

IHRA Objectives

With high-speed rail developing in Europe and Asia and new high-speed rail projects planned in many countries, the International High-Speed Rail Association (IHRA) was established in 2014 at the time of the 50th anniversary of the Tokaido Shinkansen.

IHRA has the following objectives:

1. To share information, knowledge and experience based on the principle of 'Crash Avoidance' to contribute to the global development of safe and efficient high-speed rail (HSR)
2. To establish an international standard based on the principle of 'Crash Avoidance'.

IHRA is a global organization grounded in the philosophy of promoting the common good, rather than a governmental body or an enterprise seeking a project contract, and strives to contribute to the further development of HSR around the world while adapting to local conditions.

- Establishment date: April 1, 2014
- Representative Director: Masafumi Shukuri (former Vice Minister of Ministry of Land, Infrastructure, Transport and Tourism)

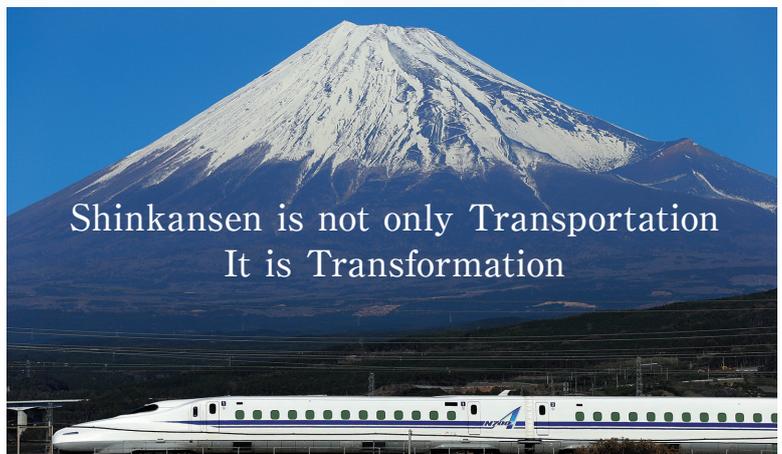


High-speed rail brings transformation to economies, society and people's lifestyles

— Dedicated HSR tracks, ATC and Total System Approach

HSR in Japan and Taiwan is based on the principle of 'Crash Avoidance' achieved by combining dedicated tracks completely separated from other forms of traffic, with the Automatic Train Control (ATC) system. These are complemented by the 'Total System Approach', which optimally integrates the tangible and intangible elements, in order to deliver high-speed, high-volume and high-frequency transport with world-class safety and reliability.

As clearly verified by the achievements of the Japanese Shinkansen (launched in 1964), and the Taiwan High Speed Rail (launched in 2007), the HSR system, consisting of the principle of 'Crash Avoidance' and the 'Total System Approach' not only represents a transportation system that enables high-speed passenger travel. It can also be seen as a social system which brings 'transformation' to economies, society and people's lifestyles.



Shinkansen is not only Transportation
It is Transformation

HSR that has evolved in Europe since the 1980s is a system that emphasizes 'interoperability', based on the use of conventional rail networks and the inter-connectivity of services between different countries. This type of system assumes the sharing of tracks between HSR and conventional trains. Different types of HSR based on these different premises exist around the world.

IHRA Activities

IHRA aims to promote international exchange and dialogue on HSR and contribute to the advancement of HSR worldwide by the initiatives below.

Visit to relevant countries, sharing knowledge and gathering information

IHRA strives to share information, knowledge and experience about the HSR system based on the principle of 'Crash Avoidance' and the 'Total System Approach' through having meetings with government/parliamentary dignitaries, railway personnel and media personnel of countries that are considering to introduce HSR, holding HSR seminars overseas, participating in international conferences, and providing information through website and SNS. IHRA also gathers information on the applicable countries' status and concerns of railways, and HSR development plans, through inspecting local railway infrastructures and exchanging opinions with local stakeholders.



Meeting with the Hon. Catherine King MP Minister for the Infrastructure, Transport, Regional Development and Local Government. (Nov. 2022, Canberra, Australia)



Visit to the Construction Site of the Mumbai–Ahmedabad HSR Project in India (July 2025, Gujarat, India)

IHRA Forum / IHRA Meeting

Representatives from governments and parliaments, railway officials, experts, researchers, and media professionals in Japan and abroad come together to discuss and share information from a global perspective on international affairs, the role of HSR in national strategies, the status and challenges of projects in various countries, and related policies such as urban development. In addition, through technical visits to HSR sites, participants deepen their understanding of current conditions, challenges, the benefits of development, and the future prospects for HSR systems. Furthermore, the IHRA Advisory Board Meeting engages in high-level and specialized exchanges of insights and provides guidance for IHRA's activities.



IHRA Forum 2014 – Shinkansen 50th Anniversary High-Speed Rail Conference (Oct. 2014, Tokyo, Japan)



IHRA Forum 2018 – Visit to the Construction Site of the Nishi-Kyushu Shinkansen (Nov. 2018, Nagasaki)



IHRA Forum 2022 – Beyond the Period of Turmoil: Towards a New Future with High-Speed Rail (Oct. 2022, Tokyo)



IHRA Meeting 2019 – Visit to the Shinkansen Rolling Stock Maintenance Center (Nov. 2019, Rifu, Miyagi)



IHRA Forum 2025 – Painting the Future Landscapes with High-Speed Rail: Bridging to a Better Tomorrow (Oct. 2025, Tokyo)



IHRA Meeting 2024 – The Success of Taiwan High Speed Rail and the 60th Anniversary of Shinkansen (Oct. 2024, Taipei, Taiwan)

IHRA Forum 2025

Painting the Future Landscapes with High-Speed Rail—Bridging to a Better Tomorrow—

■ Venue: TAKANAWA GATEWAY Convention Center ■ October 22(Wed) –25(Sat), 2025

■ Number of participants: Approximately 300 guests (100 from overseas and 200 from Japan) from a total of 13 countries

■ Supported by: Ministry of Foreign Affairs, Ministry of Economy, Trade and Industry, Ministry of Land, Infrastructure, Transport and Tourism

Opening Remarks, Guest of Honor Remarks, and Closing Remarks



Opening Remarks by Masafumi Shukuri, Chairman of International High-Speed Railway Association (IHRA)



Guest of Honor Remarks by Shigeru Ishiba, Former Prime Minister of Japan



Guest of Honor Remarks by Yasushi Kaneko, Minister of Land, Infrastructure, Transport and Tourism (Message Read by Yoshimichi Terada)



Closing Remarks by Danny Broad, Former Chairman, Australasian Railway Association, TrackSAFE Foundation, Australia

IHRA, established in 2014, has devoted the past eleven and a half years to advancing its mission with unwavering commitment, cultivating relationships with governments, parliaments, and railway authorities in countries considering high-speed rail. Safe and highly reliable high-speed rail—as showcased by the Shinkansen—is recognized as an international public good whose benefits should transcend borders. The very core of IHRA's mission is to contribute to the world's further development through the international deployment of safe and highly reliable high-speed rail. It is sincerely hoped that the IHRA Forum 2025 will offer a platform for meaningful dialogue and exchange, fostering new connections and, in time, inspiring future innovation.

Railways are not merely a means of transportation. Rail travel offers an experience imbued with a sense of the extraordinary, and railways function as an integrated system. High-speed rail is expected to continue expanding worldwide. In regions such as India and Southeast Asia, where demand far exceeds supply, the priority will be high-capacity mass transportation. By contrast, in regions like Japan and Europe, which have entered an era of economic maturity, greater emphasis will be placed on comfort, environmental performance, and overall quality. The diverse possibilities—and the aspirations—embedded in railways are sure to transform the world. It is sincerely hoped that the great success of this Forum will contribute significantly to the creation of a new global landscape.

The Shinkansen has, for more than half a century, played a major role as core infrastructure, supporting people's daily lives, promoting exchanges between regions, and driving economic development. Outside Japan as well, with respect to Taiwan High Speed Rail, the introduction of new rolling stock that employs Japanese technologies, the N700ST, is scheduled for the summer of 2026, and in India, construction is progressing locally toward the introduction of Japan's Shinkansen system for India's High Speed Rail project. It is sincerely hoped that the leaders in various fields that have come from all around the world will engage in lively and meaningful discussions, and that the sharing of international knowledge and collaboration will lay the cornerstone for future innovation.

High speed rail must meet the expectations of tomorrow and not the standards of yesterday, seamlessly blending technology, sustainability, efficiency, maintenance and empathy. IHRA friend, the late Roderick Smith, Emeritus Professor of Railway Engineering, Imperial College London, said that the railway is composed of elements of vehicles and infrastructure, information, and control systems, but importantly, in the middle of that are people, and people really are the center of this gravity. Engaging politicians, planners, designers, constructors, operators, maintainers, and passengers with well-constructed and truthful arguments is essential to demonstrate the benefits of high-speed rail for the people and the country.

Session 1

What the World Expects in Reliable Rapid Connectivity for Global Growth 9:30AM – 11:10AM



◆Keynote Address

Yoshimichi Terada

Vice-Minister for Transport, Tourism and International Affairs, Ministry of Land, Infrastructure, Transport and Tourism, Japan

The Shinkansen, inaugurated in 1964 as the world's first high-speed rail system, has now expanded into a network of approximately 3,000 kilometers. The Tokaido and Sanyo Shinkansen lines connect Japan's major population and industrial centers, while other Shinkansen routes have significantly contributed to regional development. By linking cities and dramatically reducing travel times, the Shinkansen network has fostered a sustainable and dynamic national structure. It contributes to economic development, regional revitalization and urban development. The strengths of the Shinkansen lie in its unparalleled safety, reliability with minimal delays, high-density operations, and maintainability. Japan's Shinkansen technology and expertise have extended beyond its borders, playing a vital role in high-speed rail projects in regions including Taiwan and India. Japan remains committed to providing the necessary cooperation to further advance these initiatives worldwide.



◆Speaker

Jill Rossouw

Chair, High Speed Rail Authority, Australia

The Australian High Speed Rail Authority (HSRA) is advancing plans for a transformative high-speed rail network along the east coast—a once-in-a-century opportunity to shape Australia's future. This strategic investment will boost productivity, liveability, and resilience while supporting economic growth and emissions reduction. The future proposed network spans over 1,800 km, linking Brisbane, Sydney, Canberra, and Melbourne with trains reaching 320 km/h. Delivery will use a dedicated, standalone system built in stages to manage costs and ensure resilience. The east coast, home to 60% of Australia's population and generating 70% of GDP, is forecast to grow by 33% by 2051. The first proposed line targets the nationally significant Newcastle-Sydney corridor, cutting journey times from more than 2.5 hours to just one hour on a new standalone passenger railway. Subject to a decision by the Australian Government to proceed, HSRA will lead planning, development, and delivery—unlocking opportunities for regional growth, sustainable mobility, and economic prosperity.



◆Speaker

Achal Khare

Founding Managing Director of NHSRCL, India

Transport is a vital driver of economic growth, connecting people to essential services and development opportunities. Yet it brings challenges such as air pollution and road accidents, with road crashes

claiming over a million lives annually worldwide. High-speed rail (HSR) offers a sustainable solution—strengthening intercity connectivity while moving toward nearly net-zero emissions. The Mumbai-Ahmedabad HSR project will cut travel time to about two hours, compared to 8–9 hours by road and 4–5 hours by air. Services will run every 30 minutes, and carbon emissions are expected to fall to one-twelfth of air travel and one-eighth of road travel. The corridor will link major industrial hubs and tourist destinations, boosting regional economies, promoting tourism, easing congestion in densely populated areas, and creating jobs—about 90,000 during construction alone. Seven additional corridors have detailed reports prepared, and one more is under study. Their implementation will depend on the success of this first corridor and broader socio-economic considerations.



◆Speaker

Odo R. M. Manuhutu

Deputy Coordinating Minister for Connectivity, Coordinating Ministry for Infrastructure and Regional Development, Indonesia

When we consider what the world expects from high-speed rail, one word stands out: beautiful. This is not just about appearance—it reflects precision, innovation, and excellence, the essence of high-speed rail. For developing nations, it is a catalyst for growth. Indonesia's economic vision rests on three pillars: high growth, equity, and dynamic stability. With one of the lowest rail densities among G20 countries, Indonesia must expand its network and attract global investment. The Jakarta-Bandung line is a milestone, delivering modern, efficient transport while generating tax revenue, creating jobs, and boosting regional GDP. Plans to extend the line to Surabaya will amplify these benefits, creating one of the world's longest corridors. Japan's consistent vision and execution in high-speed rail development offer valuable lessons and inspiration for other countries. Ultimately, high-speed rail is not just about speed—it is about shaping sustainable growth, strengthening connectivity, and building shared prosperity for the future.



◆Speaker

The Rt Hon. the Lord McLoughlin CH

Former Secretary of State for Transport, UK

This year marks 200 years since the birth of modern railways in Britain, and history offers three key lessons about investment. First, rail investment must be adaptable. In the 1820s, the goal was to move coal cheaply; today, rail is central to urban and inter-urban transport. The Elizabeth Line and Eurostar illustrate how flexibility to meet changing demand is essential. Second, high-speed rail works best when integrated into a network. Whether through direct connections or interchanges, as planned for High Speed Two in the UK or seen in Japan and, connectivity is critical. Third, we must design with the user in mind. Success depends not on infrastructure alone but on how people use it and the value it delivers. Rail has always met business needs, driven growth, and attracted invest

ment. Planning takes time, but if we get it right, the service will be transformative—just as it was 200 years ago and will be in the future.



◆Moderator

Tomohiko Taniguchi

Specially Appointed Professor, University of Tsukuba, Japan

Australia, India, Indonesia, and the United Kingdom are all seeking to build or expand high-speed rail. The United Kingdom—the birthplace of the railway and, in a sense, the progenitor of Japan's own rail tradition—

continues that endeavour. These countries share a common aspiration: to reshape their economic landscapes through high-speed rail, and to confront the obstacles along the way with courage and resolve. This is more than infrastructure. High-speed rail dramatically compresses time-distance—between regions and cities, between people and knowledge. It cultivates a sense that something still unimaginable lies ahead. In that respect, high-speed rail functions as a national engine of dreams. To create such a dream demands committed politics, patient capital, and sustained technological capability—not only excellence in construction, but also the daily discipline of maintenance. A society capable of building and sustaining a dream generator of this kind must reject terrorism and internal strife. It is for this reason that the IMEC project—linking India, the Middle East, and Europe—stands as a powerful symbol of peace through connection.

Session 2

Shaping the Future Together: Railway and Urban Development 11:25AM - 12:50PM



◆Speaker

Yuji Fukasawa

Chairman of the Board of Directors, East Japan Railway Company (JR East), Japan

JR East was established in 1987 following the privatization of Japanese National Railways and has since grown to the point where non-rail businesses account for one-third of its total revenue. Since 2000, the company has transformed stations from mere transportation hubs into platform for daily living. Currently, in the Shinagawa area, JR East is promoting large-scale development centered on TAKANAWA GATEWAY CITY, integrating multiple stations and surrounding communities into a unified urban concept. Notably, approximately 150 years ago, in 1872, Japan's first railway ran through this very area of Takanawa—a true birthplace of innovation for the nation. Recent excavations have even uncovered remnants of the original embankment from that era. Building on this legacy of innovation, JR East is committed to shaping the next century of enriched living, connecting the memory of the past with a vision for a vibrant future.



◆Speaker

Pichet Kunadhamraks

Director General, Department of Rail Transport, Ministry of Transport, Thailand

With support from JICA, Thailand is advancing the development of Krung Thep Aphiwat Grand Station, the new central hub in Bangkok. The station will be connected to the airport, offering a total functional area of 300,000 square meters and accommodating over 600,000 passenger trips per day. It includes extensive underground parking and direct subway connections. The first-floor serves as the concourse, the second-floor provides platforms for the Red Line and long-distance services, and the third-floor hosts high-speed rail and the Airport Rail Link, creating seamless connectivity for domestic and international travel. Retail space inside the station features local products under the OTOP program, following a Japanese-style approach to regional specialties. Krung Thep Aphiwat will become the center of Bangkok's rail network under a master plan developed with JICA. Applying TOD principles to surrounding areas remains challenging, especially linking the new station to the existing CBD, but collaboration with Japan's UR aims to deliver successful urban development.



◆Speaker

Cheng-Chung Young

Director of the Board, Taiwan High Speed Rail Corporation, Taiwan

Taiwan High-Speed Rail is a successful BOT project that adopted Japan's Shinkansen system and commenced service in 2007. Over the past 18 years, it has delivered outstanding performance. Safety and punctuality match Shinkansen standards, with an on-time rate of 99.5% and delays of less than two minutes. The system includes 12 stations, most originally located in rural areas. At the time of construction, the Bureau implemented new urban planning, converting agricultural land into commercial and residential zones. Hsinchu Station located near Taiwan's semiconductor hub is a prime example. Shin-Yokohama's transformation inspired us to internalize the high-speed rail project's external benefits into our project. Hsinchu station's development followed the principles of TOD by creating green space connectivity, directing vehicles underground, ensuring pedestrian and bicycle access, and maximizing open space. Future plans include integration with light rail and construction of high-rise commercial towers. Similar station-area projects are underway in Taoyuan, Taichung, Chiayi, and Tainan, making high-speed rail a driver of urban growth and economic vitality.



◆Speaker

Yoichi Kanayama

Special Research Professor, Department of Urban Design, University of Toyama, Japan

Toyama City, with a population of approximately 400,000, has been recognized as one of the world's leading cities in sustainable urban development by the OECD. Before the opening of the Hokuriku Shinkansen, the city faced challenges such as a north-south divide and a low-density urban structure driven by motorization. However, following the decision in 1982 to construct the Shinkansen, initiatives based on Transit-Oriented Development (TOD) began, including the elevation of conventional and Shinkansen lines and the conversion of the JR Toyama Port Line into a Light Rail Transit (LRT) system. Toyama's fundamental urban development policy is rooted in TOD, aiming to create a compact city. By promoting three key strategies—revitalizing public transportation including rail, encouraging residential development along transit corridors, and revitalizing the city center—the city has achieved remarkable results. These include population growth and rising land values in the city center and designated residential areas, increased tax revenues, and reductions in CO₂ emissions through the development of a walkable city. These efforts have also contributed to improved well-being, demonstrating the significant impact of Toyama's approach.

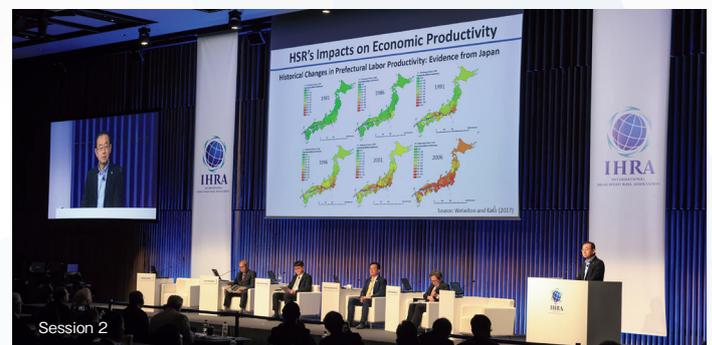


◆Moderator

Hironori Kato

Professor, Department of Civil Engineering, The University of Tokyo, Japan

Numerous studies have shown that high-speed rail (HSR) enhances accessibility by significantly reducing intercity travel time, thereby generating wide-ranging socioeconomic impacts on regions. More recent research has further identified HSR's positive effects on regional innovation. In addition, HSR promotes urban development in station areas, including the agglomeration of buildings and increases in land values in the vicinity of stations. To maximize the regional impacts of HSR, the concept of Transit-Oriented Development (TOD) emphasizes the integrated planning of rail systems and urban development. Key success factors are commonly summarized as the "5Ds": Density, Diversity, Design, Destination accessibility, and Distance to public transport. Complementing this perspective, the node-place model underscores the need to balance two dimensions: the station's role as a "node" within the transport network and the surrounding area's function as a "place." More recently, attention has expanded to include an "industry" dimension, which focuses on the strategic location of specific industries around stations to stimulate economic growth and innovation.



Session 3

Present State and Future Outlook of HSR projects 13:40PM - 15:10PM



◆Moderator

Joseph Schmelzeis Jr.

Vice Chairman, International High-Speed Railway Association (IHRA), US

Around the world, people are asking: why not choose high-speed rail? It can save time, make travel faster, improve economic efficiency, boost productivity and GDP, reduce housing pressure, cut traffic accidents, and lower green-

house gas emissions. With so many benefits, it sounds almost too good to be true—so why isn't every country doing it? As Professor Taniguchi said so poetically, high-speed rail is how nations generate dreams, combining politics, capital, technology, skills, and maintenance. But we do not live in a world of rainbows and unicorns. If it were that easy, it would have been done long ago. Introducing high-speed rail involves challenges—what the Japanese call *umi no kurushimi*, the pain of giving birth. Session 3 will showcase how countries have faced these difficulties and taken the dream and converted it into a vision, a plan, and a reality, proving that bold leadership and shared commitment can transform aspirations into progress.



◆ Speaker

Anjum Pervez

Managing Director, NHSRCL, India

The Mumbai–Ahmedabad High-Speed Rail corridor spans 508 kilometers, with 92% of the alignment elevated to minimize land acquisition width to just 17.5 meters, reducing impact on communities. To accelerate construction, India adopted the full-span girder launching technique for the first time, enabling rapid viaduct progress—10 kilometers per month at peak. Today, 325 kilometers of viaduct and overhead electrification masts are complete. Tunneling is advancing steadily, including the 21-kilometer Mumbai–Thane tunnel, featuring India’s first undersea rail section. Track installation uses J-Slab ballastless technology from Shinkansen, with 240 kilometers already cast. Station development under Project SMART promotes TOD principles, with municipal authorities revising master plans in collaboration with JICA. The Sabarmati multimodal hub is operational, integrating metro and BRTS connectivity. This transformative project is creating jobs, fostering skills, and boosting economic growth. Looking ahead, India envisions a 7,000-kilometer high-speed rail network, with new corridors expected soon.



◆ Speaker

Robert C. Lauby, P.E.

President, RCL Rail Safety Consulting, LLC
Associate Administrator for Railroad Safety,
Chief Safety Officer (Retired), FRA, US

Major U.S. high-speed rail projects—Amtrak’s new Acela train sets on the Northeast Corridor, California High-Speed Rail, Brightline West, the Baltimore–Washington maglev, and Texas Central—are critical to making rail the transportation mode of choice, though the nation remains far from full commitment. Acela trains now reach 160 mph but average only 65 mph between Washington, DC and Boston due to track limitations. California’s project faces soaring costs of \$135 billion and the loss of federal funding, making its 2033 completion doubtful. Brightline West shows promise with construction underway and federal grants, aiming for 2029 service despite rising costs. The maglev project was halted after the Federal Railroad Administration rescinded its notice of intent, citing feasibility concerns. Texas Central’s Dallas–Houston line, planned with Shinkansen technology, stalled after costs exceeded \$40 billion and federal support was withdrawn. Bipartisan leadership and urgent action are essential to advance high-speed rail, and waiting for a “better day” is not an option.



◆ Speaker

Nguyen Tien Thin

Deputy Director General,
Vietnam Railway Authority, Ministry of Construction, Vietnam

Vietnam’s Railway Network Development Master Plan (2021–2030) and the Vision till 2050 sets a comprehensive roadmap for modernizing and expanding the nation’s rail system. The current network spans over 3,100 km, dominated by the North–South line, but aging infrastructure limits rail’s market share to less than 1%. By 2030, the plan aims to upgrade 2,400 km of existing tracks and construct nine new electrified standard-gauge lines totaling 2,362 km. Major projects

include the North–South High-Speed Railway (1,541 km, 350 km/h, \$67.34 billion) and the Lao Cai–Hanoi–Hai Phong line (390 km, \$8.3 billion) to enhance domestic and cross-border connectivity. Urban rail development is also prioritized, with Hanoi planning 10 lines (413 km) and Ho Chi Minh City 8 lines (172 km), targeting completion by 2035. The new Railway Law, effective 2026, introduces policies for investment, TOD models, and technology transfer, creating favorable conditions for international participation in Vietnam’s \$111 billion railway market.



◆ Speaker

Pichet Kunadhamraks

Director General, Department of Rail Transport,
Ministry of Transport, Thailand

Thailand’s high-speed rail projects are advancing as a catalyst for national transformation and ASEAN connectivity. The first line of Thailand–China High Speed Railway phase 1 between Bangkok and Nakhon Ratchasima is now 50% complete, will open within four years, forming the backbone of the future rail network. In February 2025, the cabinet approved High Speed Rail Phase 2, linking Nakhon Ratchasima to the Lao PDR border and onward to China, with bidding expected soon. This line, designed for 250 km/h, requires a new Mekong River bridge accommodating both meter and standard gauges, adding complexity to construction and financing. Future plans include a Shinkansen-style Bangkok–Chiang Mai route at 300 km/h, reducing travel time to three hours and boosting regional economies. A southern extension to Malaysia is also planned but faces high investment hurdles. Thailand seeks global partnerships for technology and expertise, aiming for full local capability in operations and maintenance from day one. The projects reflect Thailand’s commitment to connectivity, economic growth, and long-term self-reliance.



Session 3



Session 4

Session 4

Driving the Evolution of HSR: Technology and Talent 15:25PM – 16:50PM



◆ Moderator

Larry Kelterborn

President, LDK Advisory, Canada

Four leading railway experts from Japan and the UK will present the latest initiatives in technological innovation and workforce development. Although their approaches differ, both nations share a common foundation: leveraging advanced technology and skilled people to strengthen and modernize rail systems. Japan and the UK remain global leaders in railway technology, operations, and safety, backed by a rich heritage—Japan’s first rail line was introduced by the UK in 1872. Today, the industry faces a critical shortage of skilled labor, driven by an aging workforce and rapid technological change. For countries planning to introduce high-speed rail, the expertise required for inspection, maintenance, and regulatory oversight demands exceptional precision and advanced capabilities. There is an urgent need for innovative inspection and maintenance practices, labor-saving solutions, and cost-effective technologies, while developing and securing talent has become one of the sector’s most pressing challenges. Railway experts from both countries will share their efforts that are essential to shape the future of high-speed rail through technology and talent.



◆ Speaker

Shunichi Usui

Corporate Executive Officer,
Central Japan Railway Company, Japan

The Tokaido Shinkansen’s strengths lie in five key areas: safety, reliability, high speed, mass capacity and frequent operations, and high energy efficiency. These advantages have been continuously enhanced through relentless technological innovation. Our company adheres to two fundamental principles. The first is comprehensive capability. Railways are complex systems integrating diverse technologies, and we place great importance on pursuing overall optimization rather than partial improvements. The second

principle is observation and thorough verification based on actual conditions. We emphasize a development cycle that includes field data collection, simulation and analysis, large-scale testing, and field validation on the main line. Examples such as the development of anti-derailment guards for earthquakes and energy-saving technologies embody these principles. In terms of human resource development, we have established a framework that rotates personnel across operations, design and maintenance, and research and development, enabling them to gain broad experience. We are also strengthening capabilities in data science. Moving forward, we will continue to deepen these initiatives and strive for further advancement of the Tokaido Shinkansen.



◆ Speaker

Jim Brewin

Chief Director UK & Ireland, Hitachi Rail, UK

Hitachi’s rail strategy in the United Kingdom combines decades of high-speed expertise with advanced digital maintenance solutions. Building on a legacy that began with Japan’s Shinkansen and expanded through projects like High Speed One and Two, Hitachi now operates over 300 train sets across the UK, supported by 22 depots and a major manufacturing facility. Reliability is 2.3 times the industry average, achieved through innovations such as HMAX (Hypermobility Asset Expert), a real-time condition-based maintenance system leveraging AI and edge computing. HMAX integrates volume of data from various components, enabling predictive maintenance and reducing heavy overhauls. Technologies like vibration monitoring and catenary flashover detection enhance both fleet and infrastructure performance. Collaborations with NVIDIA support digital twin modeling for scenario planning. With an aging workforce, Hitachi uses these tools to attract new talent and optimize operations, positioning HMAX as a scalable solution for global rail maintenance.



◆Speaker

Shinichi Tamai

Director-General for Railway Technology, Japan Railway Construction, Transport and Technology Agency (JRRT), Japan

For Shinkansen lines constructed after 1987, a vertical separation scheme has been adopted, whereby the Japan Railway Construction, Transport and Technology Agency (JRRT) is responsible for infrastructure construction and ownership, while JR companies handle operations and maintenance. To ensure sustainable high-speed rail, in addition to safety and reliability, it is essential to reduce labor requirements for both construction and maintenance. One example is the use of Geotextile Reinforced Soil (GRS) embankments, which are less prone to deformation than conventional embankments and contribute to reducing maintenance work. For overhead contact lines, JRRT is introducing steel pipe poles and simple catenary systems, which help achieve lighter structures and fewer components. Furthermore, GRS-integrated bridges and steel pipe poles offer superior seismic performance. In cold regions, sprinkler-based snow-melting systems have been implemented to prevent snow accumulation and reduce maintenance efforts. Looking ahead, we have formulated a Construction DX Vision, aiming to leverage digital technologies to improve efficiency in construction, operations, and maintenance.



◆Speaker

Neil Robertson

Chief Executive, The National Skills for Rail (NSAR), UK

High-speed rail's success depends on skilled people, and workforce development delivers both economic and social benefits. In the UK, initiatives such as the National Skills Academy for Rail and the Routes into Rail campaign aim to attract young talent and address shortages, especially in digital and data science. Apprenticeships have grown to 2,500 annually, though 5,000 are needed. Recruiting from disadvantaged communities strengthens the business case for high-speed rail by reducing government costs, as NSAR showed in response to the Oakervee Review. Workforce planning tools forecast needs and mitigate wage inflation, while procurement mandates ensure recruitment goals are met. Early engagement through work experience saves up to £750 million annually, proving proactive strategies outperform market-driven approaches. Challenges remain with aging managers lacking digital skills, prompting competency models to boost productivity and adaptability. Digital expertise and AI integration are top priorities, positioning rail as a modern, socially valuable industry for the future.

<Shinkansen Briefing & Tour> (October 22nd)



Visit to JR Central's General Education Center



Discussion Session

<IHRA Advisory Board Meeting> (October 22nd)



Sharing Insights on HSR Projects Worldwide



Discussion Session

<Welcome Reception> (October 22nd)



Toast by Che SHIH, Chairman, Taiwan High Speed Rail Corporation, Taiwan



Introductions of Speakers



Networking Session



Networking Session

<Grand Reception> (October 23rd)



Opening Remarks by Masafumi Shukuri, Chairman of IHRA



Toast by Tom Schieffer, Former U.S. Ambassador to Japan



Networking Session



Networking Session

<Technical Visits> (October 24th)



Visit to TAKANAWA GATEWAY CITY



Visit to Construction Site of SCMAGLEV



Visit to Railway Technology Research Institute



Visit to Nippon Signal

<SCMAGLEV Ride Tour> (October 25th)



At: Yamanashi Maglev Center



Scene from the SCMAGLEV ride

<Related events>

October 22nd (Wed)
9:00-15:15 Shinkansen Briefing & Tour
15:30-17:30 IHRA Advisory Board Meeting
19:00-21:00 Welcome Reception

October 23rd (Thu)
9:00-17:00 Main Meeting
18:00-18:45 Poster Session
19:00-21:00 Grand Reception

October 24th (Fri)
9:30-19:30
Technical Visits

October 25th (Sat)
9:30-19:30
SCMAGLEV Ride Tour