

O&M Operation & Maintenance worldwide

Hitachi Rail STS acts as a recognized provider of operation and maintenance (O&M) services for a wide range of transportation systems designed and delivered worldwide, including turnkey, signalling infrastructures, vehicles, buildings and facilities.

Our O&M services are enhanced by an extensive experience in the planning, design, and construction of all major forms of transportation infrastructure, and by a concurrent engineering approach that guarantees a strong interaction between O&M provider and Design and Build (D&B) team from the early stage of the project and for the whole life of the system.

O&M keys of success and added value for our Customers:

- Design for Support: leveraging on the experience as Operator, we design solutions that are fit for purpose longer, focused on In-Service requirements and Operating constraints and enable functionalities for better service provisioning;
- O&M program improvement: Handling the field feedback as a proactive base of knowledge, Hitachi Rail STS provides a critical perspective in developing an effective O&M program that promotes safety, efficiency, system performances and passenger satisfaction reducing long-term operating costs
- Single point of contact for the system's whole life: acting as both D&B contractor and O&M Provider, Hitachi Rail STS guarantees to his Clients a smooth

transition in the revenue service managing the hand-over obligations and responsibilities still under a unique contractor;

- Effective O&M staff mobilization: the key people of the upcoming O&M organization can be involved early in test & commissioning stage, familiarize with the system and maximise their expertise through an on the job training and knowledge sharing before the revenue service;
- Escalation process for major faults: our O&M services can guarantee a 24/7 technical support from Design Build team who can be promptly activated for major fault resolution through remote and call-out support.

Hitachi Rail STS O&M expertise covers:

- Development and implementation of asset management and maintenance programs
- O&M staff mobilization and training
- Development of depot and facility infrastructures implementation of maintenance programs
- 24/7 remote and call-out technical support delivery
- Spares and repairs management
- Obsolescence management.

Our O&M projects range from Europe to UAE, South America, USA, India and Australia, among others. Whether provided as stand-alone services, or part of a suite of services supporting project delivery and operation, Hitachi Rail STS O&M services assist clients in protecting vital and safe transportation infrastructure assets and extending their operational life.



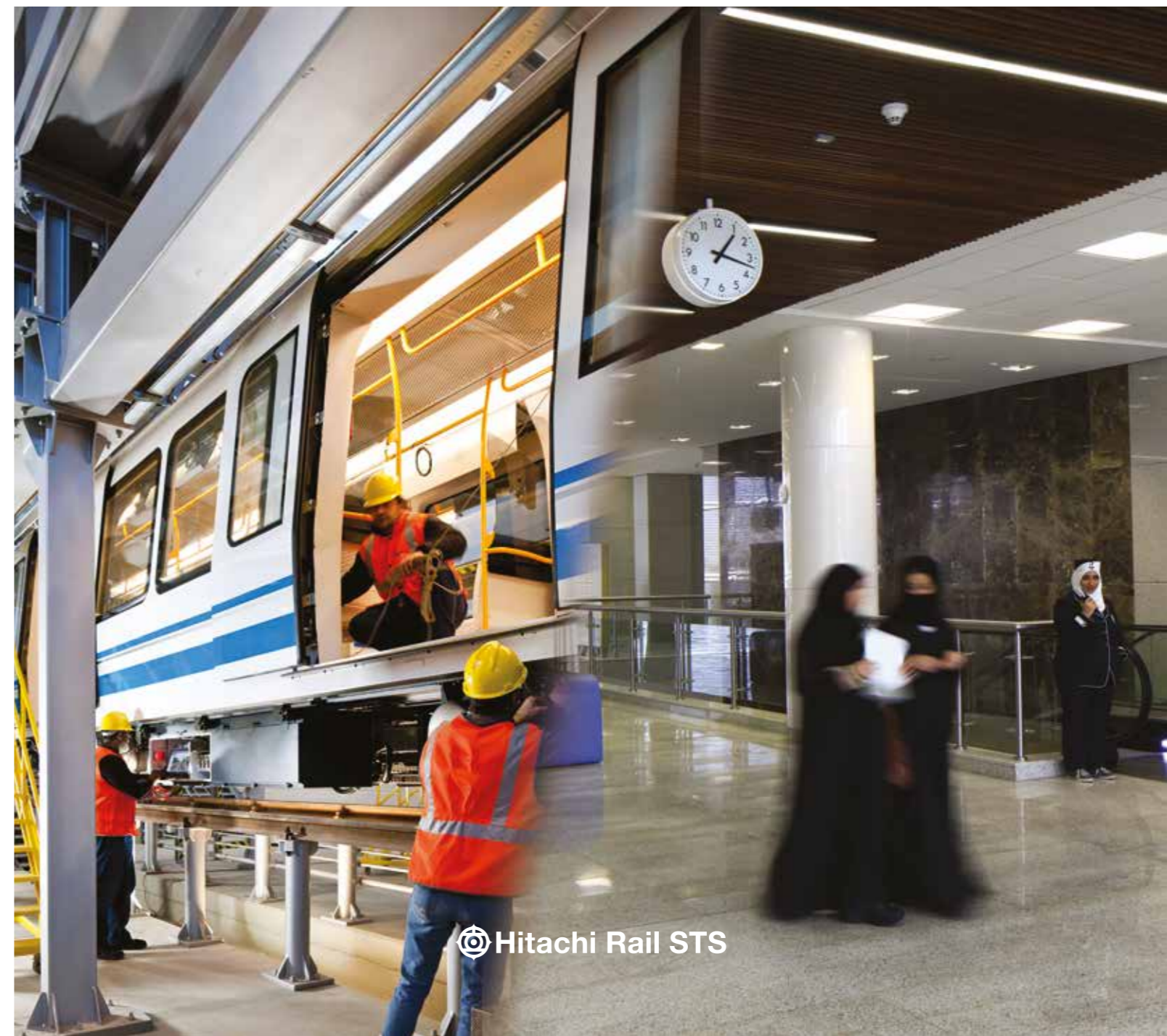
Capabilities

Turnkey

Transportation Systems and in particular Driverless Metro are now a consolidated product with fully automated functions.

Today Automatic Transportation Systems up to Driverless Fully Unmanned Metro (UTO) represent the most advanced and effective solutions for higher passenger expectations.

Different Client approach, Country regulations, contract organization with multiple interfaces, challenging construction schedule, require technological leadership and worldwide experience.



High performance levels, transport capacity, safety and service availability require a structured integrated approach to the design, that transportation engineers can gain only after years of experience.

Main contractor capability and Construction Organization leadership have to be put in place to drive the construction team during all implementation phases and moreover during the warranty period or during Operation & Maintenance period, which is frequently requested requested by turnkey contracts.

The recognition, by Client and Authorities, of the necessity of acquired knowledge and seriousness to face important technical and contractual issues that are always present in complex contracts as Transportation turnkey solutions, has become a matter of fact.

A wide suppliers field, located in several countries with a background of years of common activities is an important key to have continue synergies to face and solve the Project's challenges and, at the end: meet the expectations, achieve the Client satisfaction and its acceptance .

The most important of our values is the Customer satisfaction, one of the levers is to have a capable and organized On Site Project Team to interface one-on-one with the client organization.

As soon as a Contract is awarded we mobilize our staff to create a Local Team (resident in the country where the work will be carried on) who will take care of Management, Design, Planning, Purchasing, Logistic, Construction, Health&Safety, Environment, RAMS, Installation, Commissioning, Start up, Warranty, and O&M (if requested).

We have the capabilities to cover the role of General Contractor, or Leader in Joint Ventures with Civil Work Companies and Rolling Stock manufacturers.

Turnkey Projects in the railway business normally require a long effort that a company has to do in a foreign country with strong work load and elevated financial commitments: vision and company solidity are essential in order to overcome these difficulties that are present from the tender up to the end of the construction phase.

Turnkey Projects require a significant amount of work and a high level of expertise to manage:

- Requirements (Traceability, Allocation, Validation)
- Interfaces (technical between Subsystems or Procedural with all stakeholders).

This is done through the use of primary tools shared with the Project Owner who can check timely "on line" the progress.

Market is also changed with an improvement request of brownfield solution where the technical and

organizational criticalities are empathized due to implementation of new solutions on existing and in service system.

This capability is the result of years of work and interaction among different projects, country and authorities that permits a growing up on the Safety, RAM and more over system items that are the hinges of a high technological project.

Simulation & Requirements management tools, system approach with problem solving attitude, engineers with appropriate experience are part of the Turnkey capability of our company.

Methodology & Quality: to face frequently new or different types of problems the key is to have consolidate methodologies, such as process and procedures, these will permit a rapid and constant progress and resolution, using the contributions of different and highly specialized teams working in parallel on several projects.

The definition of project processes and procedures are the quality tasks always needed and implemented to improve the Project's Team efficiency.

This background of procedures are the result of work organisation and company stability in term of objective, guidance and persons.

For a company to get to stay in the system market is the result of years of work that have led to the growth of the skills of their employees.

Hitachi Rail STS is the worldwide leader in designing and building UTO Turnkey Automatic Transportation Systems, with several projects around the world, for instance:

- Copenhagen M1/M2
- Riyadh Princess Noura
- Brescia Metro
- High Speed lines
- Milan Line 5
- Rome Line C
- Light Rails System (Dublin, Florence, Genoa, Aarhus)
- Metrogenova
- Naples Line 1 and 6
- Thessaloniki Metro
- Taipei Circular Line
- Copenhagen City Ringen
- Riyadh Metro Line 3
- Honolulu
- Milan Line 4
- Metro Lima
- Glasgow Metro
- Sanying Metro



The worldwide leader in designing and building UTO Turnkey Automatic Transportation Systems.

