Technical Review Special Edition: Commercial Aviation & Transportation Systems

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Welcome to the special edition of the MHI Technical Review featuring our Commercial Aviation & Transportation Systems. Our Commercial Aviation & Transportation Systems domain offers advanced systems in aviation and transportation such as transportation systems, commercial ships and civil aircraft on land, sea and air. With a high level of safety, assured quality and reliability backed by technologies built up in each field, the domain contributes to maintaining social infrastructure in today's society, as well as developing means to transport the commodities that are the necessities of everyday life. This edition features four products and technologies among the recent achievements in civil aviation and land transportation system businesses in the Commercial Aviation & Transportation Systems domain.

The global civil aircraft market is forecast to see approximately 5% annual growth to double in scale to five trillion dollars in 20 years. Behind this growth are the popularization of aircraft as a means of travel as a result of growing passenger demand particularly in emerging nations and the rise of Low Cost Carriers (LCC), as well as increasing demand for new aircraft models to respond to heightened environmental awareness and requirements for fuel efficiency improvement.

Our Commercial Aviation & Transportation Systems domain helps to establish a global aviation transportation infrastructure through our business of the joint development of aircraft under international cooperation and production, as well as the civil aeroengine business and the development of the next-generation regional jet, the MRJ. Selecting among the products and technologies in those businesses, this edition provides two topics which are updates for the currently-under-development MRJ and reports on the formation and utilization of the industrial cluster in the civil aeroengine sector.

The global railway transportation systems market is seeing growth of 2% to 3% per year, mainly supported by solid demand for infrastructure development in Southeast Asia, South America and the Middle East, and currently a market scale of 22 trillion yen is expected. Our Commercial Aviation & Transportation Systems domain is globally involved in large urban transportation system’s projects and undertakings in high-speed railway plans around the world. To receive more orders, we integrated functions of Engineering Procurement Construction (EPC) held by each domain (transportation systems, chemical plants, etc.) into a new organization and set up the Engineering Headquarters in April 2016. The new organization aims to further enhance the total EPC execution capability through commonalizing the experience, expertise and human resources dispersed across the company.

Featured in this edition from transportation systems are two topics. The MIHARA (Multipurpose Integrated Highly-Advanced Railway Applications) Test Center, the nation's first comprehensive test facility for railway transportation systems, started operation in October 2014. The center's

recent advancements in terms of the facility itself and its utilization are introduced. The other topic is AGT (Automated Guideway Transit), which features high environmental and running performances, attaining the maximum speed of 120 km/h as a new TOD (Transit Oriented Development) solution for urban transportation issues.

The aircraft industry has many supporting industries and exerts a ripple effect in technology in far and wide, and therefore the industry is expected to function as the driving force to enhance our country's manufacturing. Meanwhile, transportation systems are being developed around the world as infrastructure to maintain an affluent and secure society. If our country pursues a strong position in the world, technological development must meet global standards. We will undertake the development of technologies on a step-by-step basis in a steady manner in order to secure international competitiveness strong enough to compete with Europe and the U.S., as well as emerging nations such as those found in Asia. We would appreciate your understanding and ongoing support for our activities.