



# **Train Control & Monitoring System UNIFE's achievements and perspective**

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[www.unife.org](http://www.unife.org)

- 1. About UNIFE**
- 2. About the UNIFE TCMS Topical group and interaction with CENELEC**
- 3. Past activity in R&D**
- 4. Current activity in R&D**
- 5. TCMS in the Rail Joint Technology Initiative (JTI) proposal**

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### UNIFE represents the European Rail (Supply) Industry

- Based in Brussels since 1992
- 22 permanent employees
- A trusted partner of the **European institutions** in all matters related to rail and transport
- **Full members: 77** of the largest and medium-sized companies in the rail supply sector
- **Associated members: 16** National Associations, representing almost 1,000 suppliers of railway equipment + EFRTC and UNISIG
- UNIFE members have an **80% market share in Europe** and supply more than **50% of the worldwide production** of rail equipment and services.







Sub-system suppliers



Signalling



Other



- 16 national rail industry associations from 14 different countries representing 1000 companies



ACRI



AGORIA



AIT



Assifer

ASSOCIAZIONE INDUSTRIE FERROVIARIE



french railway industry association



Holland Rail Industry



MAFEX



Railway Industry Association



SIRTS



SWEDTRAIN



SWISSRAIL  
Industry Association



BAHNINDUSTRIE.at  
Verband der Bahnindustrie



DIE BAHNINDUSTRIE.  
VDB VERBAND DER BAHNINDUSTRIE IN DEUTSCHLAND E.V.



ZVEI



RAYDER  
Raylı Ulaşım Sistemleri Derneği



RASTIA  
Association for Railway Automation,  
Signalling, Telecommunication and Industry

- Other associated members



EFRTC



UNISIG

European Federation of Railway  
Trackworks Contractors

- ***Mission: Promote rail market growth for sustainable mobility.***
  
- **Four priorities to achieve the mission:**
  1. **Promote European policies favourable to rail**
  2. **Shape a European interoperable and efficient railway system**
  3. **Ensure European rail supply industry leadership through advanced research, innovation and quality**
  4. **Provide UNIFE members with strategic and operational knowledge**

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**TG Aerodynamics**  
**TG Brakes**  
**TG Crash safety**  
**TG EMC**  
**TG Cab**  
**TG Chemical Risk**  
**TG Cross Acceptance and Certification**  
**TG Diesel**  
**TG Energy Efficiency**  
**TG Fire safety**  
**TG Maintenance**  
**TG Noise**  
**TG PRM**  
**TG Life Cycle Assessment**  
**TG Railway Dynamics**  
**TG TCMS**

**MG Certification of maintenance workshops**  
**MG Energy**  
**MG Infrastructure**  
**MG Rolling Stock**  
**MG Safety Assurance**  
**MG TAP (telematic applications  
for passengers)**  
**WG Wagon**

## 2. About the UNIFE TCMS Topical group and interaction with CENELEC

- The UNIFE Train Control & Monitoring System topical group is one of the more active topical group
- **Members** : Actia Sodielec, Alstom, AnsaldoBreda, Bombardier, CAF, Eke Electronics, FAR Systems, Harting, Knorr Bremse, Siemens, Talgo, Unicontrols, VDS, CAF, Faiveley
- This topical group is especially active the field of standardisation at both CENELEC and IEC level.
- Most of the members companies are also represented in these two international committees.

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### ■ **Rosin: 1996 - 1999**

- Scope: Specification and validation of a complete train network platform, open to other systems and to any kind of suitable applications
- Impact: use of the TCN in Europe

### ■ **Traincom: 2000 – 2004**

- Scope: Integration of railway and ICT to link train and ground systems, allowing to develop new interoperable applications
- Impact: demonstration of locomotive interoperability and demonstration of dynamic passenger information

### ■ **Modtrain: 2004 - 2007**

- Scope: Specification of subsystems and interfaces for a modular train architecture
- Impact: Common FBS, common safety approach, standardised functions

### ■ **Integrail: 2005 - 2008**

- Scope: Integration of railway systems by means of intelligent interfaces and processes
- Impact: Comprehensive communication architecture from ground to train

- **ETCOM: FP7 2<sup>nd</sup> call (2008)**

- **Scope: Ethernet Train Communication.** Development and proposal to standardisation of the next generation of a common train communication system with high capabilities and performances which will allow interoperability between railway applications.

- **Consortium:** Alstom, AnsaldoBreda, Bombardier, CNC, CAF, DB, Duagon, F.A.R. Systems, Faiveley, Knorr-Bremse, Selectron, Siemens, CFR, SNCF, Traintic, Trenitalia, UniControls, UIC, Trento University, Polytechnic University of Bucharest, Westinghouse Brake and Signal

- **FOCUS: FP7 4th call (2010)**

- **Scope:** FOCUS' main aim and concept is to investigate and demonstrate the viability of functional open coupling to allow the set up of train compositions that keep as a whole all the functionalities of each of the consists of which they are made.

- **Consortium:** UNIFE, Alstom, AnsaldoBreda, ATOC, Bombardier, CAF, DB, FAR Systems, INRETS, Newcastle University, Siemens, SNCF, Trenitalia, UIC, Unicontrols

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- **PRINCE: FP7 5th call (2011) - PRofiles for INterChangeability of railway End devices**
- **Scope:** define a standard framework for interoperability and interchangeability of railway end devices at LRU (Line Replaceable Unit) level
- **Project to be submitted to the European Commission in December 2011**

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- UNIFE and its members are currently working on a proposal for rail joint technology undertaking to be submitted to the European Commission.
- Joint Technology Initiatives are proposed as a means to implement part of the Strategic Research Agendas (SRAs) of a limited number of European Technology Platforms (ETPs) – ERRAC for the rail sector
  - Targeted research programmes, as a Public-Private Partnership
- An instrument that will allow the supply industries to invest R&D budget in a common European framework for:
  - Comprehensive technology demonstrators allowing a faster implementation of innovative technologies into final products

- Through a **joint integration of prototypes** of advanced technologies into:
  - full scale **system demonstrators**,
  - agreed **standard system architectures** while allowing individual solutions
  
- The next generation of Train Control and Monitoring System is to be included as part of the future R&D programme of this initiative.



***Promote rail market growth for  
sustainable mobility.***

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