice, Senohraby, Čerčany, Benešov and Olbramovice and in all inter-station sections. At the same time, the existing station and line security equipment was modified, which will ensure the transmission of data on the freedom of sections, the condition of roads, crossings, and other information to the headquarters.

The deployment of ETCS is intended to increase safety on domestic lines. There have been several serious accidents involving them in recent years. The last time this year, at the beginning of August, the express from Munich collided with an oncoming regional passenger train near the village of Milavče in Domažlice. According to experts, the Czechia has one of the densest railway networks in Europe and the area coverage by the ETCS system could cost up to 190 billion crowns.

The action was co-financed by the European Union from the Cohesion Fund under the Operational Program Transport 2014-2020. The EU support rate is 85 percent of the eligible costs. National funding is provided by the State Fund for Transport Infrastructure.

Source: <https://www.eulog.cz/clanky/na-trati-praha-uh%c5%99%c3%adn%c4%9bves-votice-je-nov%c4%9b-zabezpe%c4%8den%c3%ad-etcs-za-211-milion%c5%af-k%c4%8d/?mt=51&id=11922&m=a01>

Denmark - Banedanmark tests ERTMS between South Zealand and Falster

August 2021

In Denmark, all train traffic for four consecutive weekends will be shut down for the tests of the signalling system ERTMS between Næstved in Zealand and Nykøbing Falster. After the tests in September and October, it can be used for the upcoming winter.

Rail infrastructure manager Banedanmark is in full swing of rolling out the European signalling system ERTMS on the section between Mogenstrup south of Næstved and Nykøbing Falster. All old signals along the rails will be replaced by the new system. In the long run, this will provide more trains on time, increased safety on the long-distance line and the possibility of more frequent train operations. But before the new system can be put into operation by December, it must be tested for four weekends in September and October.

The roll-out of ERTMS on the line is part of Banedanmark's efforts to replace all the old signals on the long-distance line with a digital signalling system. This is because the old signals are worn and therefore give rise to errors and delays. They will install ERTMS level 2, which means all data communication between the signalling system and the trains takes place via digital GSM-R radio. The communication takes place between a radio block centre and the trains' ETCS computer. GSM-R radio is also used as a train radio, for example for voice communication between driver and remote control employee.

Working at night

Tests of the new signalling system mean that trains cannot run between Næstved and Nykøbing Falster on weekends in weeks 36 to 39. During the four weekends, all train traffic

will be cancelled from 9.30 pm on Friday evening until 4.30 am on Monday morning.

"We have planned our tests of the new signalling system between Mogenstrup and Nykøbing Falster, so that it takes place on weekends and at night. In this way, we want to ensure that it affects traffic and passengers as little as possible," says Thilde Restofte Pedersen, director of the Signal Programme in Banedanmark.

Danish Railways DSB will deploy buses on the route while the new signalling system is being tested. Further tests of the new signaling system on the line will be carried out in November and December, after which it will be ready for operation.

Source:
<https://www.railtech.com/infrastructure/2021/08/30/banedanmark-tests-ertms-between-south-zealand-and-falster/?gdpr=accept>

Finland - The main safety system of the railways will be renewed in the next few years, the current one will become obsolete soon

August 2021

Note: This is not the full article, please visit the above-mentioned link for full article

The new system will improve safety. In addition, the renewal of the access control system will free up more capacity on the tracks.

Finland's railways are to be equipped with a completely new train control system in the next few years, which should, among other things, improve one of the problems facing railways: capacity.

Train protection is a system that monitors, among other things, the position of trains, their speed and the status of signals, i.e. traffic lights. If necessary, it automatically intervenes in the train's progress.

The so-called Digirata project is a joint project between, among others, the traffic management company Fintraffic, VR, the Finnish Transport and Communications Agency Traficom, the Finnish Transport Agency and the Ministry of Transport, which will make train control completely digital.

The current nationwide system is the legacy of two unfortunate accidents in the 1990s, the Jyväskylä and Jokela train accidents, in which a total of 14 people died. Both were caused by the train entering the switch at too high a speed, causing it to derail.

The accidents spurred the construction of a new access control system for the entire national rail network, but even that system is now becoming obsolete. Access to upgrades and spare parts will deteriorate in the coming years.

"Those accidents could have been prevented with better access control. They were caused by drivers failing to observe the speed limit. The train would have automatically slowed down at the point where it was supposed to," says Jari Pylvänäinen, Project Manager at Fintraffic.

"The current system could go on for another twenty years or so at most, but it can no longer be improved."

The NEW system is called ETCS (European Train Control System) and a similar one is being built in other EU countries. In Finland, it will be tested first on the Kouvola-

Kotka-Hamina line and later on the quieter passenger lines of the main line. It should be nationwide and in continuous use by 2040.

Its price tag for the rail network between 2021 and 2041 is around €1.37 billion. On top of that, there is a cost to fleet owners of around €260 million.

While the current system provides a point-by-point and fragmented view of train movements, the new system will provide full real-time information on train movements. This will further increase safety.

According to Pylvänäinen, the system will eventually use 5G technology, the fifth generation of data communications, which will enable much greater data transmission capacity. Finland is the first in Europe to prepare for this transition," says Pylvänäinen.

"Access control ensures security. Without it, we would rely solely on human factors and sensory perception," he says.

But the project's biggest goal is to safeguard and increase the existing capacity of the rail network. Without reform, existing capacity would have to be further reduced.

"There is the possibility of increasing capacity on certain lines by thirty percent, but on each line a little more. When more capacity is available, the train service can also be increased. It will also speed up the recovery from various traffic disruptions."

Source: <http://www.hs.fi/kotimaa/art-2000008217610.html>

France - Connecting Europe Express, a train to promote the advantages of rail

September 2021

Note: This is not the full article, please visit the above-mentioned link for full article

The Connecting Europe Express train, whose mission is to promote the development of Europe's railways, will travel across the continent from 2 September to 7 October. This European Commission initiative is being carried out as part of the European Year of Rail, in partnership with the major players in the rail sector. The challenge for SNCF Réseau, which is co-financing the French stages, is to highlight its expertise and the flagship projects that are shaping the European railways of tomorrow.

Between its departure from Lisbon on 2 September and its arrival in Paris Gare de l'Est on 7 October, the Connecting Europe Express will stop in 100 cities and 26 countries. During its stops, the train will convey the Member States' desire to develop sustainable mobility and to promote the economic and physical unity of the European Community. Each stage of this 36-day trans-European journey will bring together institutional figures, journalists, NGOs, associations and European citizens.

Raising awareness of major European rail projects

With 0.5% of greenhouse gas emissions, rail is the sustainable solution for connecting European countries," explains Christine Pelletier of SNCF Réseau's Europe Department. But it currently accounts for only 7% of passenger transport and 11% of freight transport in Europe. As a result, the European Commission, as part of its Green Deal policy, is putting in place colossal funding to boost the

attractiveness of rail, by developing digitalisation, interoperability and infrastructure performance. These projects will develop rail transport along the continent's key routes.

A theme and meetings at each stage

The aim of the Connecting Europe Express is to celebrate European cooperation through various events, exhibitions and conferences, highlighting major rail development projects.

France is the country with the most stops:

- **On 4 September at Hendaye and Bordeaux Saint-Jean stations:** highlighting the 9,000 km of small railway lines that are essential for serving the regions, celebrating the Franco-Spanish friendship, and holding a citizen dialogue with high school and university students.
- **5 September at Chambéry Challes les Eaux station:** in the presence of Luc Lallemand, focus on the Lyon-Turin tunnel with a visit to the digging site (see box).
- **6 October at Strasbourg station:** focus on the European legislative package "Fit for 55", which aims to reduce the European Union's net emissions by 55% by 2030. Ceremony at Strasbourg station on the theme of youth commitment to sustainable mobility, in the presence of MEPs and young citizens.
- **7 October at the Gare de l'Est in Paris:** closing ceremony in the presence of senior authorities from the European Commission, the French government and SNCF.

Making the most of SNCF Réseau's expertise

For SNCF Réseau, the Connecting Europe Express is a unique opportunity to showcase its know-how, which is based on several areas of expertise in this European context:

Modernisation of signalling systems: SNCF Réseau has received a €117 million grant under the MIE programme (Mechanism for Interconnection in Europe) to finance the deployment of the ERTMS (European Rail Traffic Management System) on the Paris-Lyon high-speed line. In the long term, this new standard will make it possible to harmonise rail signalling on a European scale, which will improve the regularity of traffic and increase traffic capacity.

Traffic planning: Every year, SNCF Réseau's Capacity Allocation Department plans traffic not only on the national rail network, but also on the trans-European network. This is a complex process that the company intends to make more fluid by digitising most of the stages.

Source: <https://www.sncf-reseau.com/fr/entreprise/newsroom/actualite/connecting-europe-express-train-promouvoir-atouts-rail>

Germany - Autonomous train presented for the first time

October 2021

Deutsche Bahn and Siemens have developed the world's first train that runs by itself in rail traffic. Richard Lutz, CEO of DB, and Roland Busch, CEO of Siemens AG, presented the vehicle of the Digital S-Bahn Hamburg project together with Peter Tschentscher (SPD), First Mayor of the Free and Hanseatic City of Hamburg, during the premiere journey. The train is controlled by digital technology and runs automatically.

The train drivers remain on board to monitor the journey with passengers. Shunting - for example, train turnaround - is done without personnel. The project partners DB, Siemens Mobility and the City of Hamburg have invested a total of 60 million euros in the digital S-Bahn Hamburg, which is part of DB's Digital Rail Germany programme.

Richard Lutz, Chairman of the Management Board of DB: "Today we are experiencing a real change of era: the railway has arrived in the digital future and Digital Rail Germany has become a reality. With automatic rail operation, we can offer our passengers a significantly larger, more reliable and therefore better service - without having to build a new kilometre of track. Our goal: to make the railway attractive for more and more people. Only in this way can the mobility turnaround succeed."

The premiere journey of the digital S-Bahn took place at the start of the ITS (Intelligent Transport Systems) World Congress in Hamburg. During the congress, four digital S-Bahns will run automatically on the 23-kilometre section of S-Bahn line 21 between the Berliner Tor and Bergedorf/Aumühle stations. "We are making rail transport more intelligent. Trains automatically run the perfect timetable, accurate to the second and energy-optimised," says Roland Busch, CEO of Siemens AG.

Busch: "In this way, we are supporting our partner Deutsche Bahn in its goal of making train travel more attractive and protecting the climate. Because with our technology, our customers can transport up to thirty percent more passengers, significantly improve punctuality and save more than thirty percent energy. The digital S-Bahn Hamburg is a world first. The new technology is already approved and because it has open interfaces, all operators worldwide can use it immediately for all train types."

The technical basis for digital train operation is the future European standard ATO (Automatic Train Operation) combined with the European Train Control System (ETCS). The trains receive the control signals via radio. From December onwards, the four digital S-Bahn trains will be in scheduled service in Hamburg. The planning for equipping the S-Bahn Hamburg by the end of the decade is already underway, investments in trains and infrastructure have started. In the future, the technology will also be used nationwide in regional and long-distance transport.

Source: <http://www.zughalt.de/2021/10/autonomer-zug-erstmals-vorgestellt/>

Greece - In anticipation of rail contracts worth 125 million euros

October 2021

Two important contracts related to railway projects with a total initial value of around €125 million are expected to be approved by the Parliament in the near future. These are the electrification of the Larissa-Volos section (€67 million), for which Intrakat has been awarded the contract, and the Thessaloniki-Eidomeni rail project (with VAT at €56.7 million), which has been "won" by the ABAX-Alstom consortium.

Relevant information from the railway sector notes that these two projects, as a matter of fact, may soon "leave" the Ministry of Infrastructure and Transport to the Parliament. With the same sources not ruling out this happening in October, so that the signatures can then follow.

It is recalled that the first contract concerns the railway project entitled: "Construction of electricity, signalling - remote control, telecommunications and ETCS L1 system on the existing single railway line Larissa - Volos by upgrading the railway line in the SS section. Quarry - Industrial area - Volos ". The Board of Directors of ERGOSE has ratified the award of the railway project of the Larissa-Volos line, costing approximately 67 million euros, to the construction company that was announced a bidder months ago, with an average imputed discount of 37.19% and a total offer of EUR 42.4 million. The project of electrification, signalling and upgrading with ETCS will dramatically upgrade the railway line that connects the two big cities of Thessaly and according to the specifications a trolley type electric installation will be installed, for speeds up to 120 km / h. The route between Volos and Larissa, together with the intermediate stops, will be reduced to 40 minutes and at the same time the suburban connection between Volos and Thessaloniki will operate with a total journey time of just 1 hour and 40 minutes.

The other contract concerns the project "Installation of a Modern Signaling System as well as ETCS - Level 1 in the section Thessaloniki - Eidomeni and Replacement of 37 track changes for the needs of signaling", ie the installation of signaling on the railway line Thessaloniki-Eidomeni. The AVAX-Alstom consortium has been declared a contractor with an average imputed discount of 10.50%, and with a total offer of 40,973,034 euros. It is considered an important project because with its completion it paves the way for the resumption of international passenger routes with the Western Balkans and Central Europe. The total length of the axis of the existing single railway line Thessaloniki (TX1) - Eidomeni (via the new variant of Polykastro - Eidomeni), in which the signaling system, remote control and ETCS will be installed, is about 70.5 km.

Source: <https://www.newsnowgr.com/article/1396343/sto-perimene-gia-ti-vouli-sidirodromikes-symvaseis-125-ekat-evro.html>

Hungary - The Kelenföld-Százhalombatta railway line was renewed

October 2021

The works have been completed and the new railway line between Kelenföld and Százhalombatta has been officially opened. Thanks to the HUF 53.8 billion development, trains can now run at 120 km/h on the 20.5 km long section of the Pest County line.

The overhead line system has been rebuilt along its entire length, and the energy supply for rail transport is provided by modern transformers installed at the traction substation in Érd, which was subcontracted to Siemens Mobility Kft.

A total of eight stations and stops were rebuilt as part of the project - Budafok, Háros, Budatétény, Barosstelep, Nagytétény-Diósd, Érdliget, Érd felső, Érd - and modern 55 cm high platforms were built to make them accessible. In addition, platform walkways, ramps, lifts and new platform roofs with modern passenger information systems and lighting were built. The station buildings were renovated or rebuilt depending on their condition. The building at Budafok station, which is protected by the capital, has also been rebuilt, now at a distance from the modified track geometry.

The level and grade crossings affected by the line section have been rebuilt. At Vágóhíd Street, the existing railway bridge was demolished and replaced by a new bridge and the street was widened. The at-grade crossing on Nagytétényi Street was removed and replaced by the widening of the grade crossing on Növény Street. It has been transformed into a spacious junction for cyclists and pedestrians, with two new roundabouts, providing an ideal traffic route for all road users. The railway bridge over the érdligeti was also rebuilt, with the central pillars removed, making it more convenient for motorists.

Bicycle storage facilities have been installed around the stations and stops and a P+R car park with a total of 135 spaces has been built. (Budafok station: 35+1 P+R (extension of existing parking), Háros station: 30+2 P+R, 22 B+R, Nagytétény-Diósd station: 16+3 P+R, Érd station: 27+1 P+R 34 B+R (Csalogány street) and 46+1 P+R and 44 B+R, Érd-felső station 19+1 P+R).

Noise and vibration barriers have also been built in 14 km of noise and vibration protection areas. The reception buildings of the line section (Háros, Nagytétény-Diósd, Érd) have been completely renewed.

Modern, high-speed electronic equipment has been installed on the section to control train traffic. On line 40a, a central traffic control centre (CCC) has been installed, allowing full automation and monitoring of train traffic, as well as control and regulation from a single centre. Information and data essential for the travelling public are provided by modern audio and visual passenger information systems at stations and stops. Passenger comfort is enhanced by info-communication systems (INFO poles) and their safety is guaranteed by advanced camera systems.

The entire overhead contact line system has been rebuilt and the power supply for rail transport is provided by the

modern transformers of the traction substation in Érd, which was subcontracted to Siemens Mobility Ltd.

The ETCS-2 train control system is expected to be operational by the end of 2022.

The construction works for the modernisation of the railway line were carried out by the KITÉRŐ 2016 CONSORTIUM (V-Híd Zrt., A-Híd Zrt.) for a net value of HUF 53.8 billion. The investment was carried out with the support of the CEF (European Network Financing Instrument), on behalf of the Ministry of Innovation and Technology, and with the support of the NIF National Infrastructure Development Ltd.

The works for the modernisation of the electronic protection system and the ETCS L2 train control system

and the érd traction transformer substation is being carried out by the Siemens KLBA Consortium (Siemens Mobility Kft., Siemens Mobility GmbH) for a net value of HUF 16.62 billion. The investment is being carried out with the support of the CEF (European Network Financing Instrument), using EU and national funds, on behalf of the Ministry of Innovation and Technology, and is being implemented by NIF Nemzeti Infrastruktúra Fejlesztő Zrt.

Source: <https://www.muszaki-magazin.hu/2021/10/22/kelenfold-szazhalombatta-vasut/>

Italy - Railways 4.0, Sirti invests 14 million in signalling systems

August 2021

An investment of 14 million euros over three years to enhance railway signalling solutions. Sirti, a network infrastructure design and management company, has chosen to focus on digitalisation to improve rail traffic safety.

Already active on high-speed sections for telecommunications systems, Sirti is developing an evolution of its signalling system that will be applicable to ERTMS-ETCS (European rail traffic management system/European train control system). It will be capable of evolving towards the latest and most innovative Ngtc (New Generation Train Control) systems. The system, which is still under development, is based on the Cots platform and will have the computational capacity to meet future needs.

"Looking to the future, we believe that the next step is to be able to imagine, design and implement the integration of the main technologies currently present in the railway world - anticipates Roberto Chierigati, director of Sirti's Transportation Business Unit - so as to make infrastructure management safer and more efficient for the operator and meet the increasingly sophisticated needs of the end user, who as a passenger must be able to benefit from all technological services".

Since 2005 Sirti has been working in the field of signalling, developing an innovative product such as Acc (Apparato computerizzato centralizzato). In Europe, it has participated in and won projects related to technological innovation within the H2020/Shift2Rail programme and is present in the Expert Group - Competitiveness of the rail supply industry. European railway operators are investing heavily in new-generation systems that focus on digitalisation to make the

infrastructure fast, dynamic, interoperable and capable of increasing train density on routes and at junctions.

Investment in infrastructure has been boosted by the increase in the number of ERTMS-ETCS level 2 systems on the entire rail network, and in future level 3 systems, which until now have been confined to the high-speed network. They will make it possible to speed up lines and manage train movements much more effectively than the electromechanical systems still in place today.

Source: <https://www.corrierecomunicazioni.it/digital-economy/ferrovie-4-0-sirti-investe-14-milioni-nei-sistemi-di-segnalamento/>

Netherlands - Alstom to upgrade ERTMS Level 2 on Dutch track sections

September 2021

ProRail commissioned Alstom to upgrade two sections of track, so that train drivers can gain experience with ERTMS Level 2, Baseline 3. The sections in question are the Hanzelijn and the railway line Amsterdam-Utrecht.

The sections of track will be upgraded by the end of 2023, after which railway operator NS will start driving trains to gain experience with the new system.

Getting used to ERTMS driving

In the national roll-out of the European train control system, gaining experience with driving with ERTMS is an important step. The intention is for the first seven sections to be ready in 2030. By then, enough train drivers must have gained experience to be able to drive with it.

Some sections of the Dutch railway network are already equipped with ERTMS, such as the Betuwe Route, the Hanzelijn and HSL-South. But these sections do not yet have the version chosen by the Netherlands for the national roll-out.

Adapting to baseline 3

For this reason, Alstom will upgrade the ERTMS version of the Hanzelijn and the Amsterdam branch line, explains project manager Philippe Frequin, who prepared the order to Alstom. "The ERTMS systems currently in place are still an old level 2 version, namely baseline 2, while the current level 2 standard is now baseline 3. That will also be installed on all new ERTMS sections. So drivers will have to learn to drive with that version. What we are going to do now is adapt the baseline 2 infrastructure so that it resembles baseline 3 as much as possible for train drivers."

Source: <https://www.railtech.com/infrastructure/2021/09/08/alstom-to-install-ertms-level-2-on-dutch-track-sections/>

Poland - 16 billion euros set aside for rail transport in Poland

August 2021

Poland will be the biggest beneficiary of the upcoming EU financial perspective for 2021–2027. Around 170 billion euros is expected to be dedicated to the country. In total, 16 billion euros has been set aside for the development of rail transport. This is concluded in the Polish Railway Market 2020-2021 report, prepared by Jana Pieriegud and

commissioned by the Economic and Commercial Department of the Dutch Embassy in Poland.

The report presents the possibilities for railway industry investors, which according to Pieriegud are numerous. Although the EU funds are still to be approved by the European Commission, the coming financial period will see a significant increase in EU funds for the Polish railway market. Pieriegud will present the report at the RailFreight Summit in Lodz, which starts tomorrow. The report will be made available by the Dutch Embassy for visitors to the summit.

“The plans for the next few years to expand and modernise the rail infrastructure are very ambitious”, says Sanne Kaasjager, Economic Counsellor at the Dutch Embassy. At the summit, he hopes to help connect foreign companies to Polish rail freight companies and make them aware of the huge opportunities. For the Dutch market participants a special arrangement has been made. “The Ambassador of the Netherlands will be there in person to meet up with Dutch companies and to underline the importance the Dutch government attaches to the rail freight sector.”

Which funds?

The EU budget consists of the typical Multi-annual Financial Framework (MFF) and the new EU Recovery Funds, of which Poland is the third-largest beneficiary. The most important element of this instrument is the Recovery and Resilience Facility (RRF), intended to provide an investment boost in the first years of the financial perspective to support economic recovery after the COVID-19 epidemic. The funds from the RRF will be used towards the cost of energy transition, low-carbon transport, and digitalisation.

The railway projects will be co-funded by the RRF, the National Recovery Plan (KPO) and the Cohesion Fund (CF), explains the report. “This includes the European Funds for Infrastructure, Climate and Environment Programme (EFICE) and Regional Operational Programmes (ROPs). Railway infrastructure upgrading along the TEN-T Core Network Corridors and Railway Freight Corridors (RFC5 Baltic – Adriatic Corridor; RFC8 North Sea – Baltic Corridor, and RFC11 Amber Corridor) will be also supported by the Connecting Europe Facility (CEF 2.0).”

High demand

Poland’s economic forecasts are favourable, the report explains. Regional and local authorities have indicated a significant demand for rail investments. Masovia and the Lesser Poland Voivodeships declare the highest demand for passenger rolling stock.

Regional authorities and passenger railway operators are particularly interested in hybrid and hydrogen-powered multiple units, and double-decker units for push-pull trains. Freight operators intend to purchase electric locomotives equipped with on-board European Train Control System (ETCS), and intermodal platforms.

The entire envisaged investment in railway infrastructure totals about 14.3 billion euros. This is 1.1 billion euros in passenger rolling stock and 550 million euros in freight locomotives and wagons.

Investments by freight operators

A survey carried out by the Polish Office of Rail Transport (UTK) in 2020 showed that 80 per cent of freight operators declared that they would purchase locomotives in the following years. Another 60 per cent would purchase freight cars. A third of them are going to invest in IT systems, and a quarter of them in transshipment terminals. There is significantly less interest in train control-command and signalling systems, including ERTMS.

Despite the need to renew the locomotive fleet, freight operators are only planning limited purchases of new units. They most often decide to lease it or modernise the existing rolling stock. One of the reasons for this approach is the low utilisation efficiency of rolling stock due to the continuous railway lines upgrading, and a large number of speed limits on the network and detours.

Delay ERTMS

The delay in the implementation of the ERTMS trackside infrastructure programme causes railway operators to postpone their investments in new TSI-compliant rolling stock. At the end of 2020, 276 locomotives (of which 30 passenger electric, 155 freight electric and 91 freight diesel) and 317 multiple units equipped with on-board ETCS systems were in operation. In the next five years, freight operators plan to purchase about 100 new locomotives equipped with the ETCS, while passenger operators planned for as many as 390 units.

In the case of freight wagons, the greatest demand is expected for open wagons and intermodal platforms. In order to support the development of sustainable transport, about 185 million euros will be secured within the National Recovery Plan for intermodal transport development, including the purchase of rolling stock and construction of transshipment terminals. The total investments of freight operators in new rolling stock until 2027 is estimated at approx. PLN 2.5 billion (ca. EUR 0.55 billion).

Source: <https://www.railfreight.com/railfreight/2021/08/31/16-billion-euros-set-aside-for-rail-transport-in-poland/?gdpr=accept>

Portugal - Ineco will implement ERTMS at the Portuguese Elvas station

September 2021

Thales Portugal has contracted with Ineco to implement the ERTMS level 2 system in a pilot project at the Elvas station.

Ineco will update existing operational rules to the new version of the European specification, propose new rules based on new functionalities, and define and prepare a generic ERTMS test specification valid for the entire Portuguese network.

In addition, it will carry out the ERTMS level 2 functionality tests, prior to putting the system into service at the Elvas pilot station both in the laboratory and on the track, preparing the test scenarios, executing them and controlling possible incidents.

Source: <https://vialibre-ffe.com/noticias.asp?not=33243&cs=empr>

Spain - FCC and Siemens win a construction contract on railway lines in Rodalies (Barcelona) for 75 million

October 2021

The consortium formed by FCC Industrial and Siemens has been awarded the contract for the work and maintenance of signalling, fixed telecommunications and ERTMS level 2 of the Rodalies de Barcelona, in the Manresa-Barcelona Sants-Sant Vicenç de Calders section, for an amount of almost 75 million euros, the company reported.

Specifically, the scope of the contract, which has an execution and maintenance period of six years, consists of the development of the interlocking facilities, the train protection system, remote control and their integration with the command post, as well as the power supply systems.

FCC highlighted that the objective is to achieve the complete renovation of the fixed telecommunications and signalling facilities, in order to improve the operating benefits of the Manresa-Barcelona Sans-Sant Vicen de Calders railway line, thus achieving a considerable increase in capacity. Once the renovation of the facilities is completed, the corrective and preventive maintenance will be carried out.

The group has an experience of more than 25 years in the development and maintenance of railway lines. All electrification activities are included, including traction substations and overhead contact lines, power supply to technical buildings, together with signalling and systems associated with the railway sector.

Source: <https://www.capitalmadrid.info/2020/9/21/57593/fcc-y-siemens-ganan-un-contrato-de-obra-en-lin-eas-ferroviarias-de-rodalies-barcelona-por-75-millones.html>

Sweden - The introduction of the Digital Automatic Coupler (DAC) for freight traffic by rail is according to schedule

October 2021

Introduction of Digital Automatic Couplers (DAC) for rail freight on schedule

The railway industry in Western Europe has now taken the first step in selecting a standard for the Digital Automatic Coupler (DAC) for freight wagons.

On 21 September it became official that the European DAC Delivery Programme, EDDP, has chosen the Scharfenberg type of coupler as standard or as it is written in the original press release:

"EDDP Programme Board confirmed the consensus reached at working level on a latch type design (Scharfenberg) as the European DAC coupler head type".

This means that the mechanical standard for automatic couplers is established. It now remains to finalise the definition of electrical and digital couplers and life cycle costs, a task which is now being pursued with unabated vigour.

The EU project SHIFT2RAIL, which is driving this work, has made the following calculations of the benefits to freight transport of introducing DAC:

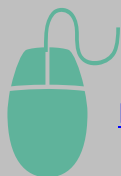
- Reduction of transport time: 40-50%.
- Increased locomotive utilisation: 40-50%.
- Increased wagon utilisation: 30-35%.
- Increased use of terminals and yards: 50%.

In addition to these efficiency improvements, DAC also enables freight trains to be integrity-proofed, which in turn enables the implementation of "moving blocks" in ERTMS, which would increase track availability by 25-40% according to the Swedish Transport Agency's calculations.

A successful implementation would significantly increase the capacity of the entire rail system and thus contribute to the shift of freight from road to rail, a step that is necessary to meet the 2030 and 2045 climate targets. As the timetable stands today, it is expected to start in 2023-2024 and be completed in 2030, involving a total of around 480,000 wagons and 17,000 locomotives in Europe. As we have previously written on the subject, we will continue to keep you updated on the progress and from the Association's side we will continue to do everything we can to strengthen the competitiveness of the railways with DAC and other technological solutions!

Source: <https://www.swedtrain.org/2021/10/18/inforande-av-digitala-automatkoppel-dac-for-godstrafik-pa-jarnvag-haller-tidtabellen/>

Contact details



For further information on ERTMS,
please visit our website:

[https://ec.europa.eu/transport/modes/rail/
ertms_en](https://ec.europa.eu/transport/modes/rail/ertms_en)



Get in contact with the
ERTMS team

Via the DG Move mailbox

[MOVE-ERTMS-
DEPLOYMENT@ec.europa.eu.](mailto:MOVE-ERTMS-DEPLOYMENT@ec.europa.eu)

Follow the Directorate-General for Mobility
and Transport on twitter via [@Transport_eu](https://twitter.com/Transport_eu).



Follow DG MOVE
on **twitter**

Published by: the Directorate General for Mobility and Transport on behalf of the European Commission.

European Commission – BE-1049 Brussels
http://ec.europa.eu/transport/index_en.htm

© European Union, 2021

Reproduction is authorised provided the source is acknowledged.

Legal notice: The contents of this newsletter are prepared by officials of the Mobility and Transport DG and represent their personal views on the subject matters.

These views have not been adopted or in any way approved by the European Commission and should not be relied upon as a statement of the Commission or the Mobility and Transport DG.