



UIC ACTIVITY REPORT **2024**



INTERNATIONAL UNION
OF RAILWAYS



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OF RAILWAYS

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FOREWORD FROM **DR. ALAN BEROUD,** **UIC CHAIR**

**“TOGETHER, WE WILL ACCELERATE
THE PROGRESS OF RAILWAYS AS A
CORNERSTONE OF MOBILITY SOLUTIONS
WORLDWIDE.”**

As we stand at a critical juncture for global transport and climate action, the International Union of Railways emerges not only as a technical platform but as a pivotal driver of transformative change. Under the leadership of PKP as Chair, UIC is positioned to shape the future of rail as the backbone of sustainable mobility worldwide.

Railways represent a unique meeting point for technology, infrastructure, and public policy, offering unparalleled opportunities to deliver clean, efficient, and inclusive transport solutions. Today's challenges, from decarbonisation to digitalisation, from urban congestion to social equity, call for a bold outlook and coordinated global action. It is precisely here that UIC's mission gains profound strategic importance.

Over the past year, UIC has reinforced its role as the voice of the international rail community, advocating for policies that prioritise rail investment and innovation within the broader transport sector. By fostering cooperation, UIC drives the alignment of technical standards with ambitious policy frameworks, aiming to achieve climate neutrality and ensure resilient railway infrastructure.

One of the most urgent, but also promising endeavours under our stewardship is accelerating the deployment of the Future Railway Mobile Communication System (FRMCS). This next-generation digital communications platform is more than a technological upgrade; it is a critical catalyst for interoperable, intelligent, and highly efficient rail networks that can meet future transport demands and safety targets. Achieving the widespread adoption of FRMCS requires policy support and transnational cooperation of an ambitious nature, both of which UIC actively champions.

Furthermore, UIC is committed to positioning railways at the heart of the global green transition. Through coordinated research, innovation, and knowledge sharing, the organisation has fostered breakthroughs in energy efficiency, alternative traction, and system integration that directly contribute to reducing carbon emissions. This collective approach empowers members to accelerate their climate targets while also reinforcing rail's competitive edge in a multimodal transport landscape.



In terms of governance and strategic orientation, PKP's chairmanship has emphasised transparency, inclusiveness, and adaptability, qualities essential for navigating the complexities of the 21st-century transport sector. By enhancing member engagement and strengthening operational excellence, UIC is better equipped to respond to emerging challenges and seize new opportunities across different regions and markets.

Looking to the future, our vision is clear: to create a unified, forward-looking rail sector that supports sustainable development goals, fosters innovation, and drives policy coherence at all levels. UIC will continue to serve as the indispensable platform for dialogue, technical leadership, and policy advocacy, bringing together all stakeholders who are committed to a future where rail is central to economic prosperity, environmental stewardship, and social well-being.

PKP is honoured to guide UIC through this transformational era. Together, we will accelerate the progress of railways as a cornerstone of mobility solutions worldwide, shaping a cleaner, smarter, and more connected world for generations to come.

FOREWORD FROM **FRANÇOIS DAVENNE,** **UIC DIRECTOR GENERAL**

“UIC IS BOTH A TECHNICAL LEADER AND VISIONARY ADVOCATE FOR SUSTAINABLE, INCLUSIVE, AND RESILIENT TRANSPORT.”



In today's fast-changing transport environment, railways are more vital than ever for sustainable mobility. To respond to this, UIC is leading the sector's transformation by driving innovation, fostering collaboration, and advocating for policies that make rail a cornerstone of decarbonised and inclusive transport worldwide.

In 2024, UIC demonstrated strong leadership through initiatives such as the “More Trains” campaign and the *Bridging the Rail Finance Gap* study, highlighting our commitment to equitable and sustainable mobility. Growing membership numbers and renewed strategic partnerships further reflect our expanding global influence.

On an operational front, we have improved our transparency and efficiency with a consolidated profit and loss statement and an advanced platform for opt-in projects. Our balanced 2023 budget, exceeding targets, shows sound financial management and high levels of trust from our members.

On a technical level, UIC continues to lead in standardisation and innovation. Delivering FRMCS Version 2 drafts to the EU Agency for Railways (ERA) and coordinating

the MORANE 2 testing programme have underpinned our pioneering role in this field, supported by active participation in Europe, Asia-Pacific, and Africa.

Central to our strategy is also empowering regions. To this end, Regional Competence Hubs, backed by the African Union and African Development Bank, will drive innovation with clear roadmaps and dedicated coordinators.

Looking to 2026-2028, we will focus on strengthening regional projects by mapping out and responding to member needs, monitoring initiatives, and launching bilateral programmes, such as FRMCS field tests and 5G developments. Moreover, we will maintain robust global standards and foster cooperation with other bodies.

We will drive innovation, deliver tailored solutions, and support our members in adapting to rapid changes in the industry. Advocating for a transport paradigm shift, we aim to grow rail's market share through partnerships, policy advocacy, and diversified investments.

The Open Sales and Distribution Model (OSDM) highlights our focus on passenger-centric solutions, simplifying multimodal ticketing to enhance accessibility and the overall customer experience, which is key to boosting rail's competitiveness.

UIC will also expand its role as a service centre by developing training courses and sessions through the Rail Academy and providing rail-specific digital services. These strategies will be refined throughout 2025 to keep UIC at the forefront of technical progress, operational excellence, and sustainable growth.

Our preparations for the 2025 UIC World Congress on High-Speed Rail in Beijing, China, embody this vision, uniting global expertise, partnerships, and innovation to shape rail's future. Today, UIC is both a technical leader and visionary advocate for sustainable, inclusive, and resilient transport.

The rail sector stands at a crossroads. It is uniquely positioned to deliver transformative solutions to combat climate change, improve connectivity, and foster economic growth. Through cooperation, innovation, and leadership, we are building the future of sustainable mobility.

Mission, key facts and figures

In an era where the world is in urgent need of sustainable, resilient, and inclusive transport solutions, the International Union of Railways (UIC) stands as a global reference point for rail's contribution to the future of mobility.

As the technical body and voice of the rail sector worldwide, UIC actively shapes international policies, fosters innovation, and supports its members in addressing the most pressing global challenges, from climate change to digital transformation, from interoperability to capacity-building.

UIC advocates for rail as a key solution for decarbonising transport, achieving the Sustainable Development Goals (SDGs), and building resilient infrastructure worldwide. With its over 200 members spanning six regions around the world, UIC ensures that the rail sector speaks with a unified voice in global policy forums, including at the United Nations, COP climate summits, the African Union, and international financial institutions. Through instruments like the *Nationally Determined Contribution (NDC) Template for Rail*, UIC provides governments with concrete methods to integrate rail into their climate action strategies.

At the heart of UIC's work is its role as an innovation catalyst, transforming research into practical solutions. Flagship projects such as the Future Railway Mobile Communication System (FRMCS), the Open Sales and Distribution Model (OSDM) for seamless ticketing, and the Digital Automatic Coupling (DAC) for freight will revolutionise how railways operate, making them safer, smarter, more efficient, and more passenger centric. UIC's partnerships with major global R&I programmes, such as Europe's Rail Joint Undertaking (EU-Rail), the International Rail Research Board (IRRB), and multiple regional innovation hubs, allow its members to stay at the forefront of technological change.

UIC also plays a critical role in harmonising global standards through the publication of International Railway Solutions (IRSs), ensuring cross-border interoperability and safety while facilitating international traffic and market integration.

Beyond this, UIC is also committed to building rail capacity worldwide, equipping the sector's workforce to meet the challenges of tomorrow through its Rail Academy and capacity-building programmes, and supporting the next generation of railway experts.

UIC's mission is ultimately one of partnership: to unite rail stakeholders, including governments, operators, infrastructure managers, suppliers, researchers, financial institutions, and civil society, around a shared vision of rail as the backbone of future-proof mobility. Through its leadership, UIC is helping to position rail not only as a technical solution, but as a driver of economic prosperity, social inclusion, and global climate resilience.

**UIC'S WORK IS ANCHORED IN A CLEAR MESSAGE:
"IF THE WORLD IS SERIOUS ABOUT SUSTAINABLE
MOBILITY, RAIL MUST BE AT THE CENTRE
OF THE SOLUTION".**

NORTH AMERICA

8
MEMBERS

Canada
Mexico
United States
of America

LATIN AMERICA

7
MEMBERS

Argentina
Brazil
Chile
Colombia

10,000
billion
tonne-kilometres

219
members in
84 countries

121
MEMBERS**EUROPE**

Austria
Belarus
Belgium
Bosnia and
Herzegovina
Bulgaria
Croatia
Czechia
Denmark
Finland

France
Germany
Greece
Hungary
Ireland
Israel*
Italy
Latvia
Lithuania
Luxembourg

Montenegro
Netherlands
North
Macedonia
Norway
Poland
Portugal
Romania
Russian
Federation*

Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Türkiye*
Ukraine
United
Kingdom

AFRICA**25**
MEMBERS

Algeria
Burkina Faso
Cameroon
Democratic
Republic of
the Congo
Egypt
Ethiopia
Gabon
Ivory Coast
Kenya

Libya
Mauritania
Morocco
Niger
Senegal
South Africa
Sudan
Tunisia
United
Republic of
Tanzania

16
MEMBERS**MIDDLE-
EAST**

Afghanistan
Iran (Islamic
Republic of)
Iraq
Israel*
Jordan
Oman

Saudi Arabia
Syrian Arab
Republic
Türkiye*
United Arab
Emirates

51
MEMBERS**ASIA
PACIFIC**

Armenia
Australia
Azerbaijan
China
Chinese
Taipei
Georgia
India
Japan
Kazakhstan

Malaysia
Mongolia
Philippines
Republic of
Korea
Russian
Federation*
Thailand
Vietnam

*Members with dual regional membership.

**Considering these dual regional memberships, the total number of UIC Members is not equal to the number of members from each region.

131

technical groups,
monitoring 8 special
groups projects

2,000
experts**70**

partnerships

1

million
kilometres of line

3

fora

7

million
rail personnel

50

events per year

23

sectors

3,000

billion
passenger-kilometres

7

platforms

June 2025

UIC Governance



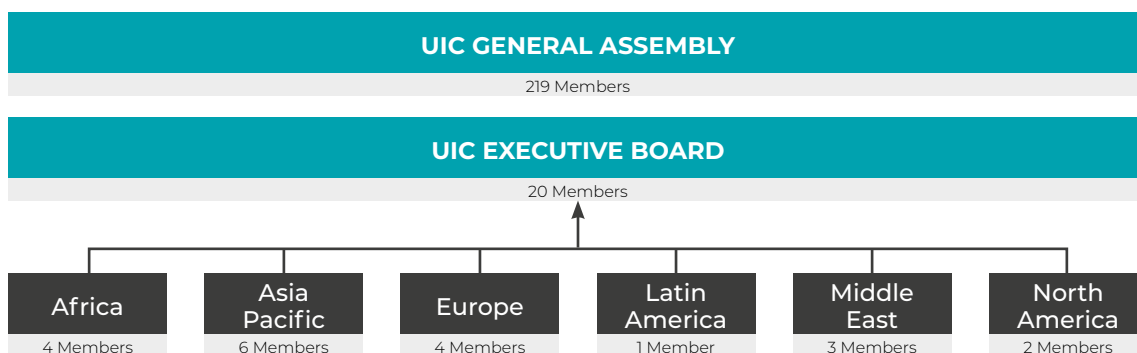
Mohamed Rabie Khlie
VICE CHAIR (ONCF)



Dr. Alan Beroud
CHAIR (PKP)



François Davenne
DIRECTOR GENERAL



UIC's activity



Dialogue platform focusing on members' challenges

- Sharing of best practices
- Exchanges of information
- Experiments, joint studies, POCs, etc.



Specifications / Reports / Solutions

- Contributing to TSIs and standards
- Railway best practices
- Application guidelines
- Online tools and databases
- 398 UIC Technical Documents



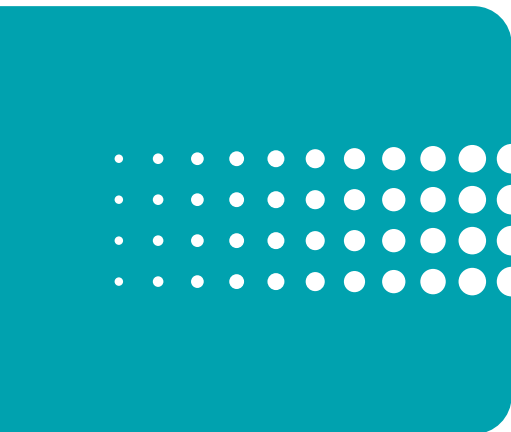
Training courses and conferences

- Courses on cutting-edge topics
- Conferences on areas of interest (Asset Management, GSM-R, FRMCS, civil engineering structures, railway tracks, High-Speed, Railway Stations, Rail Tourism, Regional Trains, Ticket Distribution etc.)

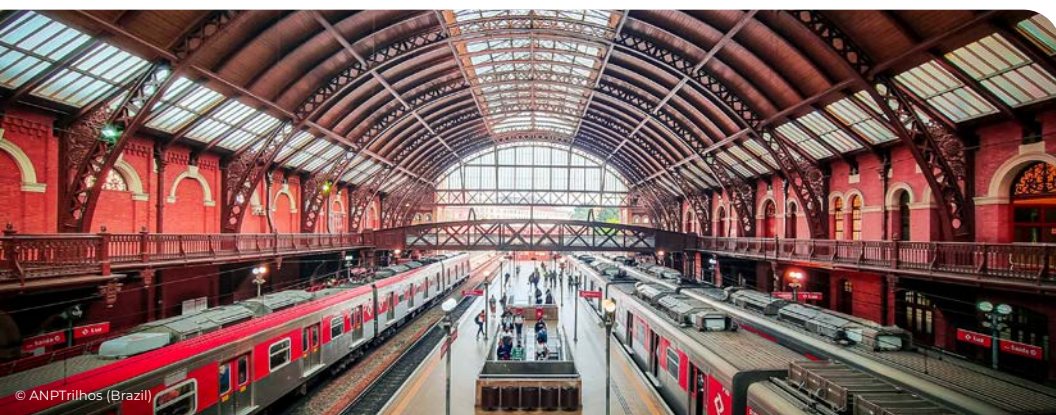
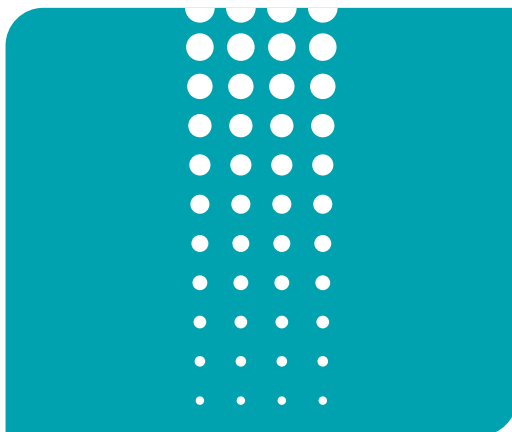


Working groups and joint projects

- Shared projects to address the strategy defined by the members
- Internal and external working groups with railway members



UIC in focus: highlights of 2024



Key highlights from 2024

Innovation and strategic partnerships

Aligned with the UIC Work Programme 2023-2025, UIC actively worked on several initiatives throughout 2024 to promote advanced engineering studies that supported its members in unlocking rail's full potential for the future. In light of rapid technological progress, particularly in digitalisation and sustainable development, efforts focused on building collaborative networks across the railway sector. These bring together professionals from the Railway Operating Community (ROCs) alongside the scientific and research communities, including universities and research institutes.

Looking forward, these initiatives will expand to include Small and Medium-sized Enterprises (SMEs), as well as startups. Cooperation on research and innovation-driven engineering was enhanced, with the clear objective of preserving the ROC's competitiveness, resilience, and cost-efficiency. As part of this, digitisation and innovation are seen as key catalysts for modularisation, resolving interoperability challenges, and addressing capacity constraints, while also continuing to make progress towards decarbonisation.

In a world shaped by rapid technological advancements and new opportunities, the railway sector has increasingly recognised the importance of regional cooperation for sustainable and effective development.

In 2024, further progress was made within the International UIC Railway Research Board (IRRB) to establish Regional Competence Hubs (RCHs) to drive innovation at the regional level within the framework of UIC activities. An important step in further developing RCHs in all UIC regions is defining strategic objectives for each region based on the UIC's strategic focuses for 2026-2028. This process should involve members and be supported by the relevant UIC Coordinator for each region.

These hubs aim to develop UIC-coordinated regional stakeholder networks, facilitating knowledge and best practice sharing. Through a two-level approach, working within each region and linking them globally, these hubs will provide robust support to members striving for excellence in research and innovation. This model is especially important to help members anticipate and manage unforeseen challenges such as consequences due to climate change and regional skills shortages. By leveraging a deeper understanding of the needs in different regions and existing capabilities worldwide, these hubs will enhance the sector's collective intelligence to drive railway development on a global scale.

These efforts also spurred numerous regional and global initiatives and strategic partnerships in 2024. Notable partnerships include sessions with the World Bank, the European Commission, the African Union Commission, and the European public-private partnership Europe's Rail Joint Undertaking (EU-Rail).

OPENRAIL ON TRACK IN 2024



JANUARY 2024

LAUNCH OF AUDIT4ALL PROGRAMME



FEBRUARY 2024

UIC REPORT ON AI IN RAILWAYS



FEBRUARY 2024

NEW FRMCS TRAINING SCHEDULE



FEBRUARY 2024



© SNCB (Belgium)

As part of the latter, UIC and its European members contributed to flagship projects, advancing innovation and system integration.

During the General Assembly in December 2024, these regional and interregional partnerships which focused on innovation were formally recognised.

Interregional cooperation was underscored as a crucial catalyst for sharing expertise and tackling global challenges. Moreover, leaders emphasised the importance of strengthening bridges between regions to accelerate progress and maximise the impact of innovation work.

These developments further support UIC's approach to building Regional Competence Hubs, which will offer lasting benefits to all members by reinforcing innovation across the global railway network.

Other 2024 highlights featured key events bringing together the scientific community and railway professionals to shape the sector's future. Notably, UIC and its members have been preparing the 14th World Congress on Railway Research (WCRR), scheduled for November 2025 in Colorado, USA, a major milestone for research and innovation dialogue worldwide.

Among other flagship initiatives, laying the groundwork for future collaborative research and advanced engineering studies, are advocacy efforts such as those led by the Research and Innovation Coordination Group (RICG) in Europe.

In September 2024, the European Rail Research Advisory Council (ERRAC) published the ERRAC Rail Research Innovation Agenda (RRIA). RICG's policy work on the "Future capabilities of the European railway system" is also influenced by this, and forms a key basis for the upcoming European Union Multiannual Financial Framework (MFF). While this is a regional example, it represents just one part of a broad portfolio of advocacy activities promoting railway innovation globally, implemented across various UIC platforms and through the International Railway Research Board (IRRB).

Rail sector innovation projects driven by UIC

UIC conducts unique development and benchmarking on a global scale thanks to its regional structure and worldwide overview of railway development.

Since its founding in 1922, UIC has played a key role in harmonising technical standards and operating rules to enhance interoperability and best practice sharing worldwide. This foundational strength continues to underpin the activities of UIC's future competence hubs.

In 2024, UIC led several initiatives, including working within Europe's Rail Joint Undertaking (EU-Rail), a public-private partnership supporting research and innovation in the European railway sector, helping design a unified European railway system architecture. Ongoing work aims to refine this technology-neutral model, enabling rapid adoption of innovations in, for example, digitisation, artificial intelligence (AI), and telecommunications.

UIC PROMOTES RAIL AHEAD OF COP30



MARCH 2024

MAINTENANCE SEMINAR HELD IN FENERBAHÇE



MARCH 2024

SWEDEN LAUNCHES RAIL TICKETING MODEL



APRIL 2024

UIC AT TRANSFORMING TRANSPORTATION



APRIL 2024

Aligned with its UIC Rail's Vision 2030 "Design a better future", over the year, UIC has emphasised strengthening its innovation projects through regional cooperation. In this, UIC supported its members by enhancing knowledge sharing, and building expert networks focused on the impact of climate change on transport and critical railway infrastructure.

UIC also launched major campaigns like "More Trains" to promote funding for collaborative research targeting decarbonisation, increased rail capacity, and improved operational efficiency, making rail transport safer and more sustainable through digitalisation and simplified system architecture.

Recognising the critical role of human capital, UIC expanded capacity-building initiatives via its Rail Academy and new workforce development programmes, integrating research and innovation (R&I) efforts with upskilling and attracting talent in partnership with universities. This led to the launch of a transversal initiative "Enhancing Railway Innovation through Capacity Building of the Workforce".

UIC also actively monitored progress in Rail Joint Undertaking (EU-Rail) projects, being directly involved in 12 Innovation Pillar projects and five out of six System Pillar tasks.

A highlight was the Future Railway Mobile Communication System (FRMCS), a new digital platform set to modernise global railway operations. Within this, UIC coordinated the "Morane 2" project, launched in December 2024, bringing together laboratories, railways, suppliers, and network operators to drive FRMCS deployment.

Other key projects included the Open Sales and Distribution Model (OSDM) to simplify ticketing, Digital Automatic Coupling (DAC) as a critical catalyst for rail freight automation and decarbonisation, and Performance and Safety Management Systems (PRAMSS) and Control Command and Signalling Plus (CCS+) initiatives to improve performance, safety, and interoperability.

UIC also furthered digital modelling efforts via the Railway System Model (RSM) and OntoRail projects, striving towards a common data model for railways, and explored trusted artificial intelligence (AI) and digital applications to enhance predictive maintenance and decision-making.

The Resilient Railways Facing Climate Change (RERA) programme addressed changing conditions due to global warming, focusing on extreme weather events such as temperature fluctuations, earthquakes, and heavy rainfall.

In 2024, UIC contributed to major international events such as the Transport Research Arena (TRA 2024) in Dublin and prepared for upcoming international conferences including the 12th UIC World Congress on High-Speed Rail in Beijing and the 14th World Congress on Rail Research in Colorado Springs, both to be held in 2025.

These platforms offer vital opportunities for industry leaders to share innovation and tackle future transport challenges. Therefore in 2024, UIC and its members reaffirmed rail's leading role in driving innovation, sustainability, regional cooperation, and standardisation for the future.

ASIA-PACIFIC MEETINGS

Seoul



APRIL 2024

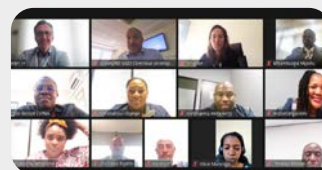
ZERO WASTE RAILWAYS WORKSHOP

Zurich



APRIL 2024

LAUNCH OF AFRICA SAFETY TASKFORCE



MAY 2024

1ST AIR+HSR WORKSHOP



MAY 2024

Progress on the 2023-2025 Work Programme

The rail sector stands at a crossroads, uniquely positioned to deliver transformative solutions to combat climate change, improve connectivity, and enhance economic growth. In alignment with its global strategy, the *UIC Work Programme 2023-2025*¹ continues to play a pivotal role in helping to realise UIC's mission of driving sustainability, innovation, and connectivity across the rail sector by focusing on the main structural areas.

On top of its technical projects, UIC's leadership in sustainability and advocacy efforts around the world were particularly emphasised at COP29, where UIC presented its *Nationally Determined Contribution (NDC) Template for rail*², which guides governments in integrating ambitious rail targets into their climate change strategies. These achievements were complemented by the publication of the *UIC Resilient Rail*³ and *UIC Carbon Markets and Rail white papers*⁴, as part of the negotiation outcomes.

Regional development remained a cornerstone of UIC's strategy, as the Africa Integrated High-Speed Railway Network (AISHRN) flagship initiative shows, demonstrating the power of regional support in driving trade and connectivity. In the Asia-Pacific region, new projects focus on innovation and sustainable transport, while Europe continues to prioritise digital transformation, high-speed rail, and seamless ticketing. Moreover, the Middle East and Latin America regions are deepening their participation in UIC Opt-in projects, fostering innovation and knowledge sharing across regions.



As part of the UIC Standardisation Strategy 2030, progress has been made on the migration of UIC's technical leaflets to International Railway Solutions (IRSs), to enhance the usability and adoption of these standards to meet different needs within the industry. The strategy aims to modernise technical documentation and support interoperability and is essential for aligning rail systems worldwide, ensuring seamless cross-border operations while also fostering innovation.

In summary, UIC has reached notable milestones in recent months. Nevertheless, there is still work ahead, to drive the sector forward and achieve the rail community's future goals. To do this, ongoing collective efforts through cooperation, innovation and leadership are still needed to shape a rail sector that is resilient, inclusive, and visionary, ready to meet the challenges of tomorrow.

1. uic.org/IMG/pdf/uic_work_programme_2023-2025.pdf

2. uic.org/events/IMG/pdf/rail_in_nationally_determined_contributions_ndcs_vfinal.pdf

3. shop.uic.org/en/search?s=Resilient+Railways

4. uic.org/events/IMG/pdf/carbon_credits_white_paper.pdf

NEW UIC-ERA SAFETY CULTURE ANNEX



MAY 2024

UIC AT ITF 2024 HIGHLIGHTS



MAY 2024

MIDDLE EAST ASSEMBLY

Jordan



JUNE 2024

TRESPAD AND ILCAD CONFERENCES

Buenos Aires



JUNE 2024

Regional achievements and empowerment

Highlights from Europe, Africa, Asia-Pacific, the Middle East, and the Americas

Europe: A strategic pillar for UIC

The Europe Region remains a core foundation for UIC, both in terms of its substantial membership base and its leadership in project development. Representing approximately 55% of UIC's global membership, the region continues to play a central role in driving forward the organisation's work.

In 2024, UIC's commitment to strengthening collaboration with members, institutional partners and the next generation of rail professionals was reflected in a variety of initiatives across Europe, designed to promote dialogue and exchange. Among these were the UIC Days and Exchanges, which brought together representatives at different organisational levels. In particular, a full-day event in Finland gathered stakeholders from across the transport sector, with a dedicated discussion being held with Slovenian Railways (SZ), and bilateral meetings being organised with entities such as Rail Baltica and Hungarian State Railways (MÁV). On-site visits and management-level discussions also took place, focusing directly on topics raised by members to ensure that their priorities continue to shape UIC's work.

UIC further reinforced its cooperation with key sector partners at both bilateral and multilateral levels. Regular coordination meetings were held with the Community of



European Railway and Infrastructure Companies (CER) and the European Rail Infrastructure Managers (EIM) to align work programmes on strategic and technical issues. In addition, UIC actively contributed to the work of the CER/European Union Agency for Railways (ERA) Steering Unit and the Group of Representative Bodies (GRB), which foster joint work on regulatory and operational matters and ensure consistency across the sector.

In 2024, the Europe Region placed particular emphasis on outreach to young professionals and academic institutions, promoting the rail sector and addressing transversal challenges such as sustainability and digitalisation. These efforts contribute to building future capacity and drawing in talent for the sector.

In 2024, the Europe Region implemented an updated business strategy and roadmap aiming to maximise value for its members. European-led UIC projects have had a considerable impact, producing innovative solutions that not only advance technical standardisation but are also replicable for members in other regions around the world. At the same time, developments in other UIC regions have sparked interest and adoption among European members, demonstrating the importance of global knowledge sharing.

10TH ATTI ASSEMBLY AND ANNIVERSARY

Paris UIC HQ



JUNE 2024

LATIN AMERICA MID-TERM MEETING

Buenos Aires



JUNE 2024

FIT FOR FREIGHT SPRING DAYS 2024

JUNE 2024



104TH UIC GENERAL ASSEMBLY

Lisbon



JULY 2024



This year, to better coordinate efforts and amplify impact, the European Management Committee (EMC) was repositioned as the region's strategic body. Initially chaired by Luigi Ferraris, CEO of Italian State Railways (FS), and subsequently by Stefano Antonio Donnarumma, also CEO of the FS Group, the EMC brought together top-level executives from major European railways. Under their leadership, the EMC focused on aligning UIC activities with key strategic priorities, including enhancing passenger mobility, strengthening European connectivity and integration, positioning rail as a resilient backbone for transport and economic growth, promoting a modal shift to rail for both passengers and freight in support of climate goals, and ensuring financial sustainability of the sector.

Among the priority topics addressed in 2024 was the development of the FS-sponsored Digital Twins. This work aims to develop digitally integrated infrastructure alongside physical assets, enabling more efficient operations through enhanced data sharing and interoperability. The EMC acted as an incubator for a dedicated expert group, which produced a comprehensive report analysing current UIC member activities, mapping related EU-level standardisation

initiatives, and providing strategic recommendations to ensure interoperability and establish a common digital lexicon. This work has now been incorporated into a dedicated project within UIC's Rail System Department.

Ticketing was another major focus, sponsored by the German Railways (DB). The objective was to ensure that the updated Telematics Technical Specification for Interoperability (TSI) incorporates the Open Sales and Distribution Model (OSDM) as the rail ticketing standard, promoting efficient and interoperable ticketing across Europe. Through strategic alignment and coordination within the EMC, significant progress was achieved, and member companies committed to implementing OSDM standards within their organisations.

The Future Railway Mobile Communication System (FRMCS), sponsored by UIC, was also a prominent featured. The goal is to develop functional specifications that will replace Global System for Mobile Communications – Railway (GSM-R) technology and ensure their integration into the 2027 TSI revision cycle. Given the system-wide implications, the active engagement and support of European railway decision-makers remain essential to secure the development and harmonised implementation of the new communication system.

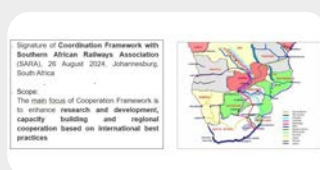
The workshops held in 2024 laid a strong foundation for the region's strategic focus in 2025. These key priorities include resilience (sponsored by the Polish State Railways (PKP)), standardisation (sponsored by the National Railways of France (SNCF)), and finally quality and robustness (sponsored by the National Railway Company of Belgium (SNCB)). These demonstrate the region's ongoing commitment to delivering tangible, high-impact outcomes for its members and for the sector as a whole.

4TH FRMCS PLUGTESTS ON TRACK



JULY 2024

UIC & SARA SIGN COOPERATION FRAMEWORK



SEPTEMBER 2024

UIC ON RAIL & TOURISM FOR WORLD TOURISM DAY 2024



SEPTEMBER 2024

UIC SUSTAINABILITY AWARDS 2024



OCTOBER 2024

Africa: **Building the foundations for continental rail integration**

UIC continues to strengthen its collaboration with the African Union Commission (AUC) reaffirming its readiness to work jointly on the deployment of a regulatory framework and TSIs for railways across the continent. This partnership directly contributes to the successful implementation of the African Union's long-term vision for the continent's development through its *Agenda 2063*.

In parallel, cooperation is advancing with the transport programmes of eight AUC Regional Economic Communities (RECs). A milestone in this effort was the signing of the first cooperation agreement with the Southern Africa Railways Association (SARA), a subsidiary of the Southern African Development Community (SADC), one of the RECs.

Advocacy efforts have also helped bring the African Railway Community into the spotlight. A series of webinars, covering key topics such as security, the role of women in rail in Africa, and rail's contribution as an efficient and sustainable transport solution, have engaged hundreds of participants, fostering dialogue around the region's priorities.

The 3rd African Rail Digital Congress, held in Yaoundé, Cameroon, showcased successful digital innovations already in use across the continent. It also explored upcoming developments, including emerging technologies such as 5G for rail, multimodal ticketing solutions, and the growing use of artificial intelligence in driving the sector's digital transformation, which is recognised as a key facilitator for achieving the Agenda 2063 objectives.



Alongside these high-level initiatives, the region has also focused on a range of operational and technical workstreams. These include dedicated training sessions and the establishment of taskforces addressing safety, narrow-gauge infrastructure challenges, and security issues. Engagement with financial institutions has also intensified, with a memorandum of understanding (MoU) under discussion with both the African Development Bank (AfDB) and the Islamic Development Bank (IsDB), while ongoing collaboration continues with the World Bank under the framework of the existing MoU.

2023 GLOBAL RAIL SUSTAINABILITY REPORT



OCTOBER 2024

ASIA-PACIFIC MEETINGS

Berlin & online



OCTOBER 2024

NORTH AMERICA ASSEMBLY ON HSR & DIGITAL



OCTOBER 2024

RAILWAY PUBLICATIONS AWARDS 2024

Paris UIC HQ



OCTOBER 2024

Asia-Pacific: Driving growth, innovation, and regional connectivity

As the second largest region within UIC, the Asia-Pacific members were highly engaged and collaborative throughout 2024. Under the leadership of APRA Chair Han Moon-Hee, CEO of Korean Railways (KORAIL), the region pursued a strategic agenda structured around four core pillars: safety, sustainability, growth, and expansion. These priorities guided the region's activities and defined its contributions to UIC's overall work programme.

The regional opt-in projects (ROP) also reflected these ambitions, with a total of €240,000 allocated from regional membership fees to support targeted initiatives. Among the key events was the 2024 UIC-KORAIL Training Session, which took place in Seoul in May, and addressed a wide range of sustainability-related topics, bringing together experts from across the region. In parallel, East Japan Railways (JR-East) organised a dedicated workshop on safety in railway operations, held in Tokyo in November 2024, which gathered regional members to share expertise and experiences in this critical area.

High-speed rail development also remained a strong focus for the Asia-Pacific region. In April, Seoul hosted the UIC Intercity and High-Speed Committee conferences alongside the UIC-KORAIL Workshop on Best Practices for High-Speed Rail. These events offered a valuable platform for high-speed experts to share knowledge on cutting-edge technologies, infrastructure planning, and operational solutions, thereby contributing to the continuous advancement of high-speed rail in the region.



In terms of international connectivity, the strategic significance of railway expansion as a catalyst for regional development was once again underpinned during the 5th Balkans and Black Sea Forum, held in Athens. Particular emphasis was placed on the development of the Commonwealth of Independent States (CIS) and to the increasing importance of resilient transport corridors linking Europe and Asia. The Middle Corridor, extending from Southern Europe to Central China via the Trans-Caspian routes, and the Southern Corridor, connecting Southern Europe to Central China through Türkiye, Iran, Turkmenistan, Uzbekistan and Kazakhstan, are both emerging as critical components of the region's future transport landscape.

Throughout 2024, the Asia-Pacific members continued to foster regional cooperation through key governance meetings. The 36th Asia-Pacific Regional Assembly was hosted by KORAIL in Seoul in April, while the 37th Assembly was organised by China Rail on the occasion of InnoTrans in Berlin in October. Both meetings successfully brought together numerous UIC members from across the region, facilitating structured dialogue and consensus-building on future workstreams.

SHOWCASING INNOVATION IN CATENARY RENEWAL



NOVEMBER 2024

TASKFORCE DEFINES SAFETY BARRIERS



NOVEMBER 2024

ASIA-PACIFIC SAFETY TRAINING WITH JR EAST



NOVEMBER 2024

UIC AT COP29 FOR RAIL ADVOCACY

Baku



NOVEMBER 2024

Middle East: Strengthening regional integration and rail development

The Middle East region has continued to strengthen its strategic role within UIC, focusing on enhancing connectivity, promoting rail infrastructure development, and fostering regional cooperation.

Throughout 2024, UIC strengthened its partnerships with key Middle Eastern members and stakeholders, including national rail undertakings and governmental transport agencies. This engagement has centred on sharing best practices, supporting the deployment of interoperable technical standards, and assisting with capacity building in emerging rail markets.



© SAR (Saudi Arabia)



© TCDD (Turkiye)

Several flagship projects have exemplified the region's dynamic growth. Notably, the expansion of high-speed and intercity rail networks in countries such as Saudi Arabia, the United Arab Emirates, and Qatar has gained momentum, supported by UIC's technical expertise and frameworks. These developments align with broader economic diversification strategies and sustainability goals pursued across the Gulf Cooperation Council (GCC) states.

The region has also played an active role in promoting cross-border rail connectivity initiatives, contributing to a broader vision of integrated transport corridors linking Asia, Africa, and Europe. These corridors are vital for enhancing trade flows and supporting economic development across the region.

Additionally, UIC's Middle East members have participated in regional workshops and training programmes, focusing on key areas such as rail safety, digital transformation, and infrastructure resilience. These are instrumental in building local expertise and ensuring the adoption of international best practices.

Furthermore, cooperation with regional institutions and economic bodies has been further strengthened, facilitating dialogue on regulatory alignment, standards harmonisation, and joint development projects, making progress on the shared goal of having a more connected and sustainable rail network in the Middle East.

Looking ahead, the Middle East region is expected to continue playing a vital role in UIC's global strategy, leveraging its strategic geographic position and investment in rail infrastructure to support international transport integration and sustainable mobility solutions.

UIC HOLDS FRMCS GLOBAL CONFERENCE

Paris UIC HQ



NOVEMBER 2024

UIC-CER HIGH-LEVEL FREIGHT MEETING



DECEMBER 2024

UIC WORLD SECURITY CONGRESS WITH SNCF

Paris UIC HQ



DECEMBER 2024

EXPLORING SUPERCONDUCTIVITY FOR RAIL

Paris UIC HQ



DECEMBER 2024

The Americas: Increasing strategic influence and innovation

The American regions continued to strengthen their strategic engagement with UIC's global activities throughout 2024. Representing a diverse membership across North, Central, and South America, the regions remain focused on expanding collaboration and fostering innovation to address the challenges of sustainable and resilient rail transport.

In North America, the United States and Canada remained key contributors to UIC's work, with U.S. Department of Transportation (USDOT) and Transport Canada participating in technical working groups. Here, they contributed expertise in areas such as rail safety, infrastructure resilience, and interoperability standards. In addition, UIC members such as Amtrak and Canadian National Railway (CN) have been instrumental in pilot projects which work on improving digitalisation and environmental sustainability.

South America continued to develop rail infrastructure and services, with active involvement from key national operators and agencies across Brazil, Argentina, and Chile. The region focused on adopting UIC's standards and best practices to enhance safety and efficiency, while also exploring innovative financing models for rail projects aligned with sustainable development goals.

Throughout 2024, the America regions intensified their efforts to build strategic partnerships with governmental bodies, industry stakeholders, and academic institutions. A series of workshops and webinars addressed key topics such as climate adaptation for rail infrastructure, smart ticketing systems, and multimodal integration, engaging a wide range of participants across the continent.

The 2024 Latin America Regional Assembly (LARA) was hosted online, enabling a high-level of participation despite geographical constraints. The assembly set ambitious targets for 2025, including strengthening cross-border cooperation, advancing green rail technologies, and supporting capacity building for rail professionals.

Additionally, UIC emphasised climate and seismic resilience through targeted partnerships and events, reinforcing its commitment to fostering innovation and sustainable growth in the American rail sector.



AFRICA REGIONAL ASSEMBLY

Paris UIC HQ



DECEMBER 2024

UIC GENERAL ASSEMBLY 2024: DRIVING RAIL FORWARD

Paris UIC HQ



DECEMBER 2024

UIC 2024 KEY MESSAGES RELEASED



DECEMBER 2024

EUROPE REGIONAL ASSEMBLY

Paris UIC HQ



DECEMBER 2024

Engagement in Opt-In Projects

The Opt-In Projects represent one of UIC's key deliverables to its members and are therefore central to the organisation's mission and strategy. These projects are specifically designed to address members' needs, with the aim of delivering tangible value in their day-to-day operations.

The digitalisation of the Opt-In process also played a crucial role by enabling quicker and smoother exchanges between UIC and its members, while providing an improved overall visibility of the various projects within their operational teams.

In addition, certain recurring activities – regularly highlighted as essential by the members – are progressively evolving into permanent of UIC's work programme.

These developments clearly demonstrate the ongoing commitment of UIC members to continuously develop UIC technical expertise and deliverables across key domains, to the benefit of all railway undertakings and infrastructure managers.

By the end of 2024, the total UIC Project Portfolio value had reached €13.1M, marking an increase of €1M compared to €12.1M at the end of 2023. This significant growth reflects a renewed momentum across several areas, notably within the Freight and Passenger Departments as well as in the Energy sector.

Link to visit the Opt-In Online tool:
<https://opt-in-online.uic.org>.

Advancing global rail standards

Migration progress for UIC's IRS standards

UIC comprehensively mapped its documents to facilitate the migration of its leaflets to International Railway Solutions (IRSs). This process includes collecting data on member interests, known usage, and the position of documents in the development cycle (V cycle). Surveys among UIC members outside Europe have also provided valuable insights, ensuring that the work programme aligns with needs worldwide.

Considering the initial plan and the additional leaflets identified for migration based on member feedback, approximately 240 UIC Leaflets remain to be migrated.

Based on the above, and including the new IRSs to be developed and those to be revised, the migration plan was updated.

To complete this migration by the end of 2029, it is essential to optimise the approval and publication processes, implement new tools for faster editing, involve experts from other regions and new stakeholders, and allocate more internal UIC resources to standardisation.

Member contributions to standardisation initiatives

Since 1922, UIC has been instrumental in shaping and harmonising the railway industry and technical framework through its leaflets and, later, International Railway Solutions (IRSs). Technological innovation, increased business cooperation, globalisation, and UIC's expansion have had a significant impact on its standardisation activities. To continue producing useful technical documents, UIC has adapted its strategies accordingly.

In 2024, the Standardisation Platform published the *Standardisation Strategy 2030* document, outlining recommendations to enhance the standardisation process along five key axes. These include reinforcing member confidence and alignment on IRS development projects, improving IRS usability, enhancing the quality and efficiency of UIC standardisation activities, better interfacing with other standardisation bodies, and supporting a common vision aligned with strategic priorities.

Member contribution is vital to this process. By providing all members with sufficient information, collective support and contribution to IRS development work is ensured. A specific form will support the development of new IRSs or revisions, providing a clear justification, thorough analysis, and a detailed work structure. This form, shared with all UIC members, will enable them to better understand and contribute to the projects. In this context, the invaluable expertise provided to UIC by China Railway (CR), CARS, East Japan Railway (JR-East), KORAIL and Korea National Railway (KNR) represents not only a significant technical contribution, but also serves as clear evidence that UIC is built on international collaboration at a global level.

These efforts will ensure that UIC continues to produce high-quality, relevant standards that meet the evolving needs of the global railway community.

Future Railway Mobile Communication System (FRMCS)

Release of FRMCS V2 and its adoption worldwide

Following the successful introduction of FRMCS, the next-generation mobile communication system for railways, as the successor to GSM-R in the 2023 Control Command and Signalling (CCS) TSI, work on specifications has progressed steadily across all three levels: UIC, the 3rd Generation Partnership Project (3GPP), and the European Telecommunications Standards Institute (ETSI).

Significant progress was made within 3GPP Release 5, including solutions tailored to railway needs such as support for Railway Emergency Calls via ad-hoc group calls, and the standardisation of the FRMCS European frequency bands (900 MHz, now 3GPP band n100, and 1900 MHz, now band n101).

Version 2 of the UIC FRMCS specifications was developed and submitted for review to the European Union Agency for Railways (ERA) Extended Core Team (EECT) at the end of March 2024.

By the end of 2024, this work concluded with ERA publishing the FRMCS Technical Opinion.

Launch of MORANE 2 testing programme

The Flagship Project 2 (FP2) MORANE 2 is the European trial for FRMCS. It is partially funded by two European initiatives: the Europe's Rail Joint Undertaking (EU-Rail) and the European Smart Networks and Services Joint Undertaking (SNS JU), both aiming to promote innovation in the railway sector.

The project is carried out by a strong consortium of stakeholders that includes several suppliers, four railway companies who are members of the European Rail Industry Association (UNIFE), and UIC, which acts as the project coordinator.

FP2-MORANE 2 was launched in December 2024 and is planned to run for 34 months. It will test the FRMCS technology in three specialised laboratories as well as on five real-world test sites (Field Test Beds), including one dedicated to high-speed operations, with tests reaching speeds of up to 300 km/h.

Operations and safety

Regional collaboration and capacity-building initiatives

In 2024, UIC's Operations and Safety activities continued to expand through a strong portfolio of regionally grounded, forward-looking projects that support innovation, capacity-building, and enhanced performance across the global railway community.

In operations, several initiatives addressed key challenges around digitalisation, infrastructure performance, and network capacity. Practical work was carried out on the application of 5G technologies to support real-time operations such as traffic monitoring, obstacle detection, and driver assistance. Studies on station optimisation and passenger flow management offered tools to improve safety and service continuity in large transport hubs. Progress was also made on updating methodologies for rail network capacity assessments, aligning with changing traffic demands and European regulatory frameworks.

UIC also reinforced its leadership role within European rail innovation programmes. As joint leader of EU-Rail's System Pillar Task on Digital Automatic Coupling (DAC), UIC contributed to the development of a harmonised operational rulebook to ensure cross-border compatibility of DAC-equipped trains. Work also advanced on the concept of a European coordination body for Full Digital Freight Train Operation and the definition of safety-critical components such as train integrity and length monitoring. In parallel, UIC coordinated the DACcord project, which is supporting the large-scale rollout of DAC by aligning stakeholders and national programmes across Europe, while developing a shared migration strategy and funding approach.

UIC's safety activities had the same dynamism. Building on the growing use of AI, several projects focused on real-time risk detection and predictive monitoring, ranging from the automated observation of abnormal behaviours at level crossings to digital platforms for safety data visualisation and analysis.



Enhancing freight safety and European regulatory actions

In 2024, UIC continued to strengthen its contribution to freight transport safety by supporting several key European initiatives aimed at addressing emerging risks and promoting harmonised regulatory approaches.

One of the most prominent efforts is the ERA-coordinated Joint Network Secretariat (JNS) Crosswind initiative, launched in response to serious incidents involving semi-trailers being blown off pocket wagons under strong crosswind conditions. It seeks to develop harmonised safety measures at European level, particularly in the context of combined transport. The focus is on establishing clear criteria for loading and securing semi-trailers, recommending updates for securing devices within the Technical Specifications for Interoperability (TSI) Wagon framework, and providing infrastructure managers with practical guidance for assessing wind-related risks on exposed routes.

In support of this work, UIC launched the Resilient Railways facing Climate Change (RERA) Wind project in 2024, in partnership with two leading European universities. This initiative will deliver specific Crosswind Criteria tailored for intermodal trains and conduct in-depth aerodynamic analysis of the interaction between semi-trailers and pocket wagons under adverse wind conditions. The results will supply the JNS with essential technical foundations to develop robust, evidence-based safety recommendations.

UIC is also contributing to the JNS initiative on Broken Wheels, which addresses the need for harmonised approaches to trackside monitoring, particularly with Hot Axle Box Detection (HABD) and Hot Wheel Detection (HWD) systems. Through its NETWORK-MONITOR project, UIC is leading benchmarking activities, working toward consistent warning thresholds and coordinated response protocols across Europe. A comprehensive global survey was launched in 2024 to collect data from UIC members worldwide. The findings will be summarised in a white paper and cost-benefit analysis to inform future implementation.

These initiatives reflect UIC's ongoing commitment to operational safety, technical harmonisation, and the transition to a safer, more resilient rail system across its global network.

Railway infrastructure resilience was also addressed through studies on the impact of extreme weather conditions, particularly rainfall and heat, helping railway undertakings quantify climate risks and inform mitigation strategies. The safety implications of new technologies, such as hydrogen-powered trains, were analysed through dedicated risk assessments.

To support global cooperation and knowledge sharing, UIC continued to invest in its Regional Safety Taskforces. These platforms, active in Africa, Latin America, and newly launched in the Middle East in 2024, work on tailored local approaches to improve safety. Each taskforce defines its own priorities based on local development levels and language needs. In Latin America, efforts focused on capacity building, signals passed at danger (SPADs), and AI-based tools, with over 450 professionals participating in regional training events. Africa concentrated on peer reviews and leadership in safety culture, while the Middle East addressed safety management systems, climate threats, and the use of safety databases. A North American taskforce will soon be launched, with initial topics likely dealing with safety culture, infrastructure resilience, and monitoring technologies.

UIC's technical leadership in performance, reliability, availability, maintainability, and safety (PRAMS) further ensures that safety and quality requirements are fully integrated across European railway system design efforts. Acting as a joint leader and technical coordinator, UIC provides strategy and guidance across the EU-Rail System Pillar to ensure these non-functional requirements are implemented consistently and robustly.

Together, these activities reflect UIC's strategic role in fostering safety, innovation, and operational excellence through collaborative, regionally sensitive, and technically advanced initiatives.

Supporting strategic priorities in rail freight

In 2024, UIC continued to respond to the evolving technical and operational needs of the rail freight sector by focusing its efforts on four main areas: standardisation, digitalisation, the advancement of Digital Automatic Coupling (DAC), and enhancing UIC's role as a service provider, alongside deepening international cooperation.

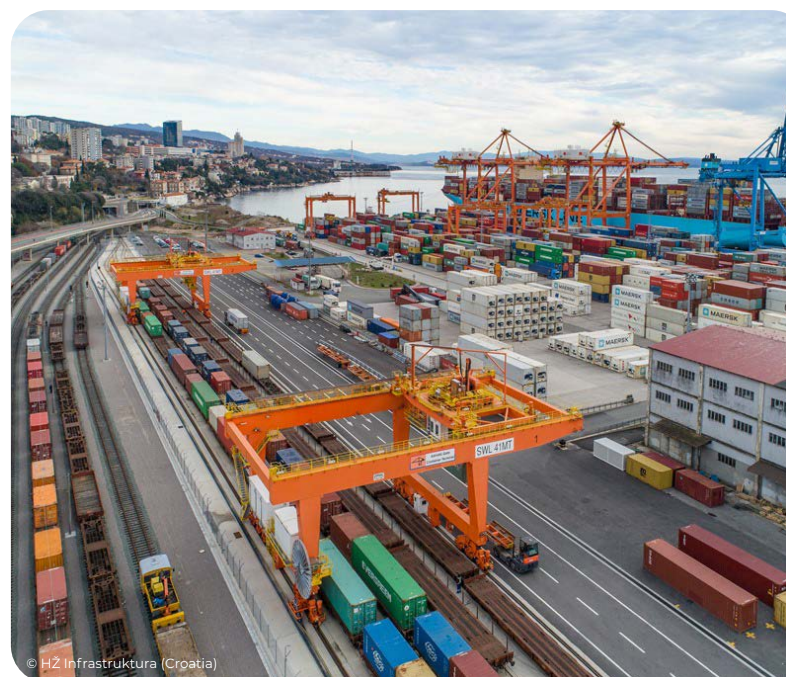
Standardisation remained at the core of UIC's work for freight, with several expert groups contributing to the development and revision of International Railway Solutions (IRSs). Notably, the Operations Study Group finalised updates to IRS 40472 on braking procedures and prepared new standards addressing train immobilisation and safety during stops. The Exceptional Consignments working group proceeded with revisions to IRS 50502 and its outline profiles to harmonise cross-border procedures. Meanwhile, the Loading Guidelines Group ensured that its annual document updates aligned with ERA's Acceptable Means of Compliance (AMOC). Standardisation efforts also covered wagon usage, particularly regarding the General Contract of Use (GCU) appendices and repair protocols, as well as updates to IRS 40471-3 and 20201 in line with the latest Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). In collaboration with the International Rail Transport Committee (CIT), a new version of IRS 40426 on wagon sealing was also published.

Digitalisation efforts progressed with several projects reinforcing UIC's role in the sector's digital transition. The IT Study Group launched the ATLAS database for the Uniform Distance Table for International Freight Traffic (DIUM) location codes and continued deploying Hermes 30 in compliance with the Technical Specifications for Interoperability for Telematics Applications for Freight (TAF TSI). The Harmonised Commodity Code (NHM) was updated to better align with customs processes, laying the groundwork for RID and waste codes to be integrated in the future. Furthermore, the Combined Transport Working Group strengthened its partnership with RailNetEurope (RNE) to unlock the potential of extensive yet underutilised data. This strengthened partnership is set to launch initiatives that will improve data access, combined transport performance visibility, and guidance and funding tools.

The Digital Automatic Coupling (DAC) programme remained a flagship innovation for European rail freight.

In 2024, UIC actively participated in the European DAC Delivery Programme (EDDP), particularly through the Operations Study Group's review of the DAC Preliminary Operational Rulebook. This document sets harmonised operational rules to ensure interoperability and safety across various network scenarios. Drawing from practical freight operations experience, UIC provided crucial feedback on braking, coupling dynamics, and shunting procedures under DAC conditions. UIC was also invited to contribute to the DAC Pioneer Trains Project, a demonstration initiative testing pre-equipped DAC freight wagons on international corridors. This project will test hardware and software compatibility, remote control features, and operational aspects such as brake pressure management and data transmission.

In parallel, UIC strengthened its position as a service provider through initiatives like Audit4All, a joint audit programme developed by the Quality Study Group. Audit4All facilitates legal compliance by coordinating audits across the safety, environment, and due diligence domains, while also reducing the audit burden on railway undertakings (RUs) and suppliers. Moreover, the development of the ATLAS platform into a modern Software as a Service (SaaS)-based data sharing tool with Application Programming Interface (API) integration exemplifies UIC's drive to modernise service delivery and ensure resilience amid changing member needs.



International cooperation continued to be a cornerstone of UIC's freight activities. The Dangerous Goods (RID) Expert Group worked closely with the Intergovernmental Organisation for International Carriage by Rail (OTIF), the United Nations Economic Commission for Europe (UNECE), and the European Commission (EC) to ensure coherence between RID, the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), and the Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN).

The Agreement on Freight Train Transfer Inspection (ATTI) Special Group advanced inspection frameworks aligned with the GCU and RID provisions, working together with RailData and other relevant groups.

The Wagon User Study Group, alongside experts from the European Rail Freight Association (ERFA) and the International Union of Wagon Keepers (UIP), focused on reforming the GCU to align it with European regulations and implement recommendations from the European Regulation on Entities in Charge of Maintenance (ECM), the Joint Network Secretariat (JNS) initiatives, and other reform proposals.

The Train Driver Communication project, in partnership with RailNetEurope, facilitated cross-border cooperation to overcome language barriers, culminating in a successful conference showcasing the achievements of the Translate4Rail (T4R) project between Italy and Switzerland.

The Combined Transport Group joined with the UNECE Working Party 24 (WP24) and other stakeholders to deal with global challenges such as pest control responsibilities and equipment interoperability. Meanwhile, the Efficient Cross Corridor Organisation (ECCO) group promoted cooperation among railway undertakings across European Rail Freight Corridors, advocating for improved coordination and a fair compensation model to address operational challenges posed by inconsistent corridor management.

Overall, these varied activities demonstrate UIC's ongoing commitment to advancing rail freight through standardisation, digital innovation, practical service offerings, and strong international cooperation.

Security

As a key event in 2024, the 19th UIC World Security Congress was organised to bring together experts and stakeholders from across the rail sector to address current and emerging security challenges. This congress, co-organised with SNCF, highlighted the crucial role of railways in managing both routine and uncommon security issues, demonstrating how innovation and collaboration can significantly enhance railway resilience worldwide.

A high-level session focused on the vital role railways play in ensuring safe and seamless transport for millions of visitors during the Paris 2024 Olympic Games, featuring insights from the National Railways of France (SNCF), the French Ministry of the Interior, and the Olympic Organising Committee. This cooperation resulted in the Paris Declaration, which sets the agenda for the UIC Security Platform over the coming years and defines security priorities across all UIC regions.

In 2024, three key publications were released, addressing trends in rail security, metal theft on railways, and rail security initiatives within UIC. In addition, the Network of Quick Responders conducted nine detailed surveys covering a wide range of security-related topics,



including Security Operations Centres (SOCs), artificial intelligence applications in security, metal theft prevention, cabin access protocols, designated safe zones in high-speed rail operations, freight transport security, luggage locker management, challenges linked to train surfing, and the implementation of access control gates.

The Rail Security Hub published or updated ten security solutions, including those concerning crowd management systems, innovative virtual reality-based training programmes, awareness campaigns, and intrusion detection sensors.

Significant progress was made in several important areas, with a draft publication focusing on AI applications for railway security being developed, reflecting the sector's commitment to adopting advanced technologies. Efforts to protect vulnerable populations within the rail environment also made progress, notably through the TRAIN2BEQUAL Opt-in project workshop and a joint event with the United Nations Economic Commission for Europe (UNECE) aimed at enhancing security for women.

Collaboration with UNECE and INTERPOL further strengthened initiatives to combat human trafficking.

A technical position paper was produced to address the critical issue of maintaining a continuity in security procedures on cross-border trains, underscoring the importance of international cooperation and harmonised security practices. Further progress was also achieved in crisis management and business continuity, supported by targeted surveys and experience sharing initiatives designed to improve preparedness and response capabilities.

On the research front, ongoing participation in European Union projects continued to enhance rail security. Noteworthy projects include IMPROving Railway sEcurity through awareneSS and training (IMPRESS), CYber-security skills across indUstrial Sectors (CYRUS), which develops personalised, work-based training, Unobtrusive Technologies for Secure and Seamless Border Crossing for Travel Facilitation (ODYSSEUS), and SafeTravellers, aimed at enhancing passenger safety and security.

Progress on ticketing solutions

The European Ticketing Roadmap and adoption of the Open Sales and Distribution Model (OSDM)

The Ticketing Roadmap of the Community of European Railway and Infrastructure Companies (CER) is a sector-wide initiative designed to improve the passenger experience by making rail ticketing more accessible, interoperable, transparent, and aligned with European Union (EU) passenger rights. It reflects the shared commitment of the European railway sector to deliver a modern, open, and customer-oriented distribution system.

The roadmap aims to simplify ticket distribution, allowing passengers to purchase tickets easily from any railway undertaking, sales channel, or third-party platform. It promotes full interoperability, ensuring that technical systems work seamlessly across companies and borders to facilitate international travel. The roadmap also enhances digitalisation, encouraging the use of secure, flexible, and user-friendly electronic ticketing solutions such as barcodes, mobile applications, and the electronic Ticket Control Database (eTCD).

Furthermore, it reinforces compliance with EU passenger rights by ensuring transparency regarding fare conditions, ticket availability, and claims handling procedures, in line with Regulation (EU) 2021/782 on rail passengers' rights and obligations.

As the technical platform serving the railway community, UIC plays a central role in making the roadmap an operational reality through the development of common standards and digital tools. The Open Sales and Distribution Model (OSDM) serves as the foundation of modern business-to-business (B2B) ticketing, facilitating both offline and online fare and booking exchanges. The Multiple East-West Rail Integrated Timetable Storage (MERITS) provides a centralised timetable database covering more than 200 European railway operators, enabling accurate journey planning. The eTCD ensures secure cross-border validation of electronic tickets, while the Real-Time Management of Delay Events (RTMDE) supports real-time delay and disruption management, improving communication and assistance for passengers during service interruptions.

In addition, the Passenger Assistance System for Seamless Access and Guidance for Everyone (PASSAGE) allows for the integrated booking of assistance services for persons with reduced mobility (PRM), which are fully built into ticketing and reservation flows. In addition, the IRSs, provide technical guidelines that define how ticketing systems should be structured, exchanged, and controlled, in full compliance with EU regulations.

UIC works in close collaboration with various partners to ensure coherence between technical developments and sector-wide priorities. With CER, UIC aligns technical solutions with the sector's political vision. In cooperation with ERA, UIC contributes to the integration of solutions into the Technical Specifications for Interoperability for Telematics Applications for Passenger Services (TAP TSI) and related legal frameworks. Through its work with the European Committee for Standardisation (CEN), UIC supports the development of open standards such as the European Reference Data Model for Public Transport (Transmodel) and Network Timetable Exchange Fares (NeTEx). UIC also works alongside the International Association of Public Transport (UITP) to ensure consistency with urban transport practices and engages with distributors and multimodal platforms to promote the open and inclusive adoption of shared standards across the broader mobility ecosystem.

Advocacy and climate action

UIC engagement at COP29: Amplifying the role of rail in climate action

As in previous years, UIC participated in COP29, leveraging this high-level platform to position rail in global climate dialogue. COP conferences are critical moments for shaping international climate policy and influencing collective goals for sustainable development. UIC used this opportunity to convey key messages from the year, showcasing rail's essential role in transport decarbonisation, climate resilience, and societal well-being. Here, UIC helped foster greater recognition and investment, positioning the rail sector as a meaningful way to contribute to global climate goals.

UIC's advocacy efforts were based on three strategic pillars: policy, finance, and adaptation.

On the policy front, UIC built on its 2023 study by introducing a new template to help Parties elevate the role of rail in their updated Nationally Determined Contributions (NDCs 3.0). Drawing on the negotiated outcomes of the First Global Stocktake, which emphasised "accelerating the reduction of emissions

Focus on OSDM

In 2024, UIC made significant progress in the deployment of the Open Sales and Distribution Model (OSDM), an open industry standard that simplifies the sale and purchase of rail tickets both across Europe and internationally. The OSDM standard allows passengers to easily access comprehensive pre-journey information, including timetables, fares, accessibility features, and onboard services. It facilitates the booking of journeys and enables multimodal tickets to be issued that combine rail with other modes of transport such as buses, trams, or on-demand mobility services.

In addition to enhancing the passenger experience, OSDM supports the implementation of EU Regulation 2021/782 on rail passengers' rights and obligations, by improving fare transparency, ensuring ticket interoperability, and streamlining claims handling processes.

Together with its members, UIC has actively contributed to OSDM integrating into the wider framework of European standards. This includes its alignment with the TAP TSI, as well as with the European Reference Data Model for Public Transport (Transmodel), the Network Timetable Exchange (NeTEx), and the standards developed by CEN. OSDM is also contributing to the development of a fully open and interoperable distribution ecosystem, involving not only rail, but also aviation and other multimodal stakeholders.

OSDM has now become a key facilitator of more accessible, transparent, and simplified access to rail travel. In parallel, UIC is responsible for supporting the practical implementation of OSDM within companies, through dedicated actions such as providing testing tools (such as Open Ticketing Service Testing (OTST)) and shared sandboxes for integration with IT providers.

from road transport on a range of pathways, including through development of infrastructure and rapid deployment of zero and low-emission vehicles", rail targets in NDCs are essential for countries looking to benefit from climate finance mechanisms and strengthen international cooperation.

In alignment with active and public transport associations, the *Rail NDC Template* sets out best practice and a comprehensive guide to help countries boost their rail objectives in NDCs and was referenced in the ITF Guide to Integrating Transport into Nationally Determined.

On climate finance, UIC highlighted the potential of carbon markets under Article 6 of the Paris Agreement with *Carbon Markets and Rail: How to Overcome Missed Opportunities*. This deliverable was published at the perfect time, coinciding with the operationalisation of the Paris Agreement Crediting Mechanism at COP29.

On adaptation, UIC highlighted the sector's proactive efforts to future-proof infrastructure against climate risks. Through its publication *Future-Proof Railways: Risks and Solutions for Railways Facing Climate Change*, UIC called for increased investment to leverage rail's inherent resilience in the face of more frequent and severe climate events.

Throughout the week, The UIC delegation, led by Alan Beroud, CEO of Polish State Railways (PKP) and Chair of UIC, participated in a wide range of high-level dialogues, representing the interests of the rail sector. These included ministerial roundtables on the Middle Corridor and Greening Urban Transport, as well as events within the Marrakech Partnership for Global Climate Action (MPGCA) focused on urban mobility and freight resilience. UIC consistently advocated for integrating ambitious rail targets into NDCs and harnessing climate finance mechanisms to accelerate a modal shift and low-carbon infrastructure investment.

Additionally, a key milestone was the renewed momentum behind the UIC Climate Responsibility Pledge, with Azerbaijan Railways (ADY) and PKP becoming signatories during COP29's Transport Day, marking the culmination of a year-long collaboration between UIC and ADY.

These partnerships reflect growing regional ownership and commitment to climate-aligned rail development and highlight the increasing engagement of rail companies in taking concrete climate action in line with the Paris Agreement and Sustainable Development Goals.



Integration of carbon finance mechanisms for rail

UIC sustained its strategic engagement on climate finance in 2024, emphasising the railway sector's untapped potential to benefit from international carbon markets. Building on momentum from COP27 and COP28, UIC continued to develop and disseminate knowledge products on how the rail sector can benefit from carbon markets. These insights shaped UIC's key messages at COP29, where the organisation contributed technical input to the ongoing discussions, including a guiding paper advocating for the inclusion of rail projects in the new Paris Agreement Crediting Mechanism, operationalised in Baku.

UIC's advocacy underscored the transformative potential of a modal shift to rail. Throughout 2024, UIC worked with members, partners, and carbon market expert to enhance transparency, develop robust accounting frameworks, and ensure the environmental integrity of rail-related carbon credits. These efforts culminated in the white paper *Carbon Markets and Rail: How to Overcome Missed Opportunities*, where UIC illustrated how carbon revenues can enable investment in low-carbon transport infrastructure.

Through active dialogue with country representatives and observer constituencies, UIC reinforced several key messages: that rail delivers measurable emission reductions; that existing methodologies are underused yet viable; and that political will is needed to standardise and scale access to carbon markets for transformative transport projects. These messages will continue to underpin UIC's engagement leading into Subsidiary Body for Scientific and Technological Advice (SBSTA) meetings and COP30.



Financial performance and transparency

2024 marked another step forward in UIC's commitment to transparency, financial discipline, and growth. Despite ongoing global uncertainties, UIC successfully maintained balanced accounts, closing the year with a final result of €12k, slightly below the projected €14k, yet reflective of effective cost control, improved cash management, and increased contributions from subsidiaries.

This positive outcome was primarily driven by the continued stability of membership fees, which remain UIC's main source of income. They increased modestly by 2% (€198k), demonstrating the presence of a solid revenue base from core activities. Notably, five new members joined UIC during the year. Additionally, financial revenues rose by 16% (€63k), supported by improved cash management, while Management and Support contributions increased by 34% (€413k), fuelled by higher contributions from subsidiaries and projects.

Regarding fee payment trends, the year 2024 recorded a slight increase of €8k, bringing the total balance to €1,767k. Importantly, Members and Regional Coordinators have maintained a strong commitment to closely monitoring unpaid fees, contributing to a continued positive trajectory in payment compliance. The 2024 accounts will be submitted for approval at the July 2025 General Assembly.

2024 Project activities

UIC's Opt-in Project portfolio experienced significant growth, increasing by 12% from €9.6m in 2023 to €10.79m in 2024. This was due to an increase of 27 opt-in projects compared to 2023.

Conversely, revenue from external projects (i.e. those not funded by members) saw a slight decline, decreasing from €2.5m in 2023 to €2.3m in 2024.

These two points together have led to UIC's overall project portfolio amounting to €13.1m in 2024, exceeding the €11.9m target presented at the December 2023 General Assembly, representing a 10.19% growth.

These results underscore the strategic importance of 2024 as a year of robust growth in UIC's project activities, fully aligned with the strategy endorsed by its members.

Therefore, UIC's 2024 financial performance reaffirms its strategic resilience, prudent financial stewardship, and capacity to deliver added value to its members. These strong foundations will support the organisation's continued expansion of project activities and international engagement into 2025 and beyond.

		2024 ACTUALS HQ*	2024 ACTUALS PROJECTS*	2024 ACTUALS CONSOLIDATED*
RESOURCES	Fees	9 411,4		9 411
	Project contributions		10 790	10 790
	External funding	47,3	2 306	2 354
	Space renting	814,3		814
	Royalties	80,0	238	318
	Financial revenues	455,9	39	495
	Extraordinary revenues	8,6		9
	Management & Support	1 603,8	(914)	690
	TOTAL RESOURCES	12 421	12 459	24 881
SPENDINGS	Staff	6 828,3	5 487	12 315
	Subcontracting	3 275,4	5 408	8 684
	Travels & Reception	439,9	631	1 071
	Equipment maintenance	465,4	768	1 233
	Depreciation variation	587,2	75	662
	Provision variation	300,8	(307)	(6)
	Financial charges	20,8	9	30
	Extraordinary charges	23,5	388	412
	Taxes	467,6	0	468
	TOTAL SPENDINGS	12 409	12 459	24 868
RESULT		12		12

* June 2025

Knowledge sharing and dissemination

UIC effectively disseminates best practices in the railway sector through a wide range of publications (such as documents and digital platforms) and by organising more than 85 events per year (such as seminars, webinars). In addition, the full range of UIC publications, such as International Rail Solutions (IRSs), specifications, guidelines, and reports, as well as services such as RailLexic, the leading reference guide in the field of multilingual rail terminology, can be found on the UIC Railway Publications Shop (ETF shop). The documents are clearly classified into the various product categories and are available at shop.uic.org/en.

In 2024, UIC also organised a varied portfolio of events dedicated to knowledge sharing and the dissemination of best practices in the rail sector, including:

- The 3rd Global FRMCS Conference, held on 19–20 November 2024 at the UIC headquarters in Paris, brought together over 280 participants to discuss the future of railway mobile communications, essential for digitalisation and operational interoperability.
- The Conference on Rapid Overhead Contact Line Renewal Systems, jointly organised on 5 November 2024 with National Railways of France (SNCF), gathered approximately 150 experts to explore innovations in overhead contact line systems, emphasizing durability, smart monitoring, and maintenance optimisation.
- The Superconductors Conference on 11–12 December 2024, also jointly organised with SNCF, attracted 120 participants to examine breakthroughs in superconducting technologies aimed at improving energy efficiency and traction systems.
- The 4th UIC Excellence in Railway Publication Awards, held on 15 October 2024, recognised outstanding publications produced by UIC's network of over 2,000 experts around the world, promoting development in standardisation, innovation, and operational efficiency.

- The 19th UIC World Security Congress, co-organised with SNCF, held from 2–4 December 2024 in Paris, focused on “Railway Security: Between Everyday Journeys and Major Events Challenges”, bringing together transport authorities, law enforcement, and railway operators to discuss security issues and best practices.

Together, these events underscore UIC's unwavering commitment to innovation, collaboration, and sustainability, cementing its role as a global hub for railway knowledge and expertise.



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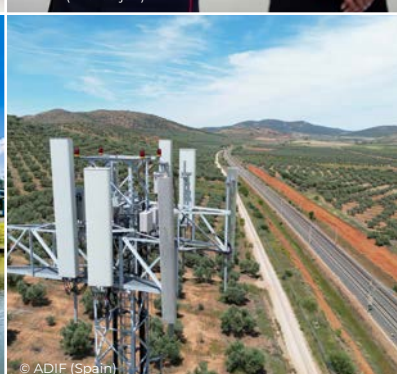
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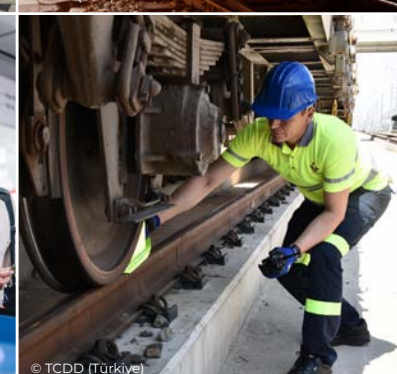
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