

# 2021 was the 'European Year of Rail' - the journey began!

Adina Vălean, European Commissioner for Transport

## Editorial



### A new structure for the management of the railways in the UK

The mainland railways of the United Kingdom were restructured in 1994 with the principal purpose to introduce private sector ownership and in parallel comply with the European Directive to separate the financial management of track from trains. There can be no doubt that the biggest change in rail travel in the period since then has been the significant growth in the numbers of passengers using rail. In the ten years from 1995 to 2015, UK rail passenger journeys grew from 761 million to 1651 million according to the international statistics company Statista. The UK Government supported this growth with investment in new trains, however, there was growing dissatisfaction with the fragmented structure of train services laid bare by the complex ticketing system. Passengers were increasingly frustrated by finding that they could travel more cheaply by purchasing several single tickets for a cross country journey that used more than one franchise than by buying a single ticket. At Government level matters were equally fraught as franchisees defaulted on their contracts and government managed agencies, formed largely by former railway executives, took over their businesses under direct control. This resulted in the establishment of the Williams Rail Review in September 2018 to look at the structure of the whole rail industry and the way passenger rail services are delivered.

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December 2021

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- 23rd Int. Conference of the ÖVG Track Working Group: "Predictive maintenance - from data to action".
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After much deliberation and consultation, together with government delays (they were very busy trying to resolve Brexit and manage Covid) it was announced in the summer of 2021 that a new public body, independent of Government, would be formed and it would be called "Great British Railways" (GBR). This new body, following 25 years of a fragmented system, will integrate the railways, owning the infrastructure, collecting fare revenue, running and planning the network, and setting most fares and timetables.

Most importantly for rail passengers, GBR will simplify the current mass of confusing tickets with new flexible season tickets and a significant roll-out of more convenient Pay As You Go, contactless and digital ticketing on smartphones.

A new GBR website will sell tickets and a single compensation system for operators in England will provide a simple system for passengers to access information and apply for refunds.

GBR will contract private partners to operate most trains to the timetables and fares it specifies, with a model like that used by Transport for London in its successful Overground and Docklands Light Railway services.

The new Passenger Service Contracts will include strong incentives for operators to run high-quality services and increase passenger numbers. They will not be one-size-fits-all: as demand recovers, operators on some routes, particularly long-distance, will have more commercial freedom. Affordable walk-on fares and season ticket prices will be protected.

Of course, this is all in the future, with implementation expected in 2023. Today the UK's railways face a certain degree of uncertainty as passenger numbers are still well below pre – Covid levels. Leisure travel has returned, but with many commuters working from home, the core regular rail users, especially on suburban services, have yet to return.

I'm sure 2023 will be another important year for rail services in the United Kingdom. It is to be hoped that the new unified structure will be delivering its services to a larger number of passengers than today, supporting the global drive to reduce transport's carbon footprint.

*M.I.C.E. Richard Spoons, Observer*

## From the Presidium

Priority topics discussed in the four Sessions of 2021



### Preparation of the General Assembly:

The meeting will be postponed to 2022 and will take place during the IAF in Münster on 1.6.2022.

Heijnen announced that he will no longer be available as President.

Wermelinger informed in July that he will not continue the job as General Secretary.

Neumann will also end his engagement in 2022.

**Peter Veit** is willing to lead the finding commission for a new presidium.

### Financial situation:

The financial situation of the UEEIV is good.

Due to the Corona crisis, seminars and conferences cannot be organised; as a sign of cooperation in this serious time, the Presidium has decided to reduce the fees for members and supporting members to 50% for 2021.

### Supporting members:

Cholewa could convince TRACK TEC to sign a contract for supporting with € 1500.

Wirth had no further contact to Stadler and Thales.

### Report of Member Associations:

ÖVG, AK Eisenbahntechnik, gets a new president: **Dr. Gérard Presle**

CIFI confirmed a new president: Dott. Ing. **Maurizio Gentile**

PWI confirmed a new president: **Nick Millington**

### Events:

Conference on "30 years UEEIV - retrospect and future", not held because of Corona.

The same applies to many events of the member unions.

### Certification:

Stefan Wetzel would be approved for Staff Certification Body (SCB).

SCB will get in contact with the German accreditation body DAkks to clarify the process to officially certify a 'Systems engineer'.

PMC Rail is now in reorganizational status but UEEIV will remain the certification body for them.

## Rules and Regulations:

The amendment of the Rules of Procedure for Certification BR-C was decided by the Presidium.

The amendments to the Rules of Procedure BR are being prepared for decision in the AGM.

## 'Future workshop' to ensure the continuity of the UEEIV

The future workshop on 9 November 2021 in Opladen made it clear that the current structures are not suitable to lead the UEEIV into a carefree future and to perceive it in Europe as an enriching railway engineers' association. It urgently needs to have a stronger external impact and significantly increase its visibility. It needs clear missions and visions, greater commitment from all those working in the association and a professional management that runs the day-to-day business using all available digital media.

This means that the UEEIV needs to reorganise itself internally and externally:

- \* It needs a General Secretary who maintains regular contact with the member associations and works with them on common themes and strategies for the railways of the future - in such a way that a priority theme is defined every year, on which at least one conference is held with all member associations.

However, it must also attract other European railway engineers' associations as members or initiate their foundation.

- \* The UEEIV can never be as broad as the international organisations that have an impact on the railway sector. Therefore, it is important to seek cooperation with them.

- \* New supporting members need to be recruited in order to be able to bear the financial burden in the future.
- \* The public perception of UEEIV in the railway sector must be significantly increased and a marketing strategy must be developed to better reach our customers. Clearer tasks and achievable goals must be defined in order to be perceived as the representative of the interests of European railway engineers and thus be able to survive! We need a "product" that we can present and sell.
- \* The recognition and understanding of the interrelationships in the railway system and the consideration of the interfaces are essential tasks of systems engineering. The UEEIV is in the best position, in coordination with the Gesellschaft für Systems Engineering e.V. - GfSE, to promote certification as a "Railway Systems Engineer" and to offer the certificate on the European market as soon as possible.

A similar procedure should be considered for the certification of an "Accredited Railway Expert".

- \* For the new and much more active action, it will be increasingly necessary to have members in the Presidium who are young, dynamic and above all committed.
- \* The modernisation of the website is on the agenda. It is to become the European platform on which all relevant information from the member countries will converge and be accessible to everyone.

After three years, the implemented measures will be evaluated - if the necessary success is not achieved, the dissolution of the UEEIV must be seriously considered.

*Dr. Bernd Neumann, VDEI*

\*\*\* *Press release* \*\*\* *Press release* \*\*\* *Press release* \*\*\* *Press release* \*\*\*

## European railway engineers with a new strategy

The Union of European Railway Engineer Associations - where are we going?

The UEEIV is an umbrella association of European railway engineer associations, which was founded 30 years ago to support the creation of a Europe-wide continuous railway system. It has changed over the years with railway policy, regulations and technology. However, it still retains a considerable pool of expert engineering knowledge in every discipline.

Against this background, members of the Presidium met with representatives from national member associations, railway companies, science and industry for a workshop on November 9th, 2021 to review the association's strategy.

### The sharpened strategy

We want to be a platform for knowledge exchange for railway engineers in Europe and their associations.

We want to support engineers and companies working in the rail sector to meet the challenges of generational change, digitalisation, interoperability, climate change and environmental protection as well as the safety and availability of railway assets.

We want to give the railways a competitive edge in competition with the road and air!

Our mission:

### **Connect - Share - Certify**

#### **Connect - network:**

We want to connect people within the European rail sector, promoting and facilitating the exchange of ideas and information between the industry and the world of engineering and scientific research.

We want to approach European railway engineer associations that are not yet members of UEEIV and establish cooperation with them for future collaboration.

We want to convince companies in the rail sector of the work of the UEEIV and win them over as new supporting members.

#### **Share - knowledge:**

We want to share the extensive knowledge we have at our disposal and invite our members to support us in this. With a

collection of "best practice" solutions, we want to enable the rail sector to consistently apply optimal technology to engineering problems.

#### **Certification - training and experience:**

We want to certify railway engineers and operators of track maintenance machines, thereby providing them and their employers with confirmation that they have the appropriate training and experience.

In the future, we will also strive for certification for the "Railway Systems Engineer" and an "Accredited Railway Expert".

#### **Media activities**

We want to be visible for the engineers in our member associations and for the railway experts as well as for the companies in the railway sector and the scientific institutions in general.

In addition to the print media and our website, we also want to be present on "social media".

We want to share content via videos on YouTube.

We want to publish stories about experience and personalities.

Furthermore, we will continue holding seminars and specialist events with our member associations.

„The individual can always learn, even from these times“

## **What does a Post-Covid World bring us as engineers?**

And suddenly our world changed. What started as a small remark on page 20 of the newspaper billowed out to a full well covering pandemic with at the time of writing more than 3 million deadly victims and many people affected, sometimes for life. It demonstrated that anything that we think a certainty can be put upside down in a blink of the eyes. This results in a world where we may guess how it will look like post Covid19-pandemic, but no guarantee given.

What does that mean for us as engineers personally and as umbrella organization of associations of railway engineers? Questions are many. Does the new world have more or less

need for travel and may the distribution of travel modes changes. Are people taking public transport less or more? Can the railway undertakings sustain their business model or do the need to live with less passenger?

The answers to these questions about the final customer and the effect on the RU will have an impact on what we do as professionals and associations but, even more, have an impact on our private life and the way we carry out our profession. I personally have not been in a plane since the beginning of last year; a period I never saw before with tens of trips



every year. New words propped up: we “zoom” or “team” behind our screen. We hold virtual parties.

As we are trying to overcome the pandemic it is a time for reflection on how we did things in the past but a good guess is that we will probably not travel 8 hours anymore to attend a two hour meeting unless for very good reason. That will impact on our railway system too. Less business traffic had already changed the model of aviation but will now also change our beloved mode of public transport. RU and infrastructure managers will need to reduce cost as operational revenues will shrink. Will this impact on the number of engineers needed in a positive or in a negative way. Are there further threats or are there opportunities too? Are we creative enough to head into the “new” world?

As umbrella organization, the UEEIV will do what it can to help you and your association to adapt to whatever comes at us but as we do not have a crystal ball that predicts us the future. It takes flexibility and ingenuity to move forward. Luckily these two characteristics a part of our thinking as engineers: do not take anything for granted but understand what is coming at us, analyse the problem and come up with solution scenarios. This is our strategy into the future also as organization. Do what we can and explore ways to support members and help them to further the knowledge of those active in the sector: you as engineer. This includes that we hope for your feedback on how we could reach our goals.

Remains me to wish you a good health in these times; stay healthy.

*MSc. MBA Frans Heijnen, President*

## Rising membership numbers and well-attended successful events despite Covid pandemic

### Activities of the Permanent Way Institution in 2021

The year has been marked by a continuation of restrictions imposed by the presence of the Covid-19 pandemic amongst the UK population. Each of the geographically based sections had established a routine of regular online remote meetings in 2020, and these continued in 2021. In fact, they have been extremely successful, attracting large audiences and not just within the UK. Despite the pandemic the Institution continues to record steady growth in membership. The Annual General Meeting was held in June, when **John Edgley** handed over the presidency to **Nick Millington**. It is usual for the President to visit each section during the term of office; however, John became the first President unable to achieve this in his term of office due to the pandemic.

In late June the UK government lifted restrictions on more than one household gathering indoors, and the possibility of section meetings and conferences for the autumn season became clear. Earlier in the month the PWI exhibited at the outdoor Rail Live event held near Stratford-upon-Avon. This was very well attended and gave the Institution its first opportunity for face-to-face contact with members for 15 months.

In September the PWI exhibited at the three-day Infrarail/Railtex Exhibition in Birmingham (*photo*). This event is always popular with railway folk, and this year created one of the first opportunities to meet indoors and chat with colleagues and suppliers in over 18 months.



*From left: Mike Barlow, Techn. Manager; Stephen Barber, Chief Executive; Joan Heery, Past President; Brian COUNTER, Techn. Director; Visitor*

In the second half of the year, face-to-face conferences were held in Manchester (Hit the North) and Newcastle (Railway

Plant). Difficulties with venue booking mean that a planned Autumn conference in Glasgow covering electrification has had to be deferred to April 2022. The PWI also delivered four online seminars during the year: two in March and one each in October and November.

2021 marked the first year of operation of the PWI's Climate Change Adaptation and Decarbonisation Committee. The committee commissioned a report on the PWI's own "carbon footprint", prepared in accordance with ISO-14064-1:2006. Consequent on the report, the PWI has achieved formal carbon-neutral status.

As well as providing members with opportunities to meet and exchange technical expertise, the PWI is also authorised by

the UK Engineering Council as a competent body for the registration of professional rail infrastructure engineers. In June of this year the Engineering Council also granted the PWI a two-year licence to undertake accreditation of University and Technical College courses that provide exemplifying academic qualifications for professional registration. This is considered a step forward, help to make the PWI the Institution of choice for railway infrastructure engineers.

It is to be hoped that the more significant impact of the Covid-19 pandemic in the last 21 months is behind us and that a near normal year of meetings, conferences and training events can take place in 2022.

*M.I.C.E. Richard Spoons, PWI*

## ZID-activities on traffic safety at level crossings

Risk analysis and risk assessment of accidents at level crossings/road crossings  
Triangle of vision and the problem of train perception at road crossings

Regarding the **EU 2021 "Year of the Railway"**, and at the initiative of the Presidium of the UEEIV, ZID conducted several campaigns, the activities of which were aimed at increasing the level of safety at existing level crossings. Two study materials by M.Sc., MBA **Slobodan Vukmirović** were published, including presentations related to analyses in hazard risk research and measures to prevent collisions, processed in the first case of studying the level crossing provided only by signal signs "Railroad crossing" and "STOP", and in the second a case where a malfunction of an automatic device with barriers and traffic lights was previously detected and in which, as an urgent safety measure in use, traffic is regulated on the spot by the method with manual signal signs of railway staff given to locomotive personnel and road drivers.



In addition to information on data and conclusions of expert-scientific analyses intended for designers, technical controls of projects and supervision of construction works, local self-government bodies, regulatory and inspection state bodies and institutions, activities were carried out on preventive campaigns dedicated to introducing railway and road vehicle drivers and their education in a way how to identify specific risks related to the circumstances of obvious poor visibility and difficult perception of certain elements of the risk of a relational traffic situation and also has been initiated certain recommendations of relational measures to prevent serious consequences as they were also investigated and identified in the analysis of the project in two case studies severe accidents at level crossings.

There is a plan to hold a special comprehensive road-rail conference on traffic safety at rail crossings, which will be organized in the forthcoming period in compliance with the prescribed conditions of the applicable COVID preventive measures and at which engineers from within all rail technical fields are expected to take an active part in it and to make their significant contribution to this field.

*M.Sc., MBA Slobodan Vukmirović, ZID*

## NGSRTE-Seminar "2021 - a year under the sign of the railways"

Opportunities to expand intermodal transport and railway infrastructure innovations

In the second quarter of 2021, given the improvement of the epidemiological situation in Bulgaria and the reduction of restrictive safety measures, a conference on "2021 - a year under the sign of the railways" was held in the Albena complex on 04.06.2021. The event was organized by the National Guild Society of Railway Track Engineers (NGSRTE), under the aegis of the UEEIV.

More than 90 specialists in the field of design, construction and repair of the railway track were present, in compliance with the necessary anti-epidemiological safety measures.



The conference was opened by Eng. **Ivo Yanakiev**, Chairman of the Board of NGSRT, who welcomed the participants and congratulated them on the 30th anniversary of the association. It was stated that it is no coincidence that 2021 was chosen by the European Union as the year of the railways. This is the first full year of implementation of the rules of the Fourth Railway Legislative Package, which aims to create a fully integrated railway system in Europe, remove obstacles of an institutional, legal and technical nature and support economic growth. The advantages of rail transport in terms of efficiency, low energy consumption, high environmental friendliness and safety were highlighted. It was recalled that transport accounts for a quarter of the EU's greenhouse gas emissions, but only 0.4% of it is accounted for by railways, which is largely electrified. Only 0.1 deaths by train were registered in passenger transport per 1 billion km, compared to 0.23 - in bus transport, 2.7 - in car use and 38 - in motorcycle traffic. The coronavirus crisis has shown that trains can provide emergency transport of basic goods such as food, medicine and fuel in emergencies.

As Vice President of UEEIV, Assoc. Prof.Dr.Eng. **Mario Galabov** greeted the participants in the conference on behalf



of the Presidium and reminded that in 2020 it was 30 years since the establishment of UEEIV. He spoke briefly about the initiatives of the UEEIV, related to system engineering, the establishment of a Network of

Young Engineers, the certification of European railway engineers.

The moderator of the first panel was Prof.Dr.Eng. **Milcho Lepoev** from the University of Architecture, Civil Engineering and Geodesy (UACG) in Sofia.

The following reports were presented:

- \* "European railway policy - bridges to the future"  
Eng. **Simeon Evtimov**, NGSRT;
- \* "Opportunities for expanding access to intermodal transport"  
Eng. **Nayden Pavlov**, Prof.Dr.Eng. **Darina Nitova**, UACG;
- \* "Ballastless railway in the longest tunnel in the Balkans - a challenge in design and construction"  
Eng. **Yordan Georgiev** and Eng. **Anton Sofronov**, Infrastructure Construction JSC, Bulgaria;
- \* "Initial maintenance of railway switches"  
Eng. **Zlatin Krumov**, Voestalpine Railway Systems Bulgaria OOD.

The second part of the conference was chaired by Eng. **Anton Sofronov** from Infrastructure Construction JSC.

The following reports were presented:

- \* "Elimination of surface faults on the rails in the railway"  
Eng. **Christian Schwartz**, Eng. **Anastasia Venkova**, Vossloh GmbH, Germany (via internet connection);
- \* "Composite sleepers of recycled materials"  
Eng. **Reimund Dann**, Eng. **Yosif Stanchev**, Eng. **Martin Penev**, PreRoad AG, Germany (via internet connection);
- \* "Sustainable water management systems for safe and modern railway infrastructure"  
Eng. **Venelin Kirilov**, ASO - Building Elements Ltd.

Ass. Prof. Dr. Eng. **Mario Galabov**, NGSRT

## Track optimisation through predictive maintenance - from data to action

23rd International Conference of the Railway Technology (Track) Working Group of the Austrian Transport Science Society (ÖVG)

The Conference took place on 14 September 2021 at the TU Graz - in strict compliance with the prescribed corona regulations.

The focus of the event was on "predictive" facility management, incorporating and taking account of all available asset information (data), the forecast of further developments and the derivation and implementation of specific maintenance and renewal measures in the superstructure. The event was rounded off by a round-table discussion between the infrastructure managers of DB AG, ÖBB and SBB.



In the opening lecture, **M. Mach**, Head of Track Technology at ÖBB-Infrastruktur AG, provided information on the railway as a mode of transport of the future. ÖBB can look back on six years of successful maintenance management, where it has been possible to significantly reduce important superstructure parameters such as track position quality and rail surface defects (above all head checks) in the network and thus significantly increase access to the network for customers. The elimination of the drivers of disruption (e.g., switches, insulating joints), improved employee training and the reduction of complexity in switches through new designs have improved the both the likelihood of disturbance and steps to its elimination. This has been achieved through the evaluation and analysis of countless data obtained from a wide variety of measuring and monitoring systems (catenary measuring cars, train running checkpoints, switch diagnostic systems and so on) on the ÖBB network. Increasingly, new, innovative technologies are also being used, such as fibre optic sensing, track component video (Photo) or drones for

the inspection of bridges or rockfall and avalanche barriers. The automation and digitalisation of inspection services are seen as an opportunity for the track of the future and are being strongly promoted by ÖBB-Infrastruktur AG.

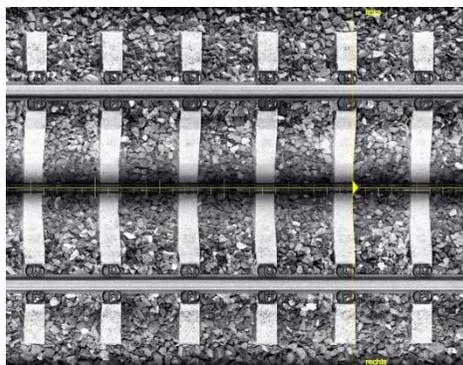


Photo: Track Component Video, EM 250 top-hat railcar of ÖBB-Infrastruktur AG

**M. Zacher** and **D. Nicklisch** from DB AG were able to report on a milestone in the inspection of switches. After many years of development, the manual measurement of the track guidance dimensions in switches was replaced by a vehicle-based measuring system. For the control inspection of switches, two track work vehicles were equipped with measuring technology (laser and camera) in order to drive through large stations with more than 100 switches under load and to evaluate them automatically. Regular use in the DB AG network is expected from September 2022.

A very new and exciting monitoring concept for recording the condition of infrastructure assets was presented by **M. Brauner**, **S. Huber** (Frauscher Sensonic) and **I. Vidovic** (voestalpine Railway Systems). Fibre-optic sensor technology in optical fibres laid along railway lines uses the physical properties of light travelling along a fibre to detect changes in temperature, strain and other parameters. Deviations from the target state can be used to detect, among other things, blockages in the track caused by natural hazards (falling rocks, avalanches), a short circuit in the overhead line, subsidence of components, rail damage in the form of broken rails or simply the exact position of a train during its journey.

Under the motto: "You can't manage it, if you can't measure it", **R. Schmid** (ÖBB) and **H. Stefko** (IBM) showed that the

system "vehicle-track" can be described and its development predicted (theoretically) by means of a specific set of status and movement data if the mechanisms of action are known. In the quest for knowledge for improvements in the wheel-rail system, one is always on the lookout for information that is often available but only partially of the required quality. It requires data on train operation, track condition, vehicle condition as well as the associated time intervals in order to be able to perform a combined condition assessment via model-based "machine learning".

In his presentation, Prof. **P. Veit** (TU Graz) reiterated the need to consider the entire life cycle costs for successful asset management. With known data and time intervals, one can go into a forecast of the development of condition. However, data must first be verified and synchronized (in terms of correct location) before trend analyses can be derived from time intervals in order to understand the behavior of an asset. Data from the measurement of stresses and parameter-specific analyses of the deterioration rates of these assets are essential here.

**A. Brandi** (SBB) and **G. Neuper** (ÖBB) addressed the topic of needs-based, correct budgeting of the necessary elements for a successful implementation of construction projects. Too low renewal volumes lead to a backlog demand, which can be easily proven by the annuity calculation. If the LCC-optimised annual quantities of renewals in the track network are known, the necessary financial requirements can be estimated very stably, even many years in advance. It has

been proven that a reduction in the length of possession windows for construction activities leads to significantly higher implementation costs. While SBB focuses on mostly short track possessions and thus has to accept higher implementation costs, ÖBB pays attention to a balanced relationship between operational optimisation and costs for the provision of infrastructure.

In his presentation on smart track-laying machines, **F. Auer** (Plasser & Theurer) reported that track-laying machines can also make an important contribution to the acquisition of infrastructure data. A large number of smart sensors and the use of artificial intelligence help from the inspection (actual data acquisition) to the actual work of the track and switch tamping machines to the documentation of the work results.

The maintenance of urban track systems is somewhat different from that of mainline railways. **J. Kehrer** (Wiener Linien) gave an insight into the possibilities of condition assessment by means of measuring vehicles on trams and underground railways and the determination of technically and economically optimal intervention times by comparing annuity progressions. Using the example of the tramway, the grooved rail was identified as a decisive component for renewal.

A virtual "round table discussion" of the three infrastructure directors **F. Sennhenn** (DB AG), **S. Sommer** (representing SBB) and **K. Bauer** (ÖBB) about the expectations and chances for the track of the future as a crowning conclusion rounded off the successful event.

*Dr. Bernhard Knoll, e.h., ÖVG*

## CIFI: Winter Olympics 2026 - Transport challenges and solutions

Inventory of transport infrastructure development programmes with a focus on railways

On June 24<sup>th</sup> 2019 the IOC assigned the 2026 Winter Olympic Games to Milan-Cortina. Competitions of the various sports will take place from 6 to 22 February in various locations, as well as in Milan and Cortina (Fig. 1): the transport system will therefore be very important for spectators, athletes and journalists to access the different sites. From 6 to 15 March 2026 the Paralympic Games will take place in the same venues.



CIFI North Area, in collaboration with the sections of Milan, Venice and Verona, organized a webinar on 25/2/2021 to take stock of the transport infrastructure development programmes, with particular attention to the railway ones.

**Marco Broglia**, CIFI vice president for the northern area, opened the works by introducing the speakers. Afterwards, **Giovanni Saccà**, Chairman of the CIFI Verona Section, gave a presentation on the topics of this event.

In the first speech, **Aldo Colombo**, Director of Infrastructures, Transport and Mobility Department of Lombardy Region, first indicated the traffic expectations: about 1.3 million spectators in a fortnight, 55% of which from Italy, 23% from the nearest countries (F, CH, D and A), 12% from the rest of Europe and the remaining 10% from overseas.

In figure 2 it is shown the important role that railway system will have, in particular with the upgrading of the Milan-Sondrio-Tirano railway and the construction of the new Brescia-Padua high-speed line.



An investment of 351 million is planned for the purchase of new rolling stock for connections with the two airports of Malpensa and Bergamo and for the Milan-Tirano line.

The second speech was by **Roberto Andreatta**, Director of the Territory, Environment, Energy and Cooperation Department of the Autonomous Province of Trento, who illustrated the transport strategies envisaged for the events that will take place in Val di Fiemme and Baselga di Pinè, both reachable only by road.

To complete the vision of local authorities, **Elisabetta Pellegrini**, Director of Infrastructure, Transport, Public Works and State Property Area Department of Veneto Region, listed the main interventions on the railway and road infrastructures necessary to create adequate accessibility to Cortina, home to competitions for various specialties.

Of particular importance is the completion of the Milan-Venice high-speed line with the Brescia-Padua section and the new railway connection with Venice Marco Polo airport (Fig. 3)



The national railway infrastructure is managed by RFI: **Vincenzo Macello**, RFI Investments Director, recalled that for the railway infrastructures in the area affected by the Winter Olympics, approximately 3.6 billion euros are provided for funding, of which 2.5 for the completion of the Milan-Venice high-speed line, 645 million for the two airport connections in Bergamo and Venice, 150 million for the direct connection between Bressanone and Val Pusteria and the rest for the upgrading of existing lines, including the electrification of some sections in Veneto.

To increase capacity of the Milan-Tirano line that is single track from Lecco to Tirano, are planned the elimination of some rail crossings, the improvement of track layout of stations and the signaling and traffic supervision systems.

The new double track connection between Bergamo and Orio al Serio airport (Fig. 4), 5.3 km long with a short tunnel section, will be completed by December 2025 and will allow to reach Milano Centrale in one hour.



In Veneto the improvement interventions involve various stations on the Venice-Calalzo line, a locality close to Cortina, both from the point of view of passengers (platforms, shelters, lobbies), and to improve operation management. Some sections will also be electrified, in particular the Treviso-Montebelluna-Ponte nelle Alpi line.

The Trento station will also be revamped both in the building and in the areas facing it.

The connection with the Venice airport provides a "rocket" configuration with an underground station with two tracks.

And the Riga variant (Fig. 5) will allow to increase frequencies and reduce travel times between Bolzano and Val Pusteria by 15 minutes.

### Nuovo collegamento ferroviario «Val di Riga»

Descrizione dell'intervento

**OBIETTIVI**  
 Riduzione tempi di percorrenza tra Bressanone e Rio Pusteria  
 Innalzamento della frequenza oraria e implementazione servizio viaggiatori

**INTERVENTI DI PROGETTO**  
 Realizzazione di una nuova bretella ferroviaria per il collegamento diretto tra Bressanone e San Candido  
 Raccordo tra la linea storica Verona-Bressanone e la linea storica Fortezza-San Candido  
 Nuova fermata di Naz Sclaves in corrispondenza del ricongiungimento con la linea storica Fortezza-San Candido  
 Realizzazione di un nuovo Posto di Movimento presso Naz Sclaves sulla linea esistente Fortezza-San Candido



Finally, for the part concerning transport services, two speeches by **Giorgio Spadi**, president Milan CIFI section and Operations Director of Trenord, which manages regional services in Lombardy, and **Joachim Dejaco**, Director of STA Bolzano, which regulates rail services in South Tyrol.

**Spadi** recalled that the Milan-Tirano line today has two critical issues: the presence of 56 level crossings and the need, on the single track section, to make 14 crossings between trains every hour. This makes it difficult to recover delays in the event of an infrastructure or rolling stock failure.

In the two weeks of the Olympic Games, two trains per hour per direction will be scheduled between Milan and Tirano

from 5 am to 12 pm, ie 76 trains/day. Some of these trains will directly connect Malpensa and Bergamo airports with Tirano, using new rolling stock.

In Tirano there will be a train/bus interchange to continue up to Bormio and Livigno, where the alpine ski and snowboard competitions are held. To cope with the volume of traffic arriving with trains, up to 24 bus journeys per hour per direction are planned.

**Dejaco** illustrated how the connection with the Anterselva arena will be established,



where the biathlon competitions will take place, basing on the positive experience made with the world championships held in 2020.

About 20% of spectators are expected to arrive by train; in Valdaora the train/bus interchange will be organized (Fig. 6) with frequencies up to 2 'for buses.

The seminar, which was attended by about 200 people, was concluded by **Patric Marini**, President of Venice CIFI section.

The presentations of the speakers are available on the CIFI website: <http://www.cifi.it/UplDocumenti/Verona25022021.htm>

*Dr.-Ing. Marco Broglia, CIFI*

## The attitude of SARTE towards the role and mission of the UEEIV

The Serbian Association of Railway Traffic Engineers (SARTE) perceives the role of the UEEIV in the following areas and activities, namely in:



- \* the education concerning the current things and the latest tendencies in the EU railway sector and outside that sector,
- \* the provision of information on the regulations, standards, directives and announcements of the UIC, as well as help with the procurement of the same,

- \* the organization of expert conferences within national associations and outside them,
- \* the organization of expert visits to some European railway administrations, organizations and universities,
- \* enabling "railway engineers" to achieve multidisciplinary and broader knowledge, skills and experiences needed for profiling "railway system engineers",
- \* defining stricter conditions for the certification – licensing of "Eurail Engineers", amongst which the main parameter is the achieved knowledge of a candidate as a "railway system engineer",
- \* the regulation of the status of a "Eurail Engineer" so that the status shall not be formal, nor shall it be only within

the UEEIV, but the same shall rather ensure that such an expert is recognizable in Europe and the world,

- \* defining the rights and obligations of “Eurail Engineers”,
- \* the positioning of national associations for the certification – licensing of “Eurail Engineers” and for taking state railway exams,
- \* the positioning of “Eurail Engineers” within national state unions of engineers,
- \* the implementation of the program(s) for the education of “railway engineers” at national state universities,
- \* defining the criteria of and models for the valuation of the competences of the “railway engineers” who have been educated in the same profession according to different study programs,
- \* the implementation of courses, training courses and professional developments with railway companies, railway

- component manufacturers, professional associations and other institutions registered for such an activity,
- \* the performance of the professional practical work in the EU by the students and pupils majoring in railway,
- \* lobbying for the position and interests of “Eurail Engineers”,
- \* the promotion of the railway in the media,
- \* ensuring benefits for train transportation with some European railway administrations,
- \* the formation of the social networks and public database of “Eurail Engineers” with their basic data and CVs.

*M.Sc. Traffic Eng. Danko Trninić,  
President of SARTE*

## NGSRTE: European railway policy – bridges to the future

Bulgaria to rediscover railways as a priority in the new European normality

### COVID-19 and the Railways

The World today is not the same. A sanitary crisis in 2020, for just a couple of months put any kind of policy in a “Restart” position. At the same time, a new potential of opportunities had been revealed. Pandemic situation demonstrated both the positive resource of public rail transport, and the need of sustainable mobility for post COVID-19 recovery. In the critical moments, railways maintained with resilience the level of services in spite of the dramatic fall of demand. It were the freight railways in Europe that successfully operated safely continent-wide during the very peak of the sanitary crisis. They ensured problems-free trade at a time when air, maritime and road modes were heavily affected by the Coronavirus epidemic. Under the crisis situation, benefits became visible of the continuing railway transport market liberalization. Expansion of the profitable international cargo services resulted not only in increased return on investments, but in compensation either of higher labour and energy costs caused by sanitary requirements.



Unprecedented changes in the sector emerged as priority on the recovery measures agenda. Global, behavioural and technological effects from the crisis resulted in a trend of growing demand for quantitative and qualitative “mobility indicators” which could be only supplied by public transport services. The European politicians did not miss this moment of change, and the railway mode became the backbone of the Green Deal. In order public expectations to be transformed into achievable targets, it was rather a matter of rational order of priorities, than of allocation of limited funds – public transport should be clean, safe and attractive for users. It should be also digitalized with priority and extremely flexible to respond to the market needs. However, the necessary conditions for the change include:

- \* Thinking and acting on a system level – to develop a single long-term vision
- \* Stimulating innovations by public-private partnerships to develop business & technology models
- \* Creating an unified model of mobility management to combine real time optimization of mobility flows at both urban and intercity levels

This would be just systematizing of available solutions, which have been postponed for one or another reason, but thanks

to the current crisis an opportunity has appeared for raising their implementation to the level of policy. Railway projects that can save job places and help the industry with a “fresh-air breath” under the current extreme situation, gain a continent-wide significance beyond national boundaries. Such a renewal would boost socio-economic development as a whole. When employment and personal consumption again become the driving force of economic growth, railways would play a key role, because apart to the economic recovery, they would contribute most to the achievement of the goals of the Green Deal too, and to the carbon neutral transformation of the continent by 2050.

### **Growing demand for mobility**

The modern digitalized railways are the core of the strategic plan for mobility in Europe – unified system for traffic management, unified standards for interoperability, unified European railway market. EU member states shall follow common policy for railways digitalization, development of combined transport infrastructure, and seamless border-crossing operations. UITP continuously would insist the European institutions to regard public transport as a strategic sector in the European post-COVID-19 recovery plan for its key role in boosting economy, employment, social inclusion, healthcare and sustainable development. Since a long time ago, mobility has been not only a solution of the transport problem, but offering also of a service which shall meet increasingly growing requirements of the demanding consumers. Therefore, it is a matter of improvement communication to people and facilitating access to public transport. Only through digital integration of real-time information and bringing services closer to level of personalization, the demand of “shared economy” transport products can be met. Thanks to digitalization, mobility system undergoes unprecedented radical change transforming it into an ecosystem, which would rely rather on multilateral coordination, than on hierarchical control. Digital processing of big data allows optimization of existing infrastructure use, while investing reasonably in a new or modernized infrastructure. Within such an ecosystem, railways are a system integrator with territory planning functions. By deployment of new technologies, and thanks to their proven ability to seamlessly connect intercity, suburban and urban services, railways reveal their potential to respond to demand beyond transport sector sphere – saving and transfer of energy, innovative unification of social services, real increase of leisure time value. Railways make mobility a visible and indispensable parameter of contemporary life standard, ad-

ressing at the same time the main problem of urbanized environment – the conflict between personal cars and public transport, so that they are not any more in the extreme ends of the Mobility specter, but are rather the two sides of the same coin.

Through the changed attitude to the public services, the “Corona crisis” effect on the public transport will continue long time even after cancellation of the emergency measures. Dependence on the mobility as living standard proved to be equivalent to the need of healthcare and education. Requirements to the efficiency of public rail transport increased to such an extent, that it became clear they could not be met just by new technologies. Only “Intelligent transport” can offer “Mobility on Demand” and respond to the demanded combination of “Home Office”, Temporary Mobile Office” and “Social Distance”, which are to replace commuting in rush-hours. Changes in the requirements to public rail transport as a result of the pandemic, today open an opportunity too, for accelerated investment in high speed railways – to overcome rail network fragmentation in Europe, transforming it into a continent-wide factor of integration, a real competitor to the airway services.

### **The new normality**

Recovery of economy and employment shall be accompanied by restructuring, in order to avoid the sanitary risks of concentration of people in the most densely populated areas. The “social distance” brought to life by the crisis, will impose new economic, healthcare and education reforms. Behavioural change in the labour market mobility, as well as optimization of material and energy resources, will result in structural change of public services demand on the transport market. Too high dependence on automobiles affects economic development by increasing transport costs and consumption of resources. The new normality policy is stimulating people and business to choose public transport, in order to preserve future for themselves and for the environment. It would require urgent investment to recover and modernize infrastructure. That’s a reasonable measure, because time and energy costs are the target indicators of the economy of the future, and railways are the mode which could best achieve them in the foreseeable future.

The socio-economic aspect of the global changes dynamics imposes quick action in the rail sector, so that public benefit of the Mobility as a Service would not be missed. Digitalization and automatization have proven competitiveness of rail-

ways in the multimodal networks thanks to the energy efficiency, speed and comfort advantages, as well as to the ability for integration of autonomous vehicles within the “door-to-door” services. The strategy is to eliminate noise and pollution, to improve traffic efficiency, and to reduce demand for parking, so that any transport goal is achieved with 80% less road vehicles – releasing in this way vast volumes of urban space. The objective of such a strategy is also supported by the post-pandemic recovery plans. Some EU member states are distinguished as leaders in the innovative policy of revolutionary transformations totally reshaping transport sector. These include Finland – leading the way in legislative grounding of SMART MOBILITY, or Portugal – insisting, in the capacity of European Council President State, **railways to get broad support and public pressure for implementing national investment plans for recovery and resilience.**

### **The railways – Bulgaria’s national priority**

The corona virus crisis, and the role of railways in overcoming it in Europe, suggest that in Bulgaria too, the time is ripe for large-scale and drastic change. Sustainable mobility requires dynamic planning and long-term strategy to follow a policy for development of attractive public transport based on multimodality and integrated connectivity of the transport system. Bulgarian economy has neither the financial capability, nor the resource potential to step alone forward from the crisis. Its competitiveness will be strong only as an integrated party of the European economy. This situation is a wake-up alarm for revitalizing the rail sector which could stimulate and accelerate our integration in the European economic area. Rising railways to the level of a national priority shall be in the pre-election campaigns rhetoric, because every step, every real action means politics – cohesion, regional or transport, and for their implementation public support is essential. **The greenest energy driven transport**, with proven ability to reduce urban traffic jams, offering a real competitive alternative to any type of individual or public transport, **has to play a bigger role in the growing urbanization trend. Railways** shall be much more visible in the concept for recovery and resilience of Bulgaria, including also **innovative sustainable business models for identifying long-term financial solutions.** Most important is the State to abandon the approach

of budget subsidies to maintain a “surviving unhealthy organism”, and to make a decisive move to public-private financing of a mid-term investment program for Bulgarian railways modernization. This might be an enormous shock but it’s a crisis after all, which means an opportunity giving the chance for a “Restart”! Now is the right time to overcome the specific “exclusion” of the railway from the transport & communication urban schemes, in order to improve public transport accessibility. What is more, we have even the chance to restore closed or abandoned railway lines and develop multifunctional potential of adjacent territories, so that both domestic and international connectivity of the country is improved. The focus of contemporary transport planning shall be on intermodality, as the modern mobility depends on the level of connectivity between various transport networks. More, better and faster trains would not just make railways more attractive, but would also help more people to benefit from the modern mobility and to get access to jobs, healthcare, education or culture and arts. As the transport of goods may not be separated from the movement of people, and the impact of freight on traffic and on environment has long since turned it into a public service, the system advantage of the rail infrastructure historic existence in the cities gets now strategic significance for the urban logistics. This is an integral component of the strategy for economic growth by which the focus on the bigger cities is expanded to cover the entire country.

I would hardly find today, more suitable metaphor than “bridges”. **Rail mode is our sustainable bridge to the day of tomorrow, and in order to protect our long-term interests, we shall take hold of the “smart” mobility and move over it by a very fast train.** Priority development of railways offering mobility to users at any age and any level of income would guarantee social acceptability and economic efficiency of investments, in synergy with other modes. It would probably be a matter of choice and re-evaluation of costs and investments, but railways are a public service, so the State and the Society shall decide how this sector viability is to be maintained on the transport market. On its viability would depend Bulgarian economy’s competitiveness within European Union, but to a certain extent also Europe’s success in the global competition with the rest of the World.

## Editor's information

Dear readers,

REPORT 2022 will be my last (sixth) issue.

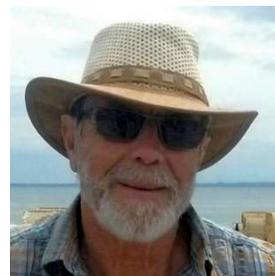
The President and I symbolically take off our hats after the meeting of the General Assembly in Münster and hand over the responsibility we have borne so far to younger people.

In the more than 30 years since the founding of the UEEIV, I have given my best in various positions and made really good friends.

I have always been supported by my colleagues in the Presidium. And for many years as editor of REPORT, especially

Claudia Kaufmann, the strong woman and manager in the background, and Richard Spoons, my English teacher.

I thank everyone for the wonderful time and wish those who remain good work for the continuity of the UEEIV, which is so important for railway engineers, the railways, the railway industry and research and teaching in Europe.



*Honorary member Dr. Bernd Neumann*

## Calendar of events 2022

Status: 07.12.2021

- |                   |              |   |  |
|-------------------|--------------|---|--|
| 3. – 5.. April    | Graz/Austria |  | 47 <sup>th</sup> Conference „Modern Rolling Stock“<br><a href="http://www.schienefahrzeugtagung.at">www.schienefahrzeugtagung.at</a>                               |
| 31. May -         | Münster/DE   |  | General Assembly   |
| 31. May - 02. Jun | Münster/DE   |  | 28 <sup>th</sup> <b>iaf</b> , the largest international exhibition for track technology<br><a href="http://www.iaf-messe.com/en/">http://www.iaf-messe.com/en/</a> |
| 20. – 23. Sept    | Berlin/DE    |  | <b>InnoTrans 2022</b> , the leading international trade fair for transport technology<br><a href="https://www.innotrans.de/en/">https://www.innotrans.de/en/</a>   |

For more information see:



[www.ueeiv.eu](http://www.ueeiv.eu)

<https://www.vdei-akademie.de/themenfelder.html>

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*Please let us know immediately if your contact details change.*

*We would also appreciate any suggestions and contributions for our next **UNION REPORT**.*

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