

# UIC in Action— Boosting Rail Mode Worldwide

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## Background

The rail mode is going through one of the most radical periods of change it has experienced in recent decades. Technological progress and its application to speed, safety, and traffic management have created new, highly-efficient rail transport services, synonymous with a renaissance. This is particularly true of high-speed passenger services in Japan and Europe, and of the freight transport in the United States, a burgeoning sector that has captured market shares unmatched in other regions of the world.

The return of the rail mode to the fore and the resulting new-found confidence are all the more justified given the wealth of projects under way designed to adapt the railways and their infrastructure to current and future market needs. In particular, these projects remove a number of geographical and technical obstacles impeding international traffic development. They include construction of new lines, particularly dedicated high-speed lines, and fixed links across water, such as the Channel Tunnel, the Great Belt Fixed Link opening very soon in Denmark, and the Øresund Fixed Link opening later between Sweden and Denmark, as well as the trans-Alpine projects.

However, at the same time, railway companies worldwide are having to review their organization and working methods—sometimes with unsettling effects—to comply with political decisions aimed at bolstering the economic performance of the railways and enhancing their profitability. The resulting changes can take several forms: change of company status generally bringing greater autonomy, privatization, division of the company into a number of distinct entities, organization of activities into business units, creation of international joint ventures operating in specific markets, etc.

In Europe, the liberalization of rail trans-

port has created new challenges for railways. The main repercussions of the policy are: the opening of national networks to operators from other countries, admission of new railway operators to the network, and the prospect of competition within the rail mode both between existing companies and with new companies. In addition, political and economic changes in central and east European countries in the 1990s have sparked fundamental upheaval in the organization of their railways. Today, these railways are adapting their structures and working methods to a market economy and Western legislative models.

UIC is fully aware of its responsibilities against this backdrop of world change to ensure the cohesion of the rail system as a whole from a technical and operational point of view and to foster all forms of international cooperation on issues vital to the future of railway companies. With this objective firmly in mind, UIC has initiated sweeping reform of its organizational and decision-making structures, and has framed an Action Plan to take account of the new demands of railway companies worldwide.

## 75 Years of International Cooperation

UIC is celebrating its 75th anniversary this year. Its establishment in 1922 expressed the determination of the founding states to develop international rail transport. Its initial purpose was to handle all the technical and operating matters relating to the development of international transport by rail. The scope of its activities was gradually extended to cover all disciplines of importance to the future of the railway companies, including political, strategic, commercial, management and financial issues.

In recent years, UIC membership has been boosted by many new arrivals from every continent, including new rail operators created by corporate restructuring. In 1997, UIC boasts a total of 119 members from 82 countries in five continents.

The international cooperation conducted under the UIC umbrella is still largely focused on technical harmonization and interoperability of rail systems. However, other ambitious objectives have also become priorities in their own right:



Railway representatives from all continents attending UIC Conference in Vadodra, India

(K. Aida)

- Promoting the advantages of rail transport and ensuring that the rail mode gains the place it deserves in transport policy (by development of cooperative ties especially with political, economic and financial institutions)
- Preparing for the passenger and freight services of the future by taking account of probable changes in society and the market (UIC Rail Plan)
- Establishing new channels of cooperation between railway companies throughout the world, between railways and industry, and between railways and political and economic organizations. (The creation of the World Executive Council and the UIC World Action Plan are the basis for an ambitious worldwide campaign in many fields.)

After 75 years of support and commitment from its members, UIC is today at

the heart of international railway cooperation. In fulfilling its task, UIC is strengthening its cooperation with more than 40 international organizations and associations including intergovernmental organizations (UN and EU), financial institutions (World Bank, ADB, EIB), international standards bodies, industrial associations and transport-related business sectors.

### Reform for Greater Efficiency

In 1995, UIC international cooperation structures were fundamentally reformed in a bid to improve the overall work efficiency and to make the decision-making structures more proactive.

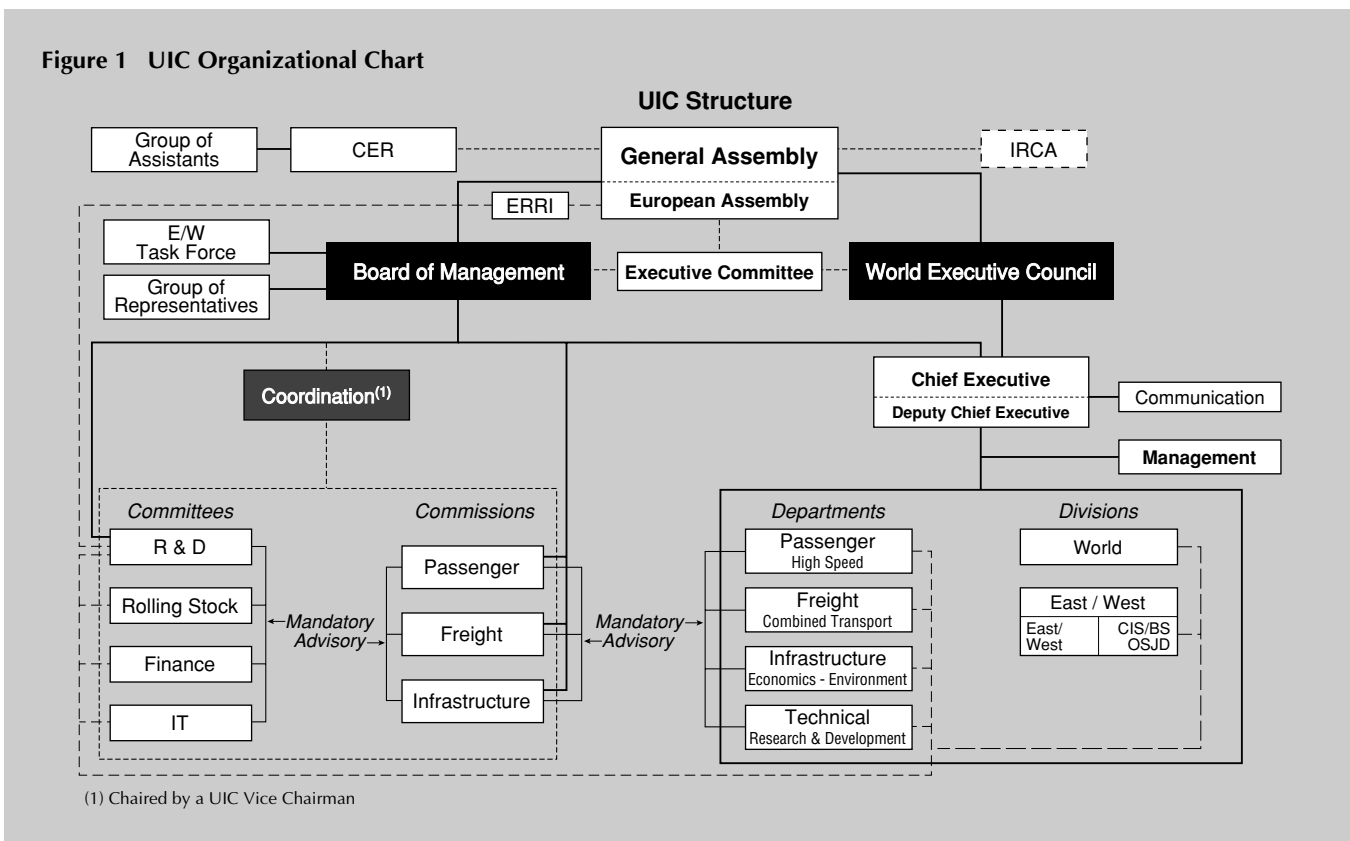
This reform created three new commissions: Passenger Commission, Freight Commission, and Infrastructure Commission,

representing a major change in the philosophy underlying the organization of UIC work. The new organization stemmed from three inter-related considerations:

- The conceptual distinction between train operations and infrastructure management
- The widely-held determination, both within the railways and among political leaders in most countries, of transforming the railways into market-driven enterprises to ensure greater cost-effectiveness
- The increasing tendency of railways to reorganize their management structure along the lines of the three new commissions

These three new UIC commissions now play a vital role in pioneering and managing international railway cooperation projects. In the context of project man-

Figure 1 UIC Organizational Chart



agement, each topic related to international cooperation is dealt with as a special project, allocated its own budget, funded either by all members, or by groups of members who feel the project benefits them.

The definition of responsibilities between the UIC Commissions is relatively clear and simple in terms of principles. For the Passenger Commission and Freight Commission, the areas of responsibility cover all matters specifically concerned

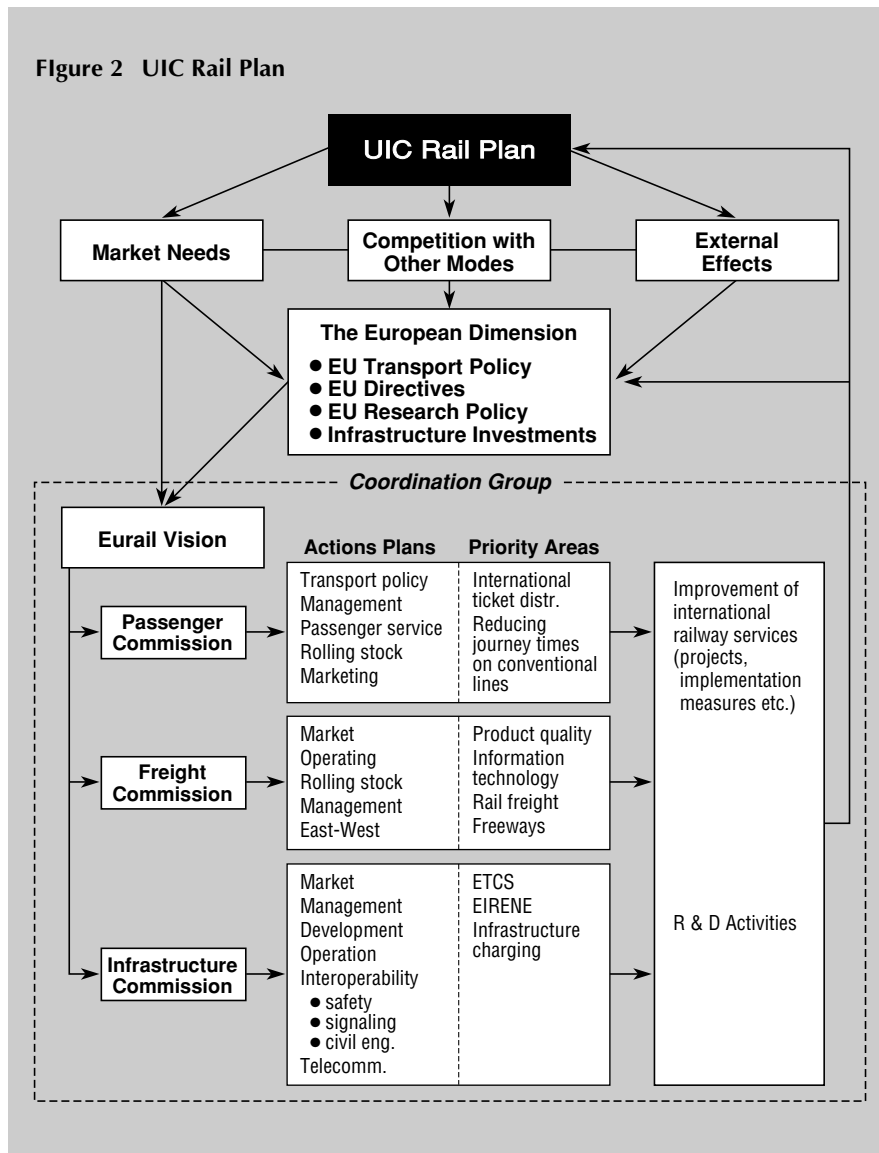
with production and sale of services. In addition to the purely commercial aspect, which was already the province of earlier committees, the production aspect covers everything related to defining the service, as well as the material and human resources needed to deliver and ensure its quality. This particularly involves definition of the basic commercial and technical specifications for rolling stock design. For technical aspects, the commissions have full author-

ity to delegate specific questions to the Rolling Stock Committee. This also includes major specific information technology (IT) applications linked to production and marketing of services, as well as specific research projects linked to transport services.

The Infrastructure Commission is responsible for managing infrastructure and train movements, and for technical aspects; the Commission can delegate certain questions to the Technical Committees (Rolling Stock, etc.). It is also responsible for defining all conditions for infrastructure access, including technical, safety and legal aspects. This is being addressed in close liaison with the Community of European Railways (CER) for questions dealing with application of European Directives on infrastructure access. For technical aspects, the Commissions are supported by the expertise of the R&D, Rolling Stock, IT, and Finance committees.

The role of the UIC as initiator and coordinator of railway cooperation activities has been considerably strengthened by this reorganization.

Figure 2 UIC Rail Plan



### From Vision to Action

Once these new structures were firmly in place, fundamental discussions were launched to identify the main areas of cooperation bound to have a major influence on defining the railway product of the future and into which available resources should be channelled.

During 1996, the heads of UIC study bodies helped devise a long-term vision of the development of railway activities for the 2015 time horizon. The vision looked at probable developments both within society and in the transport market, focusing on the changes in customer expectations and developments of competing transport modes. These discussions were crucial in helping to shape



ETCS Simulator

(UIC)

future railway cooperation and gained substance in the UIC Rail Plan, which both incorporates all projects with a view to guaranteeing the cohesion of the rail mode, and sets priorities. UIC activities in respect of the long-term vision should help finalize the UIC Framework Research Programme, and identify research topics of relevance to the R&D framework programmes funded by the EU. The main thrust of the Rail Plan is:

*Passenger sector:*

- Reducing journey times, in particular by developing high-speed lines and increasing speeds on conventional lines using tilt technology
- Developing international IT and distribution systems

*Freight sector:*

- Improving traffic quality through wagonload and combined transport
- Promoting use of IT systems for international traffic management and customer information
- Examining issues related to creation of Rail Freight Freeways in Europe

*Infrastructure sector:*

- Standardizing European Train Control System (ETCS)
- Adopting railway Digital Radio Network (EIRENE)

- Establishing rules governing infrastructure access and use (tolls, etc.)

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### Interoperability —A Crucial Issue

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Traditionally, rail transport is international; the standardization and technical harmonization of equipment (rails, rolling stock and parts, etc.) and the alignment of operating rules within the UIC code, permitted railways to operate long-term international services consistent with market and economic needs.

However, new requirements have emerged, particularly in a European context, with development of the Trans European Network (TEN). The UIC is responsible for achieving interoperability by determining the regulatory, technical and operational conditions in order for trains to run seamlessly without stopping at European frontiers. To achieve this goal, UIC works closely with industry in drafting the Technical Specifications for Interoperability (TSI) for infrastructure, power supply, maintenance, signalling and traffic control, and rolling stock, etc. Dovetailing of national signalling systems is largely inconceivable. For this reason, the railways and UIC have cooperated

with corresponding industries to launch the European Train Control System (ETCS). UIC has played a key role in defining the characteristics and technical specifications to be met in the drive for a universal system that can be used internationally one day. This project has been designed initially for high-speed traffic, but it should be possible for it to be applied progressively to all railway services.

As a parallel and complementary activity, the Digital Radio Project (EIRENE) is another large-scale programme now underway in cooperation with industry. The objective is to define a rail-specific standard digital radio system for introduction around 1998-1999.

However, the goal of interoperability is not confined to these technical fields and UIC is working actively to remove all the frontiers still impeding international railway operations, for example:

- In railway operations and infrastructure management, harmonizing infrastructure access conditions (charges, contracts) and rules for capacity allocation
- In telecommunications, opening up railway telecommunications networks to new, non-railway operators to break down walls between railways and other business sectors
- In safety, sharing experience at world level to strengthen this recognized asset of railways
- In passenger transport, interconnecting reservations systems and accessing distribution and information systems, as well as research into intelligent ticketing
- In freight transport, establishing international through trains, and computerized freight traffic management systems
- In research, defining the framework for joint R&D on a coherent, and cross-border basis. Topics such as improving the railway in environmental terms by reducing noise, will have pride of

place

- In management and training, preparing staff to work in an international environment, etc.

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### World Action Plan

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Today, the UIC is the only world organization representing the interests of all railways around the globe. Although the railway mode universally means moving steel wheels on rails, it is astonishing to note the technical, operational and cultural differences on different railways. For example, there are different track gauges, power supply systems, and signalling systems. Also, some railways are predominantly passenger oriented, and some are totally freight, while others combine both passenger and freight.

Different railways have different specific needs. In the past, UIC provided a vital link to bridge the technological gaps between member railways mainly through the Office for Research and Experiments which later became the European Rail Research Institute (ERRI). It also harnessed the cooperative efforts of large

networks such as Indian Railways (IR), Japan's railways (the JRs), and railways in Africa to address the problem of narrow-gauge railways.

The current needs of the railways are not only technical in nature, but also involve rising to the new challenges presented by global trends, especially with respect to management of commercial policies and redefining the relationship between governments and railways. Although, under these new circumstances, the first requisite is enhancing the competitive position of the railways by technological and operational innovation, it is also important to ensure that fair consideration is given to the true costs of the different transport modes.

In a bid to strengthen its role on the world stage, in late 1995, UIC created the World Executive Council, a new decision-making body in charge of directing international cooperation activities throughout the world. The Council is chaired by Prof. J. K. Musuva, Executive Chairman of Kenya Railways, and reports directly to the UIC General Assembly. It is currently composed of 17 members representing all regions of the world: four

members each from Asia, Africa, and Europe, two from the Middle East, and one each from the Maghreb, North America and Latin America. The Council has identified the following key points to underpin its future activities:

- Railway restructuring
- Technological upgrading
- Transport policy
- International corridors

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### Railway Restructuring

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The different forms of railway restructuring taking account of economic requirements in particular, represent a crucial issue for UIC member railways, government agencies and international organizations, especially financial institutions such as the World Bank.

To help ensure a planned and smooth transition from national railway companies to commercial enterprises, UIC organizes special Management and Policy Sessions (MAPS) aimed at high-level participants and embracing all aspects of railway management. The last session was in Rabat in May 1996 on the theme 'Railway restructuring, why and how'. The next session is scheduled in Kuala Lumpur, in May 1998. In addition, individual railways' experiences are analyzed by railway senior management; the first event of this kind took place in Stockholm in May 1997 on the Swedish model of separation between infrastructure management and railway operations. Railway restructuring also means developing appropriate financial structures for large organizations gradually losing government support; UIC plans to address this issue by involving leasing companies, banks and international organizations in the debate.



Rare gathering of high-speed trains from various European railways at UIC-sponsored exhibition (UIC)

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## Technological Upgrading

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The major areas of international cooperation at the world level include the technical and operational difficulties related to gauge differences, in particular the narrow- and broad-gauge railways. This places severe limitations on interconnections between national railways and interferes with development of international rail traffic. As a result, UIC set up the Metre Gauge (1000–1067 mm) and Broad Gauge (1520–1680 mm) groups. These two groups are working through close cooperation to upgrade technological capabilities to the best practices. To ensure economies of scale and quicker adoption of new technologies, UIC has been organizing a new programme of User/Producer Interaction Seminars. These seminars are designed to enable railways around the world to share ideas with manufacturers, service providers, and design and construction companies. Specific objectives include:

- Promoting greater interaction and cooperation between railways and industry
- Enabling all UIC members to have access to the latest technology
- Identifying future technological developments and informing participants of major breakthroughs
- Anticipating members' rolling stock and equipment requirements in the short and longer terms

The first seminar was in New Delhi on Railway Track Technology, followed by a seminar on Rolling Stock Technology in Teheran in November 1996. The next seminar is scheduled in Tokyo on Signaling and Telecommunications in April 1998.

The benefits derived from these cooperation initiatives between railway operators and industry should be reduced costs and time required to introduce new technologies.

World meetings and exchanges of experience also take place on other specific subjects which deal with the future of railway companies; for example, the World Railway Research Congress WCRR 97 scheduled in Florence in November 1997 on the theme 'Railways need to halve costs, double productivity and remain environmentally friendly', and the Eurailspeed 98 World Congress on High Speed due in Berlin in October 1998. Another very promising subject in terms of international cooperation is developing joint IT applications, especially for freight traffic.

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## International Corridors

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The globalization of trade and economy is sparking substantial growth in intercontinental traffic. Changing political environments and traffic growth are creating a host of opportunities for developing international rail/multimodal corridors, in particular between Asia, the Middle East, the Maghreb and Europe.

UIC member railways are ensuring that major infrastructure is in place in these potential corridors and that these developments continue in the right vein. UIC is cooperating actively with international organizations including the World Bank and the UN, in carrying out feasibility studies and developing common procedures to allow traffic to flow smoothly in these areas.

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## Conclusion

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UIC has clocked up an important milestone in its history by creating the World Executive Council and by spearheading several new concrete initiatives involving all regions of the world.

On one hand, creation of a highly-integrated, frontier-free pan-European railway continues to be a cornerstone of UIC activities, in response to the requirements of European political authorities. But in parallel to this, another cornerstone is cooperation between the railways on all five continents, which has strengthened considerably in recent years. World cooperation under UIC now reaches more railway companies than ever before and embraces all activities affecting the future—technology, research, operations, economics, management, and training. Against this globalization backdrop, barriers between companies as well as between business sectors also need to be lowered, if not dismantled. The railways must be part of this trend. Once they have finally removed the national barriers that have impeded their development for so long and can capitalize on all forms of international cooperation, they will be poised to enter a new era of unprecedented development. ■



### Philippe Roumeguère

Mr Philippe Roumeguère was appointed Chief Executive of UIC in November 1996. He is a graduate of the Ecole Polytechnique and joined SNCF in 1965 after obtaining a degree in Engineering from the Corps des Ponts et Chaussées. At SNCF, he held a number of top positions including Director of Ways and Works, Director General of SOFRERAIL, and Deputy Director General in charge of R&D.