

The ERTMS Newsletter

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## Did you know ...

### **InnoTrans 2022 – Taking the temperature on the railway industry**

**From the 20<sup>th</sup> to the 23<sup>rd</sup> of September Messe Berlin provided the grounds for the largest trade fair for the railway sector – InnoTrans 2022.**

Roughly 2800 exhibitors from 56 countries and 140.000 visitors from 131 countries were gathered in Berlin to display their products and vision for the railways of the future. The exhibitions spanned over the entire Messe Berlin area, showcasing everything related to the rail industry from full trainsets to Digital Automatic Couplers. Naturally, ERTMS and the future of rail digitalisation were in the spotlight as the railway industry seeks to increase efficiency and further improve its services whether it being moving passengers or goods. In relation to InnoTrans 2022, the SIGNAL team was fortunate to obtain the perspective of Michael Peter, CEO of Siemens Mobility, on the future of ERTMS and rail digitalization.

### **How do you see the future of ERTMS deployment and rail digitalization?**

ERTMS is the key enabler for the future of rail transport in Europe and provides the building blocks needed for rail digitalization. Deployment is advancing, with some countries ahead of others, however there is still a lot of work needed.

At the moment, only 14% of the core network is equipped with European Train Control System (ETCS) infrastructure. However, until ETCS is not 100% deployed, we cannot benefit from its numerous advantages. In contrast, trains must have several onboard systems installed what increases costs and makes cross-border travel even more complex. We need to prioritize deployment and achieve 100% ETCS on the wayside across the continent to unlock the huge potential of cross-border rail travel. Network-wide roll-outs such as in Norway can serve as an example for other countries.



### **How can the EU institutions foster more deployment?**

We need to make the authorization process easier without impacting safety. We are currently seeing a worrying trend that authorization processes are in fact becoming more complex and taking even longer. This also applies to Technical Standards for Interoperability (TSI). These should be kept lean and pinpoint areas impacting interoperability & safety.

Investment and funding are also crucial to unlocking the potential of rail travel, and the EU funding schemes like the Connecting Europe Facility or the EU Recovery and Resilience Facility can certainly support in accelerating change.



*Michael Peter, CEO Siemens Mobility*

### **How do you see any future technological developments and their effects on the European railways?**

If we are to truly compete with automobiles or airlines and reach our climate goals, the digitalization of European railways can help us by increasing capacity, improving punctuality, and building customer trust and loyalty as we transform the user experience.

For example, Automatic Train Operation (ATO) combined with digital interlocking can enable up to 30% more trains on the same line, improve punctuality by 15% and reduce energy consumption by 30%.

It is a very exciting time for rail with countless other examples of innovation in this area, such as the ability to move from reactive to predictive maintenance of trains and infrastructure, so a problem is reported before the assets fail. And from a passenger perspective, we can make life easier and more comfortable with live customer information and more flexibility with their bookings.

### **What are the hurdles towards further ERTMS deployment and rail digitalization?**

We need to find the right balance between innovation and regulations or specifications. And as well as breaking down boundaries for cross-border rail travel, we, as the industry, need to remove our own barriers and work together to accelerate ERTMS deployment.

# In the spotlight: Interview with Mr. Matthias Ruete, ERTMS Coordinator

Matthias Ruete is one of the most experienced persons and voices in European transport policy. After 3 decades as a civil servant in the European Commission, of which ten years were as Director and Director-General at DG MOVE, Mr. Ruete is now the European Coordinator for ERTMS. In his role, he facilitates the deployment of ERTMS. On a video connection from Prague ahead of the International Rail Forum and Conference, the SIGNAL team sat down with Mr. Ruete to hear his thoughts on the past, present and future of rail digitalisation and ERTMS.



## What are the main lessons learned from the ERTMS deployment until present?

I had some encounters with ERTMS when I was working in DG Transport as Director in the 90's and then as Director General of DG MOVE in the beginning of the 21st century. However, I've only been confronted with all the difficulties when I became coordinator in 2019. The ERTMS was a great idea. At the beginning everyone was saying that this was a sort of air traffic management system for rail, but when I look at the details and where it has evolved, it has become to a certain extent only partial realization of the original idea and the deployment was too slow.

We had a lot of different drivers depending on the different Member States (MS), safety being one of the big elements followed by capacity that also became a big issue in the last few years, cost savings and now energy efficiency. And the overall modernization and digitalization has also come in. Thus, we have different drivers for ERTMS deployment.

One of the biggest problems was that we based it on the notion of interoperability, but never really thought about the existing national safety systems. Because of that, it was

laid on top of the national systems, which created a lot of complications. We are now moving towards the realization that it would be better to have it as the main single European system, rather than an overlaid system.

We were also concentrating very much on the TEN-T network; but, if you look at ERTMS in general terms, it really makes sense to have a comprehensive network-wide deployment, instead of a corridor wide deployment.

These are some of the elements that are lessons learned on the deployment up to now. We should move to a single system, and deal with the overall issue of the cost, which is why we are moving towards interfaces, modularity and operational harmonisation. In a nutshell, we need a timeline, a stable/predictable budget and standardization. If we have that, we will get there.

## Where do you see the main obstacles and opportunities?

Obstacles: We've identified that: first of all, and that applies not only to ERTMS, we have a tendency, because of the existence of national railway systems, to have what I call *ERTMS dialects*. Meaning that it is sometimes implemented on a high level and looks the same but, the different ERTMS dialects don't necessarily understand one another. Here standardization is key.

Second, we have realized that you can't just concentrate on trackside, you have to concentrate on the synchronized deployment: trackside and onboard. We're doing it now, but it took quite some time. You also have different economic interests depending on if it's trackside or onboard, which is another element. We need to have a synchronized deployment.

Third, we often had a stop and go policy. "We do a little bit of ETCS because we have a little bit of budget left". It needs to be a longer-term commitment, ideally voted as a multi-annual budget by national parliaments and obviously at EU-level because it will allow the industry to adapt better. One of the biggest problems that we have now is the lack of staff and expertise. This can be dealt with by committing to 5–10-year horizon, so it makes sense to build up capacity.

ERTMS is also one of the largest European industrial projects that we are talking about. If we look at the overall cost of ERTMS deployment, we tried to estimate them in my first work plan, we are beyond EUR 100 billion in terms of trackside and onboard; obviously this also includes the digitalization of interlockings, which is one of the big game changers.

Opportunities: We have to certain extent the wind in our sails because rail is considered the mode of transport to combat climate change. We have almost everywhere in the EU a huge need for refurbishment and modernization of the

network. We are also moving towards full digitalization of rail. All this plays in favor of the ERTMS deployment. We have more difficult elements, such as the war of aggression of Russia in Ukraine, which will bind a lot of funds. We were also scared of the pandemic setting us back but looking at the numbers, it hasn't done so. The recovery and resilience facility has spurred additional money, which is being invested in ERTMS.

### How important is the deployment in Europe for the overall success of ERTMS globally?

ERTMS is one of the largest EU industrial projects. In terms of signaling and safety, we are world leaders at the moment. If you're looking at the global scene, the overall share of European industry it is still very large. However, we are racing against time because there are other actors in the world who are developing and implementing signaling systems. Their systems are not yet as performing as ours is. However, this might also change. Other suppliers outside Europe are even copying our system. We thus really need to make sure that we remain frontrunners and can demonstrate a successful, large-scale deployment in Europe. This will be a showcase that we could present to other countries in the world.

Most of the ERTMS deployment in the world are greenfield projects. Such projects are much easier to handle. In reality, one of our strengths is that we can show that we can actually manage the transition from the existing national (class B) systems to a forward looking ERTMS.

Finally, we are moving back to a broader concept of ERTMS as is in its name: a rail traffic management system, so not only a signaling and safety system. We are realizing how important it is to take the words CCS (Command and Control System) seriously in the Technical Specifications for Interoperability (TSI) revision. We are moving beyond the rather narrow approach that we have developed in ERTMS. This is what the System Pillar of the Europe Rail (JU) is focusing on.

We are also making sure that we have a synchronized development of innovation that feeds into the TSIs and the standards.

To cut a long story short, we are still world leaders, but we have to make sure to become faster in terms of deployment in order to show that we can stay world leaders.

### What are your expectations towards the upcoming revision of CCS TSI and TEN-T Regulation?

First of all, in terms of timeline, I hope that the revision of CCS TSI will be adopted by the end of this year. Also, I do hope that we get, at least at the level of the Council (Council of the EU), a political agreement (General Approach) on the revision of the TEN-T Regulation and that we have come to an agreement between the European Parliament, Council and Commission by the end of 2023.

In terms of concrete elements in the CCS TSI revision: First, it is very important that we get rid of several exemptions for onboard equipment that we have now. This has led to a

situation that we have had more new locomotives and traction equipment coming in the market without ERTMS than with ERTMS. We need to make sure that the new rolling stock is by default fitted with ETCS.

Second, we will set out some transparent rules regarding the transition management.

Third, we will lay down the FRMCS on-board readiness. This is an important step towards radio-based ERTMS, based on 5G. However, it is a little bit disappointing that we will not manage to lay down the full FRMCS specifications this time round. But we will have at least a solution to accommodate future radio evolution.

Fourth, we will also adopt rules for ATO (Automatic Train Operation), braking curves (not a new introduction but enforcement), enhanced modularity with defined interfaces.

Finally, we also have in the CCS TSI an obligation for Member States to produce standardized national implementation plans (NIPs). So, it's a huge package but an important one in terms of bringing us ahead.

As far as the TEN-T is concerned, we can focus on four issues.

First, deadline for the rollout of ERTMS on the comprehensive network by 2040. We are actually advancing by 10 years, and I know it's still in debate.

Second, we need a phasing out of the class B systems. From an economic perspective, it doesn't make sense to run two systems trackside in parallel. Whether we will manage to do it by legislation or by good economic sense we'll have to see.

Third, deadline to move towards the radio based ERTMS, so Level 2 (+). It's important in view of reducing the specificities imported from the class B systems.

Fourth, and this is perhaps overseen in the debate, we need to make sure that we have a synchronized deployment of ERTMS on-board and trackside. TEN-T is obviously much more about the trackside. But we are acknowledging that we are talking about a system. This synchronization is crucial, also given the fact that part of the infrastructure and the system's intelligence moves into the vehicles/locomotives.

### The current EDP covers the period 2017-2023. How do you see its update?

If you look at my second work program, you will see that the idea of my predecessor Karel Vinck to have an intermediary deadline of 2023 was very useful.

We now need to update the EDP and the best way to do is based on the new NIPs to be codified in the CCS TSI. We then have the TEN-T deadlines legally agreed between the legislators: the Council of the EU and the European Parliament. On that broad basis, I will propose a new EDP.

The idea would be to already start working over the next year when the new alignment of the TEN-T and the European Transport Corridors have already got stabilized.



Hopefully, will be able to propose and adopt a new EDP in 2024. That's the current planning.

We are still discussing (as done on the present EDP) if we should concentrate on trackside only, or if there should be a (looser) element, in terms of deployment on board as well.

### What should be the role of the ERTMS Forum?

This takes me back to the points I was making on the proposed TEN-T Regulation. Indeed, we have fora for each of the corridors but not for ERTMS. The idea is to create this platform horizontally also for ERTMS.

I have noticed in several Member States that there is not a single person who has a comprehensive knowledge what's going on regarding the ERTMS deployment in a (given) country. There is a scattered knowledge in different places. Thus, creating a single contact point or single knowledge base will be very useful. We will be discussing this in the coming weeks. It will be also much easier for all concerned to know whom to contact in which Member State. There are some recurrent topics i.e. how do you go about public procurement? what are the problems that you see in terms of prototypes? in terms of retrofitting? etc. This forum should be discussing in a structured way, the different

problems that Member States encounter in the ERTMS deployment and perhaps lead us to some solutions.

There will clearly be technical questions, but also financial and political questions that will be addressed. If we have a single national coordinator who knows about the ERTMS deployment, that's also the person that others can turn to; and this person could ask: how was this done? Or how do we organize funding schemes? etc.

For example, we had the Recovery and Resilience Facility, and some Member States have been using this cleverly to advance ERTMS deployment not only trackside but also on-board. But the message did not spread enough. This could be the sort of forum where these things could be discussed. Another topic that could be addressed is the state aid issue and public funding. I have the report that comes every two years, the work plan, which is a document that's appreciated by some, but if we have a living work plan involving the Member States that could be an even more efficient way to collaborate amongst ourselves and dealing with the ERTMS deployment.

# Latest developments

## Disclaimer

All articles included in this press review were sourced from publicly available websites covering the period of July 2022 to September 2022.

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

## EU - European Commission Invests €5.4bn in Sustainable Transport Infrastructure

July 2022

**The European Commission has granted 5.4 billion EUR in funding to 135 infrastructure projects across the European Union (EU) to promote safe, sustainable and efficient future transport.**

The projects were selected from 399 proposals submitted under the Connecting Europe Facility (CEF) funding programme. This funding aims to promote post-pandemic recovery in EU Member States and enable missing transport links to be constructed across the continent.

The selected infrastructure projects are all within the Trans-European Transport Network (TEN-T) that links the EU through a system of roads, railways, inland waterways, shipping routes, ports and airports. The European Commission hopes to complete the TEN-T core network by 2030 and the entire network by 2050.

**Director of the European Climate, Infrastructure and Environment Executive Agency (CINEA), Dirk Beckers said:**

***“The European Union is once more investing in the future of its citizens by supporting the creation of a sustainable, green, safe and smart transport system. The projects that we have selected, which cover all modes of transport across Member States, will help boost the EU’s post COVID-19 pandemic recovery by injecting billions into the real economy and guarantee a next generation transport infrastructure for our businesses and citizens.”***

Several of the funded transport infrastructure projects will boost the European railway network and provide cross-border links and connections to ports and airports. Rail infrastructure projects include the Fehmarn Belt tunnel linking Denmark and Germany, and upgrades to the existing rail-road transshipment terminal in Haniska pri Košičich, Slovakia.

Upgrades to the rail-road trans-shipment terminal will make it easier to move freight between rail and road and adapt the railway gauge so to accommodate trains built for different gauges, including that used in Ukraine.

Additional projects will also digitalise rail operations across Europe through the European Rail Traffic Management System.

[Source: European Commission Invests €5.4bn in Sustainable Transport Infrastructure | Future Transport-News](#)

## Belgium – EUR 11 million for the modernisation of Halle - Gravenbrakel line

August 2022

In August, Infrabel teams are carrying out major works on the L96 line connecting Brussels-Midi with Mons.

Wallonia should thus expect three complete interruptions of railway traffic in August due to works. The main works, which will last 1 month, started last week between 's Gravenbrakel and Halle, on the line Mons-Brussels. There, train traffic will be interrupted in both directions between 's Gravenbrakel and Halle between 30 July and 29 August in the morning.

Following the principle of "massification of works" that has been applied for many years, Infrabel is taking advantage of the works to renew as many parts as possible at the same time. Traffic interruption is essential for this.

### **The L96 project is a major investment**

The L96 project, intended to renew certain parts of the railway infrastructure that are at the end of their service life, represents an investment of around EUR 11 million and will put several dozen people to work.

The technical installations of the L96 line have reached a venerable age in some places. **Infrabel has therefore launched a renewal plan to ensure the safety and smoothness of train traffic on this important line of the network, which will also receive level 2 ETCS in the future.**

Specifically, technical teams will replace the sleepers over almost 20 km. This task is extensive because the final removal of 25,000 sleepers (some of them in wood) is necessary to install the new ones in concrete. The rails and ballast will also be renewed over a total distance of 1.2 km at Tubize and Hénuères stations. At the same time, other teams will work on modernising signalling and the overhead lines that supply the trains.

[Source:http://www.treinbestuurder.be/nieuws/read.php?id=10123](http://www.treinbestuurder.be/nieuws/read.php?id=10123)

## Bulgaria – EC approves EUR 110 million for Bulgaria to modernise TEN-T corridor

July 2022

**The European Commission has approved the allocation of 110 million EURs, as part of the Cohesion Fund to modernise a railway corridor in Western Bulgaria that is part of the TEN-T network between Sofia and the Serbian border.**

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a railway corridor in Western Bulgaria that is part of the TEN-T network between Sofia and the Serbian border.

The modernisation concerns a section between the Bulgarian cities of Voluyak and Dragoman – roughly 33 km – and the first phase is expected to be completed in 2023.

Elisa Ferreira, commissioner for cohesion and reform, said: “The project has environmental benefits, encouraging a shift of cargo flows from road to rail, and will result in less noise and air pollution, thus improving the residents’ quality of life.”

Moreover, the investment is in line with the European Green Deal’s plan to remove bottlenecks, connect border regions and promote sustainable freight transport.

For the first phase, the funds will come from the 2014-2020 Transport and Transportation Infrastructure Operating Programme. More specifically, the funds will help finance the refurbishment of the existing single track as well as the laying of a second, electrified track. In addition, there will be an upgrade of the supervisory control and data acquisition system.

The second phase of the project will be funded by the 2021-2027 Transport Connectivity Programme. This phase will involve the construction of signalling and telecommunication systems as well as the implementation of the European Rail Traffic Management System (ERTMS). Once both phases are completed, passenger trains will be able to reach 160km/h and freight trains 120 km/h.

The route is part of a bigger corridor linking Turkey with Central and Western Europe. Connecting Turkey to Europe would be a valid alternative to Eurasian traffic passing through Russia. The Voluyak–Dragoman project follows the ongoing construction of the Turkish line between Halkali and Kapikule, on the Turkish border with Bulgaria.

Source: <https://tanknewsinternational.com/ec-approves-e110-million-for-bulgaria-to-modernise-ten-t-corridor/>

## Czechia : Czech Railways Ordered 10 Electric Multi-System Vectron Ms Locomotives

August 2022

**In mid-July, the largest Czech rail freight carrier ČD Cargo and Siemens Mobility Czech Republic signed a contract for the purchase of ten interoperable multi-system electric locomotives Siemens Vectron MS.**

According to the manufacturer's website, the new A54 variant of the Siemens Vectron MS locomotive has a maximum operating speed of 160 km/h.

The locomotives for ČD Cargo will be manufactured at the Siemens Mobility plant in Munich-Allach and will be gradually handed over to the customer from the second half of 2024. The locomotives have the European Train Control System ETCS Level 2 Baseline 3 and are approved for operation in Belgium, the Czech Republic, Hungary, the Netherlands, Germany, Poland, Austria and Slovakia.

ČD Cargo already operates 12 of its own Vectron MS locomotives (A01 variant) within its fleet, has other locomotives on lease and at the end of last year ordered two Vectron AC locomotives with Diesel Power Module (DPM), which will be

delivered in 2023. In total, it will own 24 Siemens Vectron locomotives.

"We have had good experience with Siemens Vectron locomotives at the head of our trains for a long time. Their purchase has enabled us to fulfil one of the four strategic pillars of ČD Cargo, namely expansion abroad. We want to use the new locomotives to transport trains in other countries with interesting potential - the Netherlands and Belgium," says Tomáš Tóth, Chairman of the Board of Directors of ČD Cargo, a.s., and adds, "Ports are particularly interesting for us."

"We are delighted that ČD Cargo will welcome more Siemens Vectron locomotives to its fleet. The current locomotives will be joined by ten vehicles in the multi-system variant. This is the first Czech customer to have Vectron locomotives with homologation for Belgium in its locomotive fleet," added Roman Kokšal, CEO of Siemens Mobility Czech Republic.

Source: <https://pravednes.cz/click?id=106496707>

## Denmark - Banedanmark completes two more ETCS installations in Jutland

August 2022

**Banedanmark has completed the installation of European signalling system ETCS on two sections in Jutland, between Holstebro and Herning and on to Vejle and Skanderborg.**

The Danish railway manager worked on the two ETCS installations in Jutland since May this year, and finished the finishing touches in August. The new signals between Holstebro, Herning and Skanderborg and Vejle is the fourth rollout in Jutland, the peninsula connected to Germany, that Banedanmark has completed.

### Benefits for operators and passengers

The finalising works are preceded by several years of work to develop, implement and test new components in the track and in Arriva’s trains, which run regional trains on the sections in Central and Western Jutland. In addition, everyone from locomotive drivers to traffic controllers has been trained to use the new system. Both Arriva and DSB operate trains on the lines.

“Our locomotive drivers have already good experience with the new signalling system. It helps with keeping track of driving permits, speed limits and the course of the track. In this way, they are provided with far more information, and it gives them even greater safety when they have to drive trains on the routes”, says Therese Christensen, Commercial Manager at Arriva, Denmark’s second largest train operator.

Jens Visholm, commercial director at DSB, also looks forward to benefiting from the new signaling system as it is rolled out on more routes. “High punctuality, good traffic information and stable operations are important to our customers and a new digital signal system contributes precisely to lifting those areas.” Local level crossings may remain closed until the morning of 26 August so that they can be connected to the new signalling system.

### ETCS on the entire network

Towards 2030, Banedanmark will replace all the old, analogue signals along the entire railway network. The new digital

system, ETCS Level 2, is being rolled out on both the long-distance railways and the S-Bahn, more than 2,600 kilometres in total.

Source : <https://www.railtech.com/infrastructure/2022/08/17/banedanmark-completes-two-more-etcs-installations-in-jutland/>

## France - Roll-out is hindering French market opening, regulator warns

July 2022

**The limited roll-out of ERTMS is a major obstacle to the opening of the French domestic market to competition, according to rail regulator ART.**

Slow progress with ETCS installation is seen as a significant barrier to the emergence of more on-rail competition, especially in the inter-city and high speed segment.

ART's investigation into the state of the market follows the launch of domestic competition on April 5, when Trenitalia began operating a Paris – Lyon service to complement its cross-border trains between Paris and Milano. The regulator found that limited access to safety equipment and train control components posed a serious problem for Trenitalia as a new entrant and for other prospective operators.

Only 40% of high-speed lines in France are currently equipped with ETCS, and future deployment 'will probably be very gradual', the regulator believes. The situation is worse on the conventional network, where very few lines have been equipped. The only ERTMS project due for completion this year is the installation of ETCS on the French section of Rail Freight Corridor 2 (North Sea – Mediterranean).

To address the problem, ART has issued 18 recommendations on safety and train control equipment which it believes would facilitate the opening of the market. Among the key points is a major acceleration of the national ERTMS migration plan, which it says should be coupled with measures to speed up the removal of legacy Class B onboard and lineside equipment — TVM on high-speed lines and KVB on conventional routes.

However, ART accepts that this would be difficult without a transition phase, which aligns with European regulations. It calls for the creation of a 'system authority' for the Class B systems, which would ensure fair access to legacy equipment and enable sufficient rolling stock to be dual-fitted while ERTMS is deployed. ART recommends that safety body EPSF should take on this role, but if this is not possible the other potential candidate would be SNCF Réseau.

According to the regulator, there is a lack of clarity about how new entrants can gain an understanding of the Class B systems, particularly as many of the detailed technical specifications are held by a handful of key suppliers, primarily Alstom and Hitachi Rail STS. There is currently no regulatory requirement for rail sector bodies to provide access to this information or even to ensure that it is kept

up to date, despite mounting concerns about obsolescence.

ART has called for the urgent development of a French Specific Transmission Module, which would enable ETCS-fitted locomotives and trainsets to communicate with the legacy infrastructure. This would avoid the need to dual-fit those trains with separate KVB and TVM systems for use on non-ETCS routes.

Source: [Slow ERTMS roll-out is hindering French market opening, regulator warns | News | Railway Gazette International](#)

## Germany - Thales to digitise Deutsche Bahn's signalling system in the Stuttgart region

August 2022

German railway company Deutsche Bahn has awarded Thales Group a contract worth around €127 million to digitise the railway signalling system in the Stuttgart metropolitan region in south-west Germany, according to a statement sent to Strategic Umbrella.

This high-performance signalling system will ensure compliance with the timetable and allow more trains to run on the same network without the need to build additional tracks.

The tender, which covers the implementation of modules 1 and 2 of the "Stuttgart Digital Node" project until the end of 2025, was won by Thales at the end of November 2020.

Thus, the European group will install a digital signalling system (DSTW) with ETCS - European Train Control System and ATO - Automatic Train Operations technology for manned trains.

The contract covers the installation of the digital signalling system, the installation of ETCS, preliminary work for the implementation of automatic operations and the capacity and traffic management system (CTMS).

The "Digital Node Stuttgart" project led by Thales is part of the "German Digital Railways" programme, which will add up to 20% additional capacity to the rail network. The project includes a major innovation partnership between Thales Germany and Deutsche Bahn to develop new technologies for the launch of the German Digital Railways initiative.

Oliver Dörre, CEO of Thales Germany explained that "Germany's first digital hub will be the benchmark for other metropolitan regions across Europe in the years to come".

"Together with Deutsche Bahn AG, DB Netz AG, DB Projekt Stuttgart-Ulm GmbH and all project participants, we are pleased to help realise the framework project that will form the basis for future digitisation programmes," he added.

As a result, of the modernisation process, long-distance trains, regional trains and S-Bahn trains in the Stuttgart hub will run on a rail network equipped with the latest digital technology from 2025.

In addition to the new main station and other stations, lines covering areas longer than 100 kilometres will be the



first to be equipped with digital signalling technology, ETCS control and automated operations technology.

Stuttgart is to be the first framework project for the digitisation of the entire German rail network, a process that is scheduled to be almost entirely completed by 2035.

The "Digital Node Stuttgart" project is an important step for the future and for the development of the S-Bahn. On the main S-Bahn route, Germany's most modern signalling system will in future control the shortest rail sections, only 30 metres long. This will allow S-Bahn trains to run at the shortest intervals ever implemented in Germany. This will reduce and eliminate delays and, in addition, many more trains will be able to run safely without the need to extend the rail network.

The Stuttgart metropolitan region is one of the most densely populated in Germany, with around 2.7 million inhabitants and a high volume of road traffic. The construction of new railway lines within the city limits is ruled out, but the digitalisation of the signalling system will lead to a 20% increase in the capacity of the existing railway infrastructure. This means that many more passenger and freight trains can run, with better time performance and increased comfort, without building an extra kilometre of track.

Source: <https://umbrella-strategica.ro/thales-va-digitaliza-sistemul-de-semnalizare-al-deutsche-bahn-in-regiunea-stuttgart/>

## Greece - ERGOSE: November "fall" signatures on projects 200 million euro - "Starting signal" for railway projects 4 billions

September 2022

Signatures on railway projects with a total value of almost 200 euros are expected to "fall" in the next two months, always out of the blue and based on initial estimates and related planning, and while contracts of almost 250-300 million euros have already been awarded with the "official confirmation" in 2022. In particular, according to relevant information, in early November, contracts between ERGOSE and the consortia TERNA - MYTILINEOS and ABAX - ALSTOM are expected to be signed for two major projects, electrification in the section "Rio - Rhododafni" (141 million EUR initial amount) and the section "Paleofarsalos - Kalambaka" (initial cost 58 million EUR) respectively.

In the project "Construction of electrification, signalling - telecontrol and ETCS L1 of the existing single railway line Paleofarsalos - Kalambaka and construction of a new branch line at the S.S. Sofades", budget 58.710.000 EUR with revision, not including the amount for VAT, ABAX - Alstom were appointed as contractors. In summary, the scope of the project under tender concerns: the construction of the electrification, signalling - telecommand and ETCS L1 system of the existing single standard gauge railway line Paleofarsalos - Kalambaka.

### The previous contracts

It is recalled that earlier in 2022 already signed contracts between ERGOSE and contractors, with an initial cost of almost 250 million EUR in total. In particular, this is the contract for electrification and anti-freezing coatings, in the

new double railway line Kiato - Rododafni (the contractor of the project is the consortium TERNA S.A. - Mytilineos S.A., the cost of the project amounts to EUR 84 million and will be implemented within 30 months), the remaining railway infrastructure, superstructure and electrification works in the Athens S.S. and its connection to the metro - Phase B of the Athens S.S. (budget of EUR 33.990. 000 with revision, Intrakat consortium), the project for the "Construction of electrification, signalling - telecommand, telecommunications and ETCS L1 system on the existing single railway line Larissa - Volos" (also Intrakat) and the contract for the installation of a modern signalling system on the Thessaloniki - Idomeni section and the replacement of 37 track switches for signalling needs (EUR41 million, with ABAX - Alstom)

Source: <https://www.insider.gr/oikonomia/244762/ergose-sima-ekkinisis-gia-sidirodromika-erga-4-dis>

## Hungary - V-Híd Zrt. prepares for joint production with a leading Czech company

September 2022

### V-Híd Zrt. and AŽD Praha s.r.o. signed a strategic cooperation agreement for the modernisation of the Hungarian railway signalling network and ETCS system

V-Híd Zrt., a leading player in Hungarian railway construction, and AŽD Praha s.r.o., a market-leading Czech developer and manufacturer, agreed on the joint production of signalling and safety equipment for the Hungarian railway network at the InnoTrans 2022 exhibition in Berlin, Hungarian Builders reported.

Under the strategic cooperation agreement, the companies will cooperate in the development, production and sales of railway signalling and safety equipment in Hungary. The cooperation will include the application of Czech know-how and tools in the production of final equipment in Hungary, as well as the development of software specially tailored to Hungarian needs.

The Hungarian railway signalling network is characterised by the fact that it includes systems with different technologies, with electronic equipment that is more than a century old and state-of-the-art equipment operating simultaneously. The Czech company's systems can be flexibly adapted to Hungarian conditions. And the production related to the process is planned in Hungary.

Our aim is to produce state-of-the-art Hungarian products. All the safety equipment must be able to guarantee the same conditions, so it must meet the Hungarian requirements at the same time as the European interoperability requirements. At the moment we are very dependent on foreign manufacturers, among whom competition is limited. We want to break this situation and offer a viable Hungarian alternative," said István Sárváry, CEO of V-Híd Zrt.

And it is an important step in the development of the V-Híd Group that we are now not only adapting to the digital tools of railway technology, but also producing them ourselves. If we want to achieve results quickly, we have to skip certain

development steps, and we have found a partner in AŽD for this," Sárváry added.

We fully agree with the strategy that each country should have its own security equipment technology and should not depend on foreign suppliers. This is even more important in the field of railway safety than in other cases," said Zdeněk Chrdle, CEO of AŽD s.r.o.

Source: <https://www.napi.hu/magyar-vallalatok/v-hid-vasut-biztositoberendezes-gyartas-azd-praha.760212.html>

## Italy -ERTMS/ETCS: cutting-edge technology for rail traffic management

August 2022

**Monza - Latest-generation technology is running on the tracks to increase the safety of rail traffic and to make all the lines in Europe 'speak the same language'.**

With a total investment of EUR 6 million, the Italian rail network (Gruppo FS Italiane) has activated the ERTMS/ETCS (European Rail Traffic Management System/European Train Control System) level 2 system on the Monza - Chiasso line, the code name for the most advanced technology for the supervision and control of train spacing.

The new system also allows the circulation of trains of different nationalities, based on information exchanged by the trackside and on-board subsystems, defined with a common language and managed with interoperable components. In particular, the standard defines how signalling information is to be exchanged between trackside systems and trains, identifying the transmission techniques to be used and the message format.

Thus the constraints on international traffic that resulted from the diversity of signalling systems currently in use in different countries are essentially removed. This allows trains to run seamlessly on all European lines, while guaranteeing the safe movement of trains with the adoption of state-of-the-art functions and technologies.

The data and information transmitted make it possible to follow, moment by moment, the train's movement, providing the driver on the display, defined as a European standard for railway interoperability, with all the indications necessary for driving, with the activation of emergency braking if all parameters are not respected and the train's speed exceeds the permitted one.

The intervention is a further step in the technological modernisation programme of the management and control systems for railway traffic on the Chiasso - Monza - Milan axis, which is part of the Rotterdam-Genoa Corridor. Management and supervision will be carried out from the Milano Greco control centre in the room dedicated to high-speed lines.

Source: <https://cittafuture.quotidiano.net/lombardia/ertms-etcs-tecnologia-allavanguardia-per-la-gestione-del-traffico-ferroviario/>

## Netherlands - ERTMS assembly robot to automate labour-intensive work

July 2022

**Strukton and AMT are going to develop an ERTMS assembly robot together to automate labour-intensive activities. Tjark de Vries, Managing Director Strukton Rail Netherlands, and Sven Elst, CEO AMT Group in Breda, the Netherlands, ratified this partnership on 22 June by signing a declaration of intent during the RailTech Europe trade fair in Utrecht. The assembly robot is the continued development of the TRACKBOT platform, an electrically powered machine that is able to fully autonomously carry out work on railways.**

The ASAP ERTMS innovation partnership project with ProRail provided the motivation for this partnership. In that project, ProRail and its innovation partners are accelerating the rollout of the new European train safety system ERTMS (European Rail Traffic Management System) over the coming decades. This requires a tremendous number of components to be installed on the tracks. ProRail together with market parties wants to accelerate the rollout. Robotisation is a solution for achieving this.

### Assembly Robot

Our companies recently developed TRACKBOT. This is a universal and autonomous platform equipped with robots designed to automate labour-intensive railway activities. The idea now is to further develop this platform together and to make it suitable for installing beacons and axle counters. Strukton and AMT/NMT are combining forces and their technical knowledge for this purpose. The goal is to have a prototype ready in 2023. The ultimate goal is to fully autonomously, without any human intervention, carry out activities along tracks. Robotisation is making it possible for railway construction work to be carried out faster and demonstrably more accurately and safer. This reduces elapsed times and therefore increases track availability.

Source: [ERTMS assembly robot to automate labour-intensive work - Rail EN \(struktonrail.com\)](https://www.struktonrail.com/en/ertms-assembly-robot-to-automate-labour-intensive-work-rail-en)

## Poland - PKP Intercity receives first FLIRTS

September 2022

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

On 16 September, PKP Intercity received 2 of the 12 FLIRT electric multiple units produced by the Stadler Polska plant in Siedlce. According to the agreement, all trains are to be delivered to the carrier's rolling stock fleet in the third quarter of 2023. The modern vehicles delivered as part of the order worth more than one billion zlotys are part of the largest investment programme in the history of the company "PKP Intercity - Railway of Large Investments".

In 2017, PKP Intercity announced a tender for the supply of 12 electric multiple units. The most advantageous offer was from Stadler Polska. In 2019, a contract was signed and the process of order processing started. Today, the carrier is receiving the first trains.

They are equipped with the on-board ETCS GUARDIA system - Stadler's own solution in the field of rail traffic control. The GUARDIA system supports ETCS levels 1 and 2 as well as the conventional Class B safety system. The vehicle thus meets the highest safety requirements. This means that the vehicle meets the highest safety standards in rail traffic management. The system is changed dynamically, without having to stop the vehicle. Therefore, the system allows the vehicle to be operated with the highest safety standards, with full dynamic transition between ETCS levels 1, 2 and SHP.

It should also be noted that the FLIRT vehicles currently delivered are compatible with the FLIRT vehicles handed over by Stadler Polska to PKP Intercity in 2015. This means that it is possible to combine units from 2015 with vehicles from the latest series. This possibility offers the carrier great operational flexibility.

Source: <https://www.intercity.pl/pl/site/o-nas/dzial-prasowy/aktualnosci/pkp-intercity-odbiera-pierwsze-flirty.html>

## Portugal - French Alstom arrives in Maia and 'gives sign' to 25 jobs

September 2022

Manufacturer of two-thirds of national trains opens engineering and innovation centre for signalling systems as it bids to manufacture 117 new trains for CP.

Alstom, the company that manufactured two out of every three Portuguese trains, has opened an engineering and innovation centre in the city of Maia. The French company has already created 25 jobs for national engineers and will develop new signalling systems for railway lines.

*"The centre's main mission is railway signalling, through software development. It is another step in our growth strategy in Portugal,"* signalled Alstom's general manager for Portugal, David Torres, without revealing investment figures.

The French are already developing, in Portugal, new 'beacons' to be placed on the railway track, which allow communication with the Convel system and the new common European system, the ERTMS. The system could be exported and allow, for example, a Spanish train to circulate in Portugal without having to install additional technology - provided it has Iberian gauge or telescopic axles.

*"We are here to write a new chapter in mobility in Portugal. As leaders in the sector, we have to be here and apply our knowledge"* David Torres General Manager of Alstom Portugal

In addition to manufacturing trains, Alstom is currently responsible for the maintenance of the Convel - after the purchase of the Canadians from Bombardier. The safety system is installed in over 1,500 of the 2,562 kilometres of the national railway network (and in the Porto Metro network) and allows, for example, the automatic braking of the train in case of non-compliance with the track signalling or excessive speed. Already this year, the French manufacturer has sold four Convel systems to a national railway company.

First step of the Portuguese "dream

David Torres considered the opening of the centre as "a dream come true". In an interview to ECO, the responsible highlights that the Portuguese Government's plans for railways "are solid". Alstom - together with Portuguese construction company DST - is in the tender to supply 117 suburban and regional trains for CP, worth EUR 819 million.

Whoever supplies the new trains to CP will have to bet on national incorporation or even build a train factory in Guifões, next to the current workshops and technological centre for the railway.

*"In a tender like this, with a large number of trains, we want to put our experience to use, as we have done in other contracts in Europe. We are a global company, which becomes a local company when we develop projects. In this aspect, I believe we are unique",* he adds.

The opening of the Maia centre will also serve to "boost local industry, create quality jobs, develop local knowledge and skills". Alstom will also participate in a Master in Railways, to be launched by the University of Porto next academic year.

Source: [https://www.ardina.news/article/2022\\_09\\_14\\_905174812\\_francese-s-da-alstom-chegam-a-maia-e-dao-sinal-a-25-empregos](https://www.ardina.news/article/2022_09_14_905174812_francese-s-da-alstom-chegam-a-maia-e-dao-sinal-a-25-empregos)

## Spain - Hitachi to deploy digital signalling tech on French rail network

July 2022

**With more than 650 engineers in Spain for the development of signalling solutions, Alstom footprint in the country for signalling includes two centres of excellence and test laboratories in Madrid, as well as project centres in Leon, Sitges and Malaga. From its facilities in Spain, Alstom develops and supplies signalling and digital mobility solutions for more than 20 countries.**

The Madrid -Burgos high-speed line was officially inaugurated on 21 July. This section extends the Spanish high-speed network by 87.25 km and represents the extension of the high-speed North line (LAV), contributing to the social and economic structuring of the territories it crosses. The inaugural journey was presided over by His Majesty King Felipe VI.

Thanks to the ERTMS/ETCS Level 2 technology supplied by Alstom, the Madrid-Burgos line will increase its safety and train's speed, with the consequent reduction of travel times and an increase in the network capacity and regularity.

This signalling project is part of the contract awarded in 2015 to a consortium led by Alstom to build and maintain, over a 20-year period, the latest-generation signalling and telecommunications systems on the Valladolid-Leon and Venta de Banos-Burgos high-speed line.

The contract includes the project design, procurement, installation, commissioning and 20-years-maintenance of the signalling, fixed telecommunication and automatic train protection (ATP) systems, centralised traffic control (CTC),

security equipment, GSM-R communications equipment and infrastructure for trains and operators.

The new line adds to the state-of-the-art signalling projects that Alstom has been developing in Spain over the last two decades, which include, among others, the commissioning of the first ATP on the Mediterranean Corridor, the first driverless system in Spain (People Mover for Madrid Airport) and the first mainline railway system operating with ERTMS Level 2 without Level 1 support in the Albacete-Alicante Corridor. In addition, Alstom teams in Spain teams installed more than 600 onboard signalling systems on different commuter and high-speed trains.

With more than 650 engineers in Spain for the development of signalling solutions, Alstom's footprint in the country for signalling includes two centres of excellence and test laboratories in Madrid, as well as project centres in Leon, Sitges and Malaga. From its facilities in Spain, Alstom develops and supplies signalling and digital mobility solutions for more than 20 countries.

With more than 30 years of experience. Alstom is a leading supplier of onboard and on-track ERTMS/ETCS equipment. Worldwide, Alstom has developed more than 120 ERTMS/ETCS projects, installed 19,200 on board units and equipped more than 46,000 kilometres of lines.

[Source: Alstom's ERTMS/ETCS technology for the new AVE Madrid, Burgos line | MarketScreener](#)

## Sweden - Hitachi Rail and Tågakeriet I Bergslagen AB cooperate on the introduction of ERTMS signalling technology to harmonise Scandinavian railways

July 2022

**On July 7, Hitachi Rail signed a new contract for the development and installation of ERTMS (European Rail Traffic Management System) systems for the trains of Tågakeriet I Bergslagen AB (also known as Tågab) in Sweden and Norway.**

The modernisation of the fleet will improve operational efficiency, interoperability and availability of vehicles, thereby reducing potential traffic disruptions.

Under this contract, Hitachi Rail will develop, install, test, certify and commission the on-board signalling system based on the latest ERTMS technology and the STM-ATC2 system – a system that allows trains to run on conventional

lines. The installation will be carried out in Tågab's workshop in Kristinehamn with Tågab's own staff.

ERTMS is the most advanced technology for the digital control of train operation and aims to harmonise the various train control systems. Once the new trains operated by Tågab are equipped with the interoperable systems, they will run seamlessly and without interruption on mixed-traffic routes throughout Scandinavia, from Sweden to Norway. The technology will also enable automatic control of the train's safety functions, such as braking when a hazard is detected. The ability to detect and correct disruptions can make traffic more reliable. By regulating speed, acceleration and braking, the system enables the operator to reduce energy consumption and increase resource efficiency.

Lars Yngström - CEO of Tågab: *"We are proud and grateful that a world leader like Hitachi Rail is helping a small regional railway company in Sweden to take this step into the future! We are impressed by the outstanding competence and understanding of our terms and conditions that have led to this contract. We have learned a lot from this process and now hope that together with Hitachi Rail we can contribute to the introduction of ERTMS on a larger scale in Scandinavia."*

Eric Morand, Head of the Nordic Business Unit at Hitachi Rail, said: *"We are delighted to be involved in the digitisation and harmonisation of key connections between Norway and Sweden and to create a more reliable and efficient service for passengers with our innovative signalling solutions. I am honoured and grateful to Tågab for their trust in Hitachi Rail as an important partner for innovation and the development of smart and sustainable rail mobility that can benefit communities across Scandinavia."*

Hitachi Rail is a global leader in digital signalling technology and was the first to introduce ERTMS technology in Europe – in the UK, Italy, Spain and France, as well as in the highly competitive markets of China and India. The solutions and products developed by Hitachi Rail leverage Hitachi Group's full capacity for innovation in digitalization, carbon emissions and sustainability to meet the evolving and increasing demands of cities and populations around the world.

[Source : LOK Report - Sweden: Hitachi Rail and Tågakeriet I Bergslagen AB cooperate on the introduction of ERTMS signalling technology to harmonise Scandinavian railways \(lok-report.de\)](#)



## Look ahead – Digital Rail Live

**Digital Rail Live 2022.** From the 7<sup>th</sup> to the 8<sup>th</sup> of November the Railway industry will once again be gathered to discuss the future of railways. In particular the global railway operators and infrastructure managers will debate railway

digitalisation and how it can become a lever for increased capacity and much more. For a full overview, please consult the following [page](#).

## Contact details



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