



MITSUBISHI HEAVY INDUSTRIES, LTD.

Company Profile

Shingo Ueda

Senior Vice President, Fellow
Chief Regional Officer, Latin America

Curitiba on 29th August, 2017

MITSUBISHI HEAVY INDUSTRIES, LTD.



1. Company Profile

2. Principle Products and Operation in Brazil

3. Introduction of Rail Transportation System

4. Principle Projects of Urban Rail Systems

5. Request for Further Collaboration

1. Company Profile

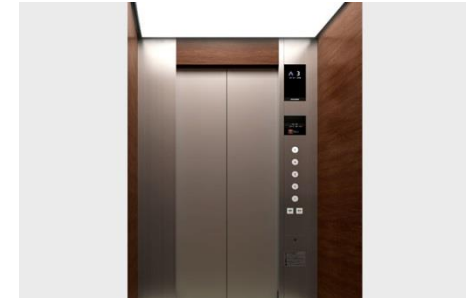
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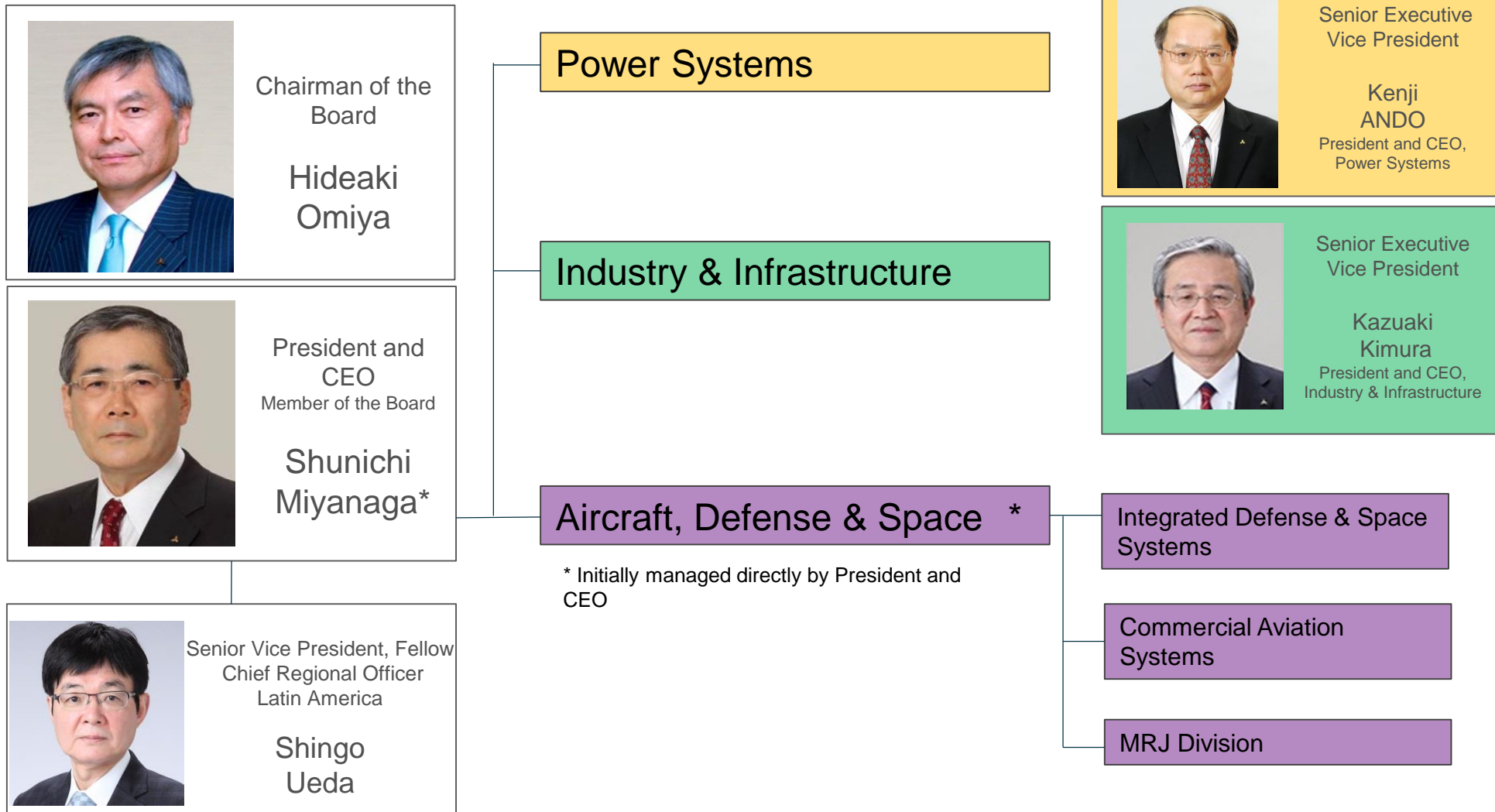
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Mitsubishi Group is the largest Japanese conglomerate, which shares the Mitsubishi brand, trademark and legacy since 1870. It consists of 29 core companies and branch companies.





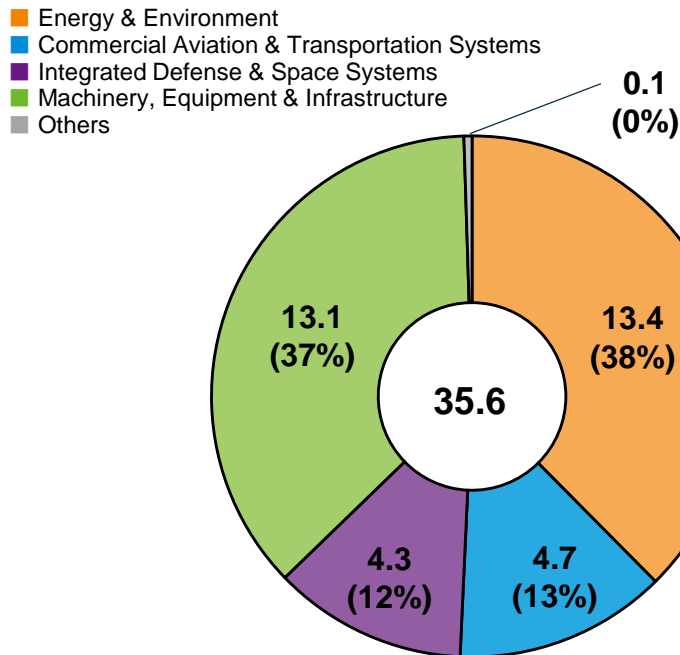
* Indicates a Representative Director

FY2016 Facts & Figures

Foundation	July 7, 1884
Capital *1	\$2.4 bil
Orders Received *2 (consolidated basis)	\$38.9 bil
Net Sales *2 (consolidated basis)	\$35.6 bil

Research & Innovation Centers	1
Domestic Works & Plants	11
Overseas Offices	8
Employees *1	consolidated basis 82,728 non-consolidated basis 16,824

Breakdown of Net Sales



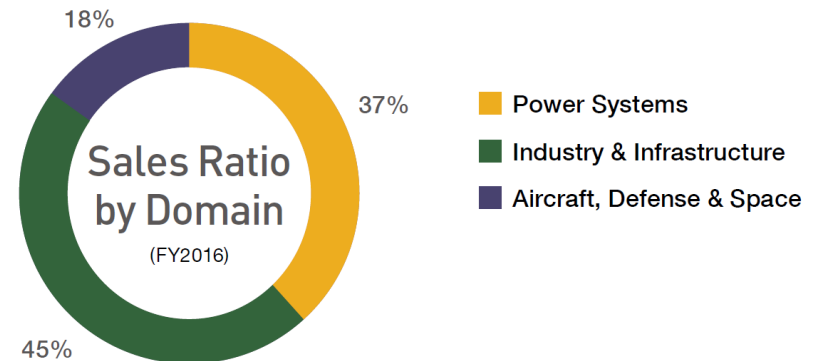
Group Companies *1 (consolidated basis)	domestic 74 overseas 158
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* 1 As of March 31, 2017

* 2 FY2016

Exchange rate: US\$1.00=¥110

(Reference) Sales Ratio by New Domain



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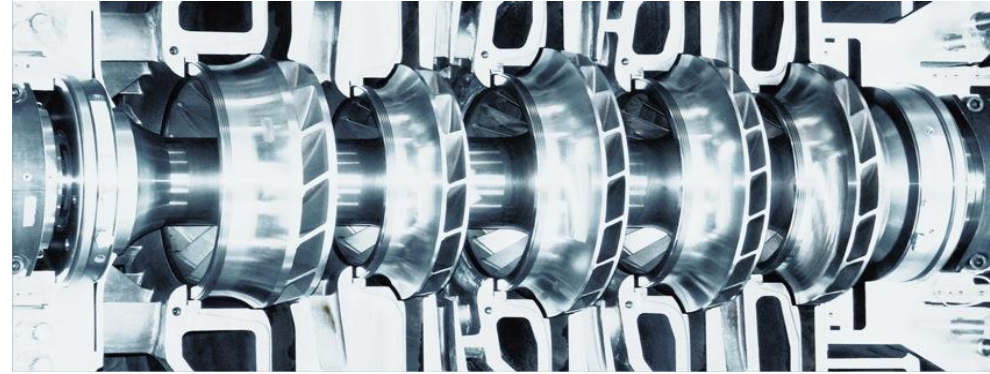
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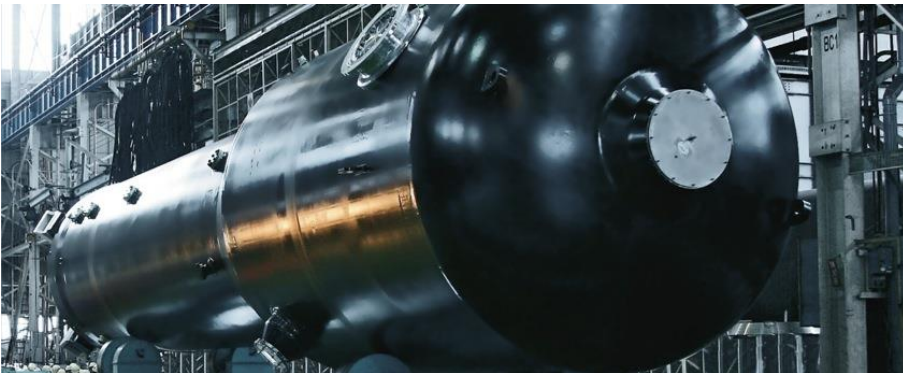
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**THERMAL POWER
GENERATION SYSTEMS**



COMPRESSORS



**NUCLEAR ENERGY
SYSTEMS DIVISION**



**RENEWABLE ENERGY
BUSINESS DIVISION**



CHEMICAL PLANTS



ENVIRONMENTAL PROTECTION SYSTEMS

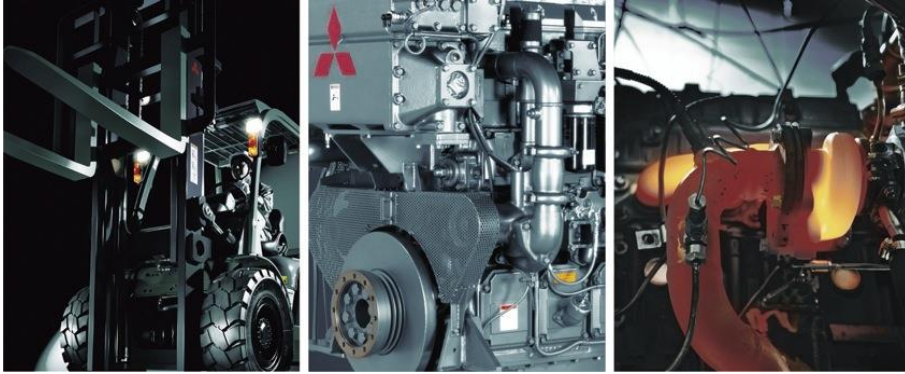


SHIPBUILDING & OCEAN DEVELOPMENT

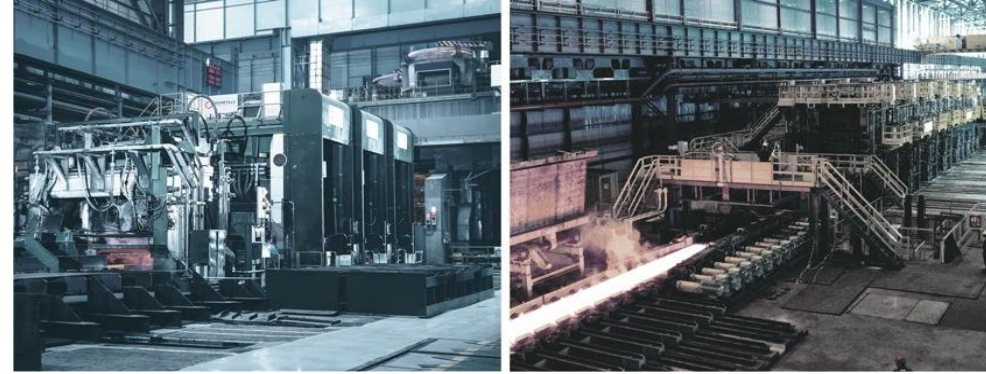


LAND TRANSPORTATION SYSTEMS





**MATERIAL HANDLING EQUIPMENT /
ENGINE & ENERGY / TURBOCHARGER**



METALS MACHINERY



MACHINE TOOL



**AIR-CONDITIONING &
REFRIGERATION**



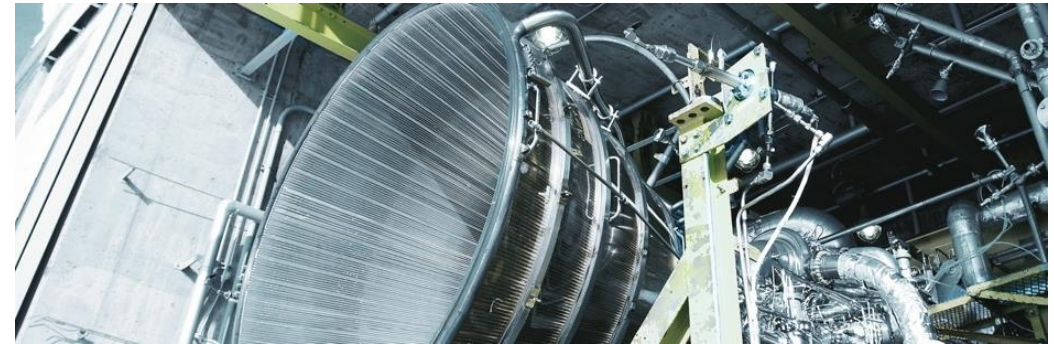
COMMERCIAL AIRPLANES



AIRCRAFT DIVISION



MRJ



SPACE SYSTEMS DIVISION



CBC INDÚSTRIAS PESADAS S.A.

- ◆ **Manufacturer of Industrial Boiler, Heat Exchanger etc...**
- ◆ **Founded in 1955 and fully owned by Mitsubishi Group since 1963**
- ◆ **Group company of Mitsubishi Hitachi Power Systems, Ltd. in 2014,**



Factory in Jundiaí, São Paulo



**Chemical Recovery Boiler
Klabin S.A. Ortigueira, Paraná**



Biomass Boiler

Heat Exchangers





MHI Compressor do Brasil Ltda.

- MHI Compressor do Brasil. Ltda.(MCO-B) started as sales and aftersales service company dedicated to MHI Compressor business in 2016.
- Company headquarter was established in Piracicaba inside the factory of NG Metalurgica Ltda. as the business partner.
- New entity meets aftersales demands, and is responsible for after service of more than 100 units of MCO's compressors / steam turbines in Brazil as well as in South America.



Compressors for FPSO



Compressors for Gas pipeline



Piracicaba Factory of NGM where MCO-B office locates

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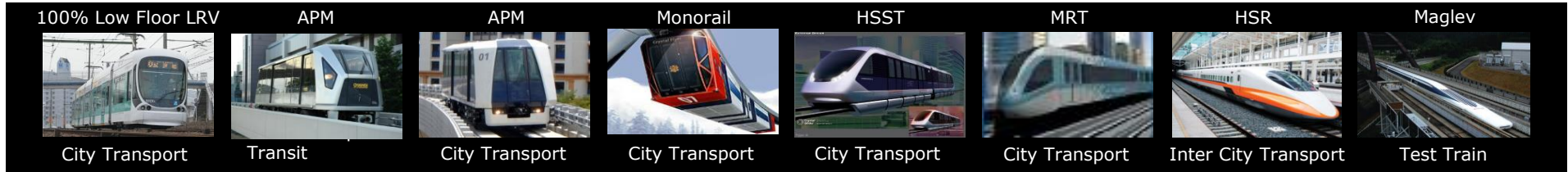
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Broad Range of Products/Projects Coverage



Low/Medium/High Speed : Airport/City/Inter-City Transport : Manual/Full Automatic Operation

APM

Automated People Mover



- Automated Guideway Transit System
- Driverless – Full Automatic Operation
- Flexible and Sophisticated Design
- High Performance
- “Industrial Good Design” Awards

We integrate systems, coordinate interfaces, manage the project, and find solutions for the PROJECT SUCCESS !

- Rolling Stock / Vehicles
- Signaling System
- Communications Systems
- Power Distribution System
- Track & Wayside Systems
- Depot / Station Equipment

Metro



- Full Automated System
- High reliability & Availability
- Eco-friendly and User-friendly system
- Energy saving performance
- Fit-to-city-view Design



LRT/ Asia & Domestic



Manila MRT Line 1



Manila MRT Line 3



Manila MRT Line 2 Depot



Hiroshima Green Mover Max



Indonesia Depok Depot



Malaysia Klang Valley MRT/
Track Work

Middle East



Dubai Metro LRT



Doha Metro

High Speed Rail



Taiwan High Speed Rail

Automated People Mover



Sengkang / Punggol LRT



Tokyo Yurikamome



Macau LRT

South America



Sao Paulo Metro Line 6

Delivery Records of Airport APMs

United States



Tampa Int'l Airport APM
(New Line)



Orlando Int'l Airport APM
South (New Line)



Orlando Int'l Airport APM
A1/A3
(Replacement Line)



Miami Int'l Airport MIA
Mover APM



Miami Int'l Airport North
Terminal APM



Dulles Int'l Airport APM



Atlanta Int'l Airport APM



Middle East

Asia



Dubai Int'l Airport APM



Hong Kong Int'l Airport APM
(Additional Vehicle)



Hong Kong int'l Airport APM



Changi Int'l Airport APM



Incheon Int'l Airport APM

Operation & Maintenance Record



Metrô de Dubai



Linha 3 MRT Manila



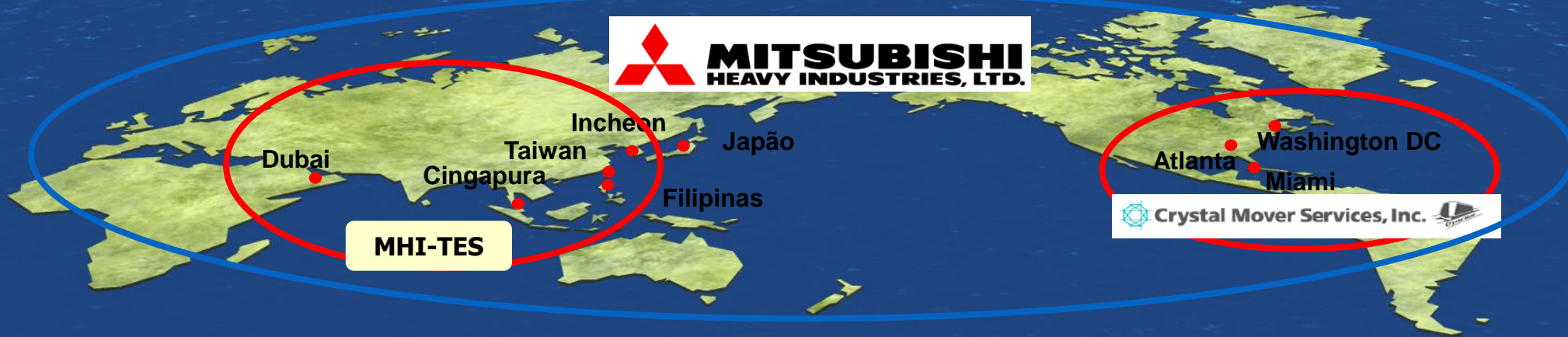
Trem de Alta Velocidade de Taiwan



APM do Aeroporto Internacional de Changi



APM do Aeroporto Int. de Incheon



APM do Aeroporto Internacional de Dubai



APM MIA Mover do Aeroporto Int. de Miami



APM do Terminal Norte do Aeroporto Int. de Miami



APM do Aeroporto Int. de Dulles



APM do Aeroporto Int. de Atlanta

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Longest Fully Automated Driverless System in the world



MHI's Responsibility

- Consortium Leader(Civil+System)
- Project Management
- System Integration
- Supply of all E&M System

Successful Completion in 4 years only, including Civil Works

System Description	
Length	Red Line : 51.2km (29 stations) Green Line : 23.8km (20 stations)
Number of Cars	395 cars
Passenger Capacity	Red Line : 11,010 pphpd Green Line : 6,394 pphpd
Maximum Speed	90km/h
Completion	Red Line : 2009 Green Line : 2011



Eco-friendly & User-friendly Airport Transit

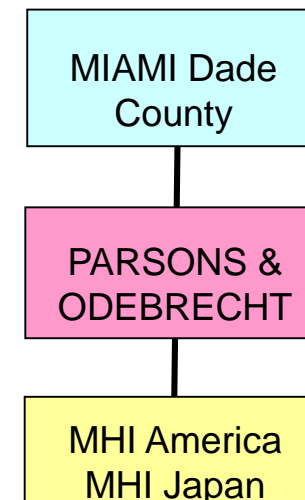


MHI Responsibility

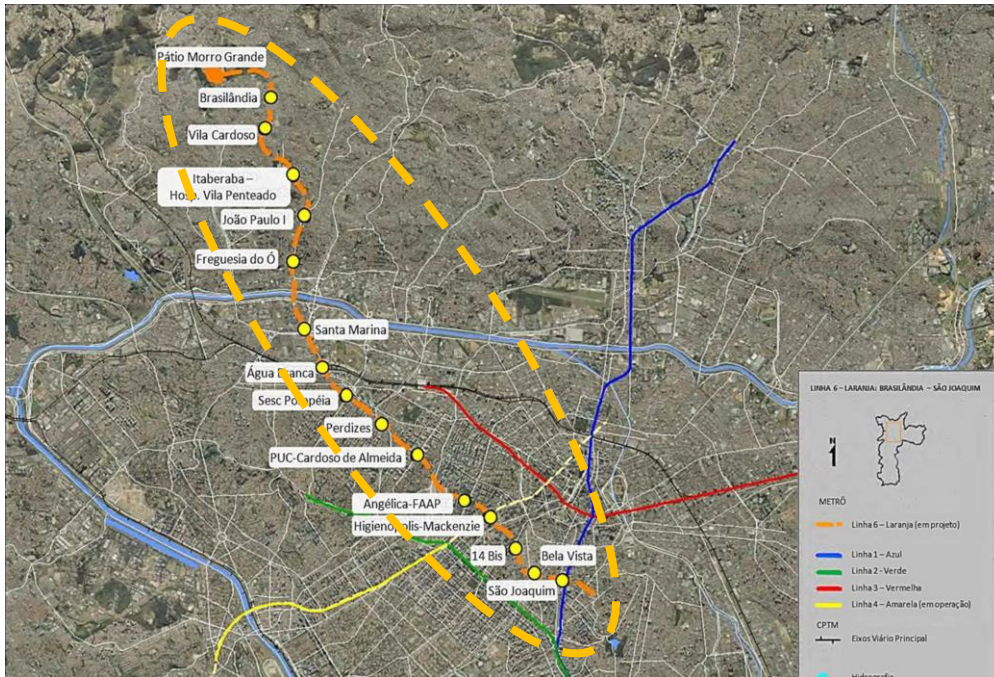
- System Integration
- Supply of E&M System
- Vehicle Manufacturing
- Operation and Maintenance Service

**Communication Equip. and SCADA
provided by GE**

System Description	
Length	2km (2 stations)
Number of Cars	8 cars
Capacity	3,300 pphpd
Maximum Speed	60 km/h
Work Completion	2011



1st Full Turnkey Metro PPP Project in Latin America



System Overview

Length	15.3km (15 stations)
Number of Cars	22 trains (6 car/train configuration)
Passenger Capacity	633,300 User / Day
Work Period	6 years for EPC 19 years for Concession

São Paulo State Government

Concessionaire

EPC Contractor (Rail Systems)

- Project Management
- System Integration
- Design-Build
- Supply of Major Systems
 - Signalling
 - Tele-communication
 - Power Supply, etc.



1. **Successful Collaboration by;**
 1. **Advanced Japanese Rail Technology**
 2. **MHI's Project Management & Engineering**
 3. **Capable Brazilian Engineers, Staff & Products**



2. **MHI has established Project Team in Brazil, working together with 10 Japanese and 50 Brazilian Staff and Engineers.**

All hope to work with MHI again.

Some Brazilian Engineers are also working for MHI's projects in USA and Asia, today.

3. **Eng'g Work has already completed in success, and ready for manufacturing and construction.**



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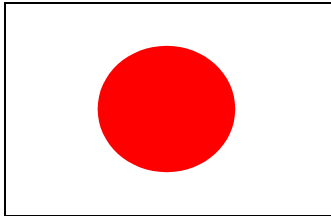
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Followings are essential to introduce Japanese advanced technology, which contributes to the development of infrastructure in Brazil.

- 1. Technology and Quality itself need to be fairly analyzed and evaluated.**
- 2. Adequate Biz Environment shall be established.**
 - 1. reasonable Local Contents requirement**
 - 2. reasonable Duty & Taxation**
 - 3. Currency Risk mitigation for foreign supplier**
- 3. Project Execution in smooth and timely manner.**



MOVE THE WORLD FORWARD

Muito Obrigado!

**MITSUBISHI
HEAVY
INDUSTRIES
GROUP**