

# The Schematic Diagram of Technical System

This schematic diagram was created for the purpose of helping to explain the railway regulations and standards as well as relevant documents concerning the railway technology system in Japan.

Details of the railway technology system are summarized in the "Technical Standard System Table".

**Purpose of the technical standard**  
**Ensuring safe and stable transportation**

- Preventing train collisions
- Preventing train derailment
- Preventing train fire
- Preventing accidents at level crossings
- Preventing fatal and injury accidents of passengers and the public
- Preventing transport disruption

## Railway Operation Act

Barrier-free related standards  
 Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc.

Standards relating to driving speed improvement  
 Article 35 of the Ordinance for Enforcement of the Railway Business Act

## Ministerial Ordinance to Provide the Technical Standard on Railway

**Public Notice**

- Public Notice on Periodic Inspection of Facilities and Rolling Stock
- Public Notice on Railways with Special Structure\*

*Technical Regulations*

\* Monorails, AGTs, trolley buses, magnetic levitation trains, etc.

### Circular Notices

- Design Standards for Railway Structures such as earth work, bridge, and tunnel
- Maintenance Standards for Railway Structures such as earth work, bridge, and tunnel

### Approved Model Specifications for Ministerial Ordinance to Provide the Technical Regulatory Standard on Railway

**Japan Industry Standard (formulated as national standards)**

Manual concerning measures for Speed-up including Test methods and Criteria of Conventional Railways (Circular Notices)

Noise related standards

- Environmental Quality Standards for Shinkansen Superexpress Railway Noise
- Guidelines for Noise Abatement Measures in the Construction of New Lines and Large-scale Improvement of Conventional Railways
- Manual for conventional railway noise measurement

**Voluntary Standards formulated by related Railway Industry Associations (JRIS (Japan Association of Rolling stock Industries Standard), JERS (Japan Electric Railway Standard), etc)**

## Know-how

**Project formation**

◎ Railway applications -- Railway project planning process -- Guidance on railway project planning (ISO/TR 21245)  
 Based on the principle of ISO 21500 (Guidance on project management), this standard summarizes the points of project planning while incorporating railway-specific characteristics.

● Key to implement successfully sustainable urban railway (KISS-RAIL 2.0) [Japan Railway Technical Service, 2020]  
 Based on Japan's urban railway system, this book summarizes the points of the commercialization of urban railways from the perspective of railway business operators for the purpose of realizing planning, construction, and sound and sustainable operation of urban railways in the developing countries.

○ Japan's urban transportation systems [Japan Railway Technical Service, 2020]  
 This booklet introduces the features of the Japanese urban railway system (MRT, LRT, AGT, Monorail) and their achievements of overseas expansion.

○ Urban Transportation Systems in Japan [Japan Overseas Railway System Association, 2018]  
 This booklet is to introduce the Transport characteristics and its advantages, technical characteristics and concrete introduction examples of various track-based urban transportation systems those are active in Japan.

It also introduces the process leading up to the introduction of the most suitable systems while mentioning about research, planning and evaluation of the project.

○ Japan's Urban Railway Systems [Japan Overseas Railway System Association, 2017]  
 This booklet is to introduce the superiority and overview of Japan's urban railway systems, the features of rolling stocks those are active in Japan and overseas. It also introduces rolling stock equipment technology, passenger services technology, operation and maintenance technology etc.

**Technical specifications**

● Proposed Basic Composition of the Technical Specifications for Overseas Rolling Stock (Revised STRASYA) [Japan Railway Technical Service, Ministry of Land, Infrastructure, Transport and Tourism, 2020]  
 This booklet summarizes the standard specifications of the rolling stocks of the urban railway.

● STRASYA (STandard urban Railway SYstem for Asia) [Japan Railway Technical Service, 2004]  
 This booklet summarizes the standard system of the urban railway that had been developed based on the Japanese railway technology and know how.

● Japanese Standard Automated Guideway Transit [Japan Transportation Planning Association, 2019]  
 This booklet is based on the standard Automated Guideway Transit using rubber tires (AGT) for the domestic market, which was formulated in 1983, and summarizes the basic specifications of multiple models of AGT vehicles, alignments, tracks, etc. that are useful for overseas expansion.

**SHINKANSEN**

○ SHINKANSEN [Japan Overseas Railway System Association, 2016]  
 This booklet is to introduce the specific features and advantages of the SHINKANSEN to those involved in planning and introduction of High Speed Rail System.

○ THE SHINKANSEN [Japan Railway Technical Service, 2016]  
 This booklet aims to promote the Japanese Shinkansen overseas.

○ SHINKANSEN-The Half Century [Kotsu Kyoryoku Kai Foundation, 2015]  
 Based on the Japanese version of "50 Years of Shinkansen", this book summarizes the history from "The Birth of the Tokaido Shinkansen" to "The Future of the Shinkansen" in the fields of construction, transportation, vehicles, maintenance, and safety of all Shinkansen in Japan. In particular, it details a safety system that has maintained zero passenger casualty from train accidents for 50 years since its opening.

◎ International standards or technical reports  
 ● Documents prepared by the government or committees in which the government was involved as a member  
 ○ Documents prepared mainly by private entities

• Guidelines to Improve Accessibility of Transport Facilities of Japan  
 • Guidelines to Improve Accessibility of Transport Vehicles of Japan

• Design Standards for Railway Structures such as earth work, bridge, and tunnel, and Commentary  
 • Maintenance Standards for Railway Structures such as earth work, bridge, and tunnel, and Commentary

Manual concerning measures for Speed-up including Test methods and Criteria of Conventional Railways and Commentary