



JR East and its Experience in HSR

Tsugio SEKIJI

**Representative Director
Executive Vice President**

East Japan Railway Company

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- 1. Outline of JR East**
- 2. Features of Shinkansen (HSR)**
- 3. Safety of Shinkansen**
- 4. Economic Benefits**
- 5. Conclusion**

1. Outline of JR East

2. Features of Shinkansen (HSR)

3. Safety of Shinkansen

4. Economic Benefits

5. Conclusion

Outline of JR East

JR East is the largest passenger railroad company in JAPAN

- Network: 7,513 km
- No. of Passengers: 17 million /day
(the largest in the world)
- No. of Trains: 13,000 /day
- Operating Revenue: \$30.9 billion /year
- Net Income: \$1.3 billion /year
- Total Stock Market Value: \$25.4 billion
- No. of Employees: 71,729
- No government subsidies



Greater Tokyo area

*Numbers are as of FY ended March 31 , 2012

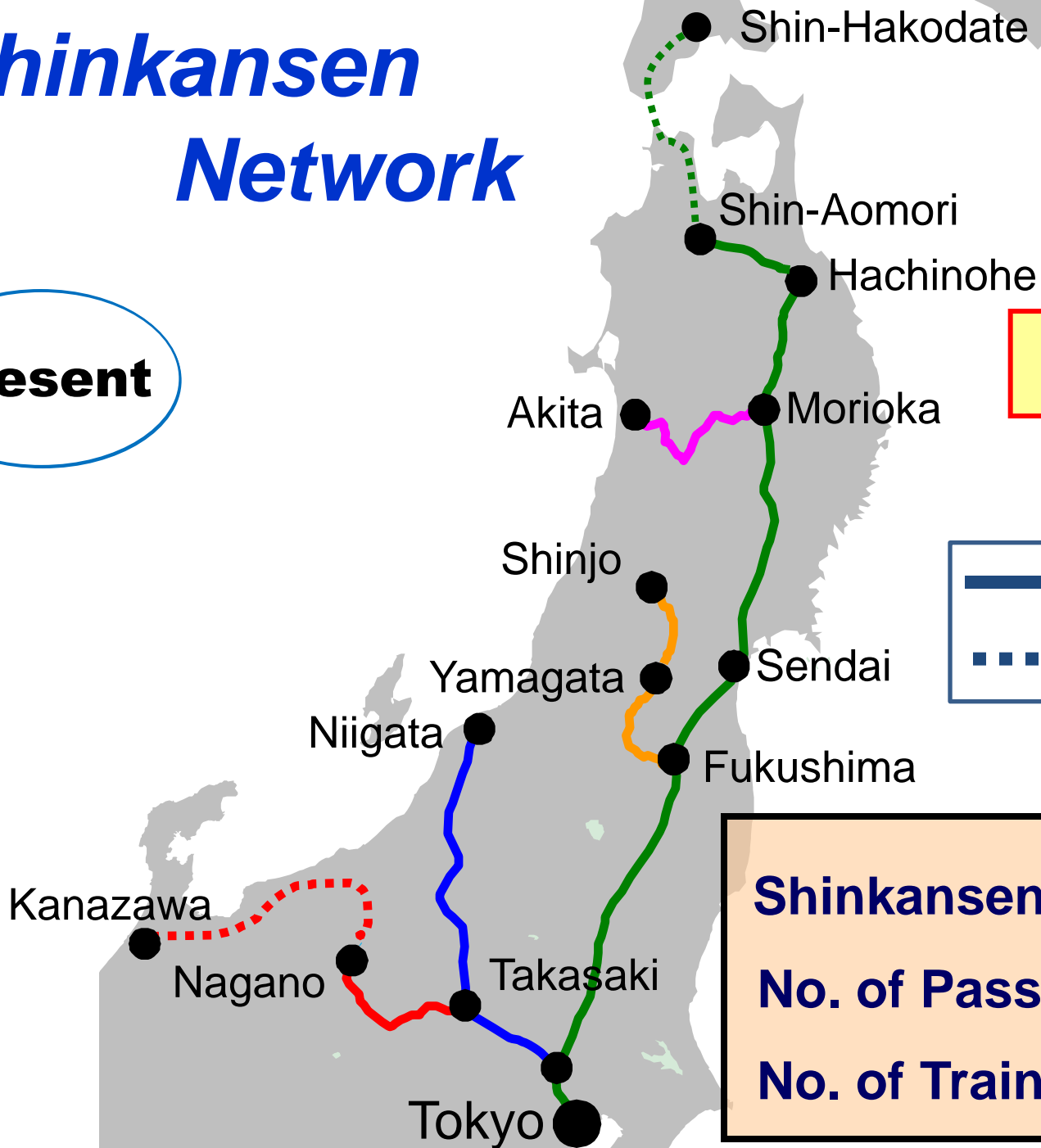
*Conversion into U.S. dollars at the rate of ¥82 to U.S.\$1

Outline of JR East

Shinkansen Network

Present

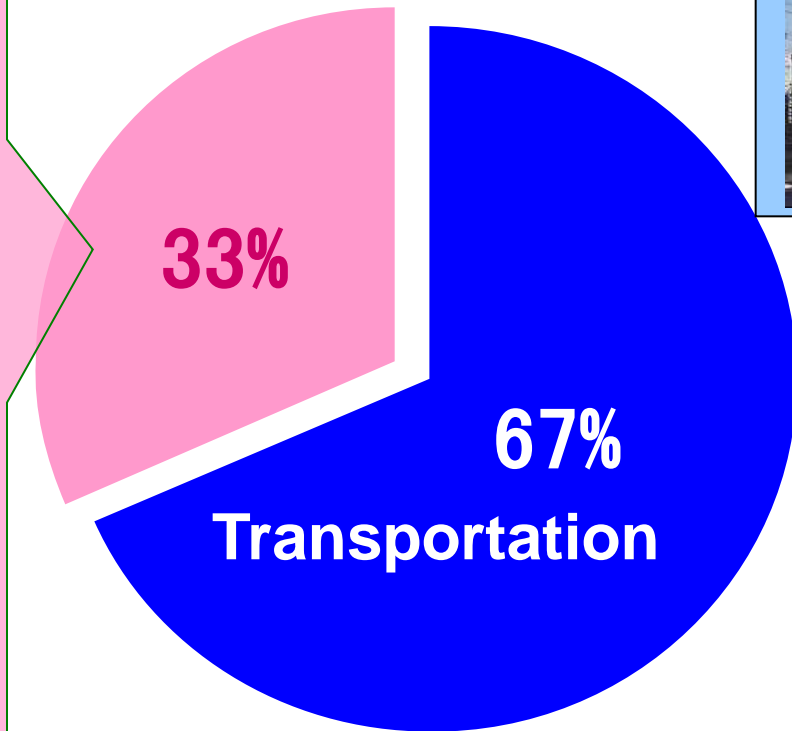
5 directions



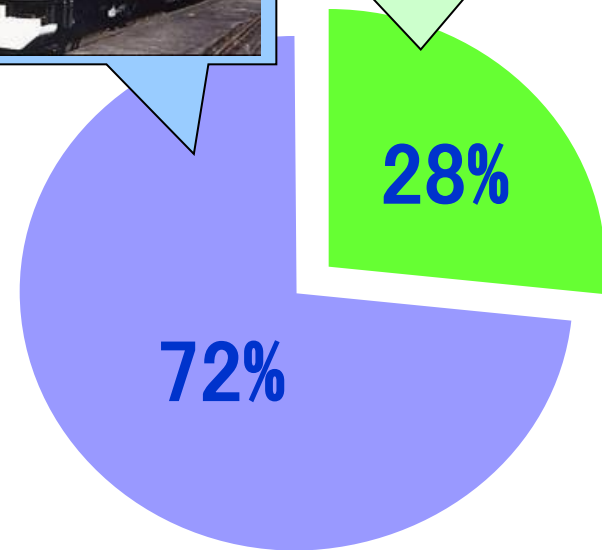
— in Operation
- - - under Construction

Shinkansen Network: 1,411km
No. of Passengers: 241,000 /day
No. of Trains: 327- 415 /day

Rail and Non Rail Business Revenue



**JR East
Group Total
\$ 30.9 billion**



**Transportation
Revenue
\$ 20.8 billion**



As of Mar.31.2012

2 JR East Group companies started full operation in April 2012



Japan International Consultants
for Transportation Co., Ltd. (“JIC”)

Global Consultancy

Consultancy through all the stages
of overseas railroad projects



Railcar Manufacturing Business

Total transport engineering firm manufacturing
rolling stock, cargo containers, and turnouts

Table of Contents

1. Outline of JR East

2. Features of Shinkansen (HSR)

3. Safety of Shinkansen

4. Economic Benefits

5. Conclusion

Features of Shinkansen (HSR)

1 Safety

2 High Speed Operation

3 Frequent Service

4 Punctuality

5 Comfort

6 High Capacity

7 Environmentally-friendly

High Speed Operation

Series E5 “Hayabusa” Operation launched in March 2011

Maximum commercial speed of 320km/h in March 2013

Series E5 (10 Cars , Total capacity 731 persons)



Frequent Service and Punctuality



列車名 Train	番号 Train No.	時刻 Time	行先 Destination	番線 Track	記事 Remarks
HAYATE KOMACHI	21	13:56	HACHINOHE AKITA	21	16 Cars
ASAMA	527	14:04	NAGANO	20	8 Cars
Max YAMABIKO	TSUBASA 119	14:08	SENDAI YAMAGATA, SHINJOU	22	15 Cars
YAMABIKO	211	14:20	SENDAI	21	10 Cars
Max TOKI	327	14:32	NIIGATA	23	8 Cars
YAMABIKO	57	14:36	MORIOKA	21	10 Cars

Passenger information display in Tokyo station

- 5** Destinations from Tokyo station
- 400** Trains per day
- 4 min.** Minimum train interval
- 12min.** Turn-back time at Tokyo Station
- Less than 1 min.** Average delay per train



Comfort

“First Class” Car with Excellent Service



 **GranClass**

on the Series E5



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Safety of Shinkansen (HSR)

Safety is the top priority of railroad operation, especially HSR.

1 Thorough Maintenance

2 Reliable System

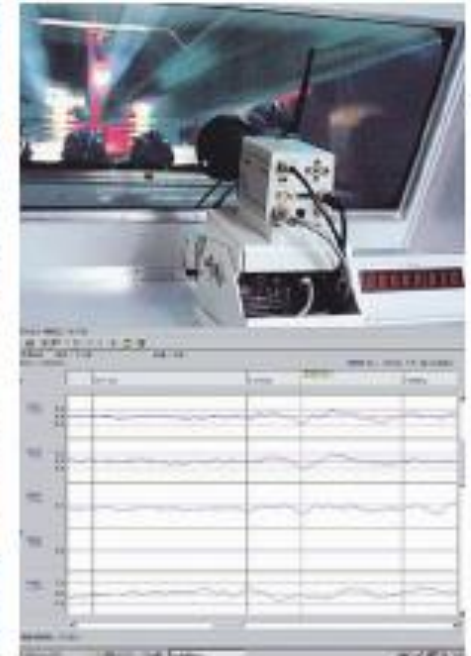
3 Disaster Countermeasure

4 Adequate Education and Training

0 fatalities since opening in 1964

Thorough Maintenance

Infrastructure Maintenance



East-i (Shinkansen electric equipment and track inspection car)



Rail grinding machines



Inspectors in action on the East-i

Thorough Maintenance

Rolling Stock Maintenance



Inspection of pantographs



Removing bogies from cars



Equipment check through monitors in drivers' cab



Underfloor equipment inspection

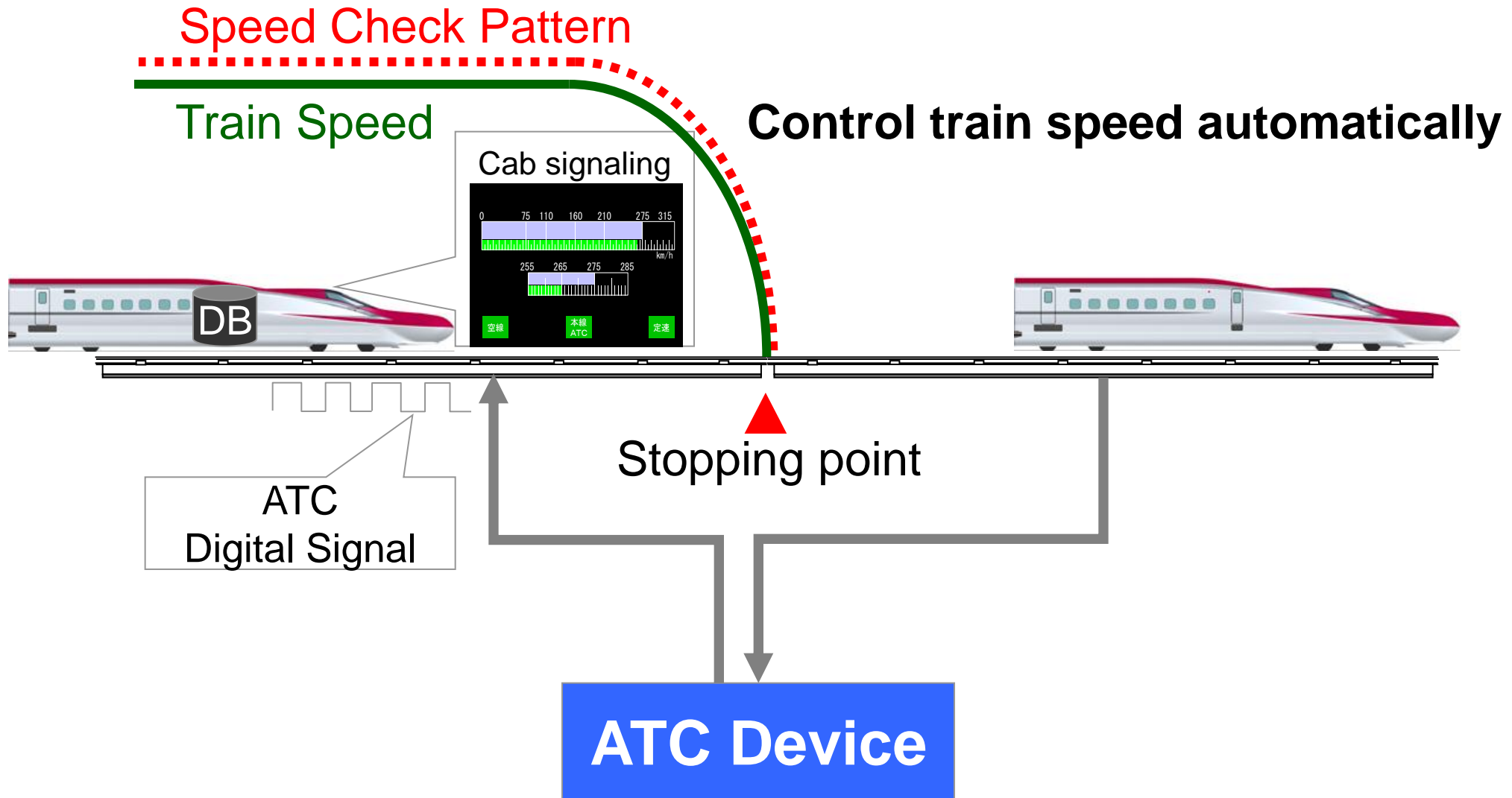


Ultrasonic inspection of axles



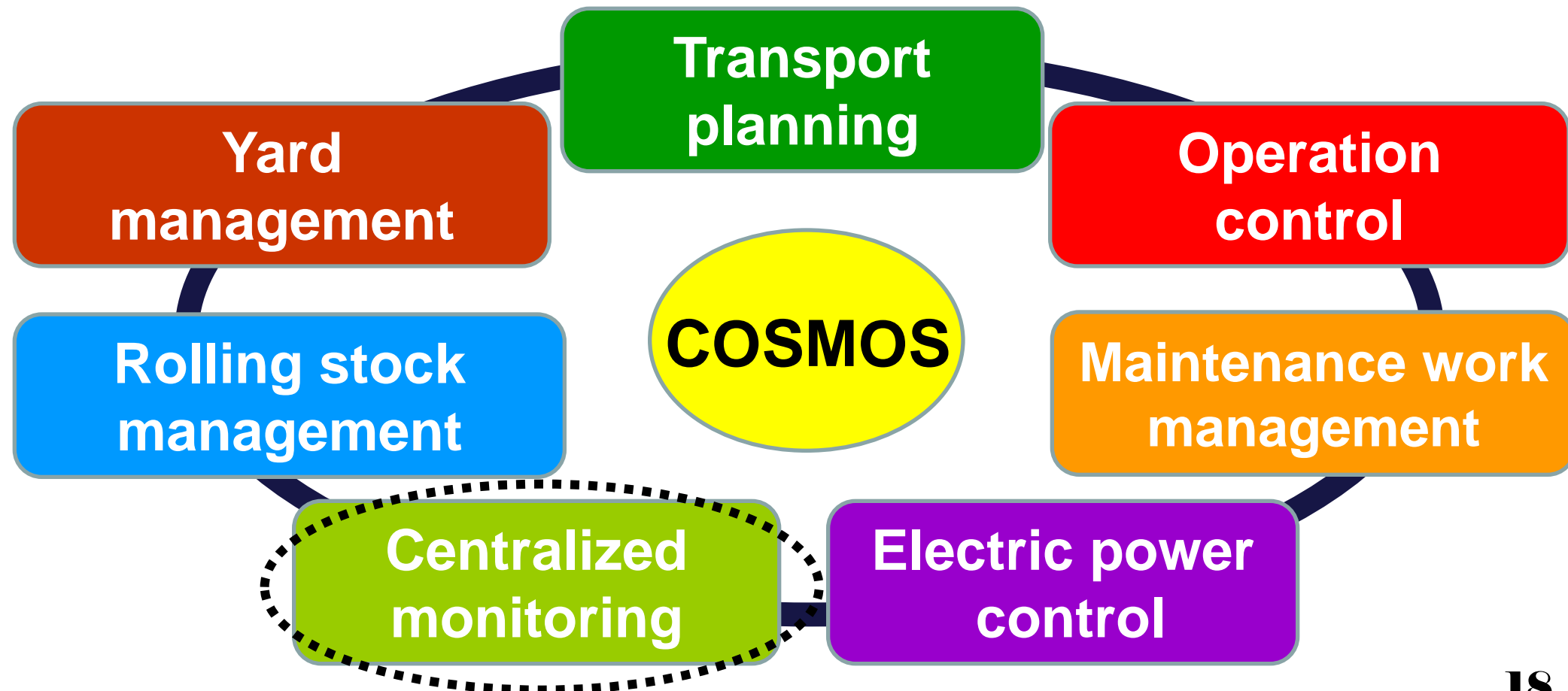
Brake control equipment test

Digital-ATC Continuous Speed Control



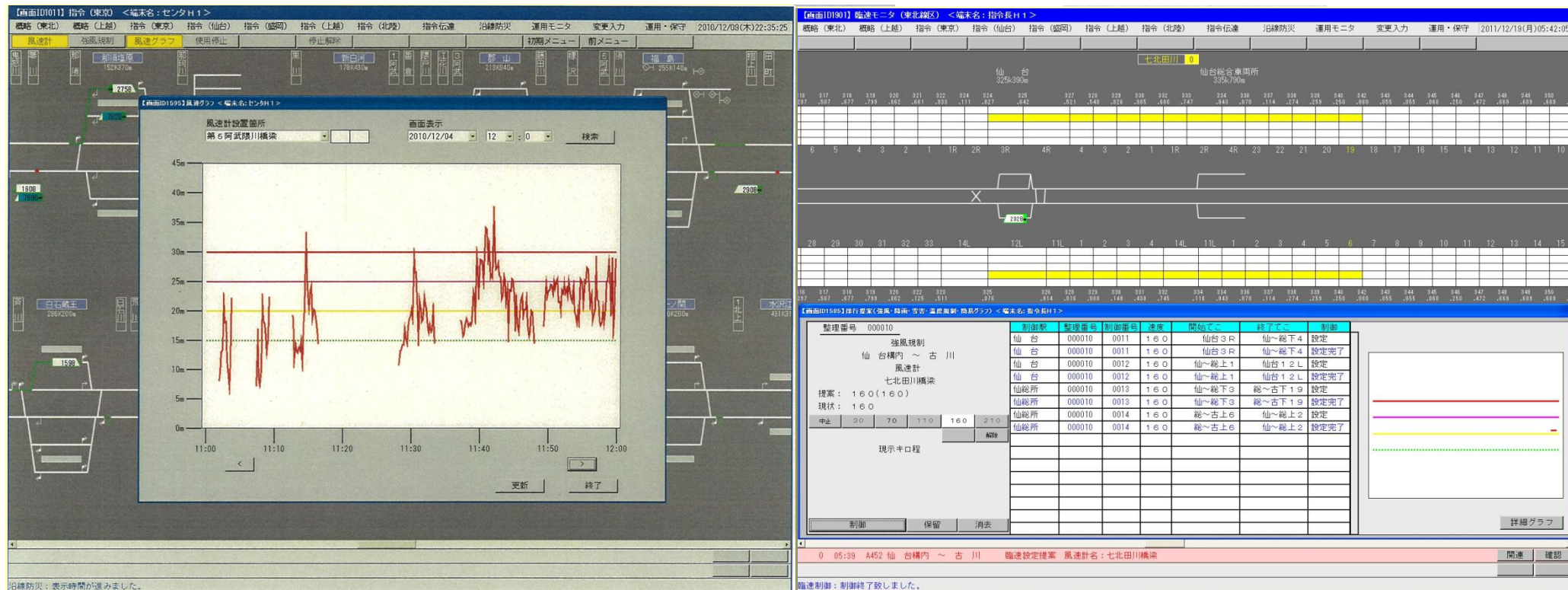
Integrated System for Shinkansen “COSMOS”

7 subsystems all work to effectively and efficiently operate the Shinkansen



Centralized monitoring system

Constantly monitors disaster prevention information



Operation Control Center display terminal

Snow gauge

Wind gauge

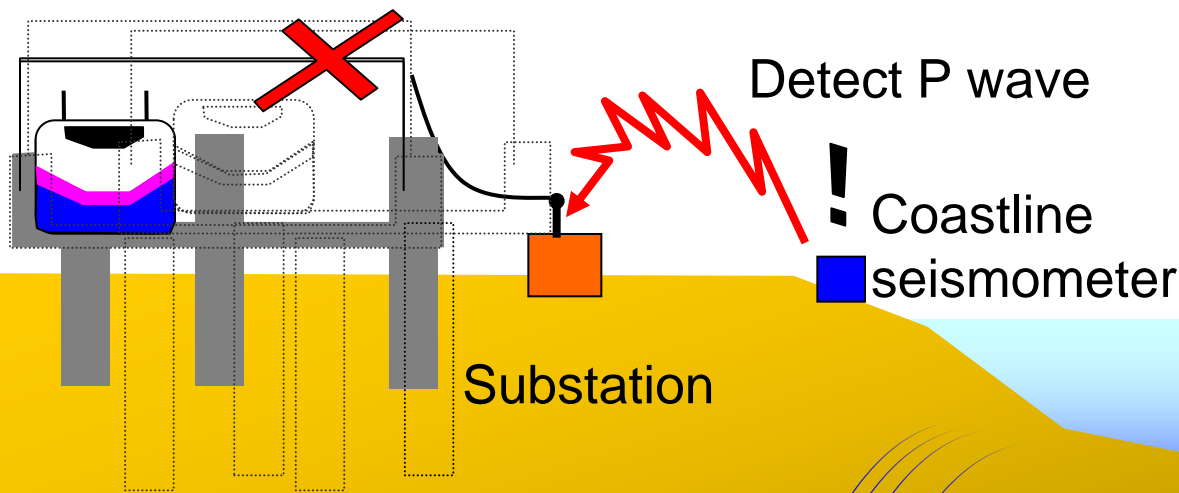
Rain gauge

“Early Earthquake Detection System”

Whenever coastline seismometer detects Primary wave.

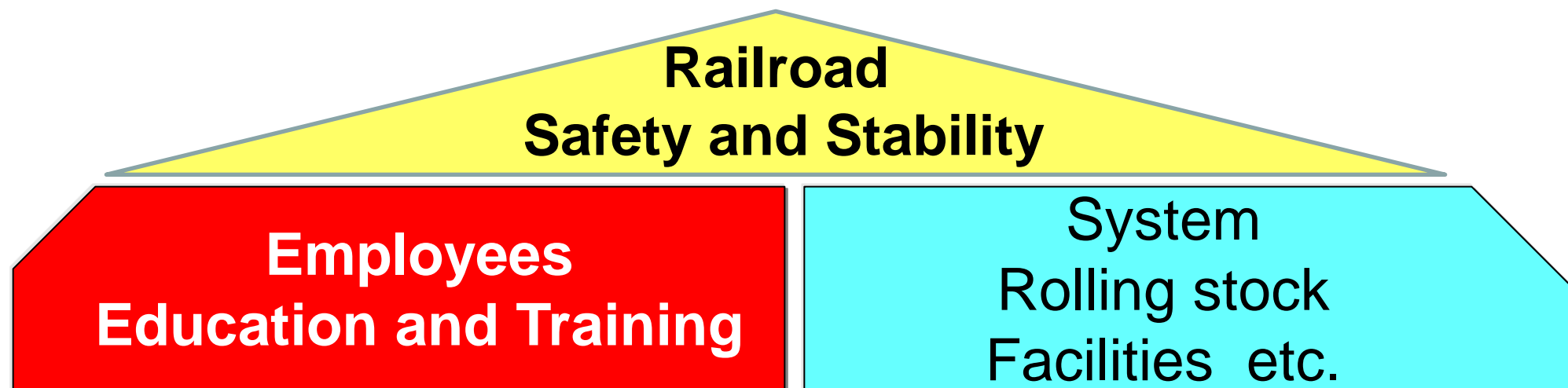
Power shutdown

Emergency brakes



Adequate Education and Training

Importance of Education and Training



In India, HSR operation will be the first experience

- 1) start education and training in the early stage.
- 2) carry out education and training continuously and repeatedly

Station
staff

Driver
Conductor

Rolling
stock

Track
Civil

Power
Signals

OCC
System

Adequate Education and Training

Key Points for HSR operation and improvement by India itself

**Training with actual rolling stock & infrastructure
essential to gain HSR operation & maintenance
skills**



- 1) Education & training in Japan, for key future Indian staff members**
- 2) Construction of an initial section in the early stage**
- 3) Early construction of a training center**
- 4) Publication of regulations, texts, and manuals**

JR East can contribute to everything in this field !

Adequate Education and Training

Examples of Education and Training

- 1) Study rules and master technical knowledge and skills required for operation
- 2) Learn how to respond in an emergency



Shinkansen crew training simulator



Driver training simulator



Classroom with various educational materials

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Economic Benefits

Tokyo Station (October 2012)



Economic Benefits

“GRANSTA”



Economic Benefits

THE TOKYO STATION HOTEL (October 2012)



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The perfect time to realize HSR in India!

- **HSR is safe, fast, convenient, punctual, highly efficient, environmentally friendly, providing a comfortable ride.**
- **Moreover, HSR can aid the development of stations and towns.**
- **JR East can contribute to HSR in India with our technology and experience of HSR.**

Thank you for your attention

