Introduction of High speed line

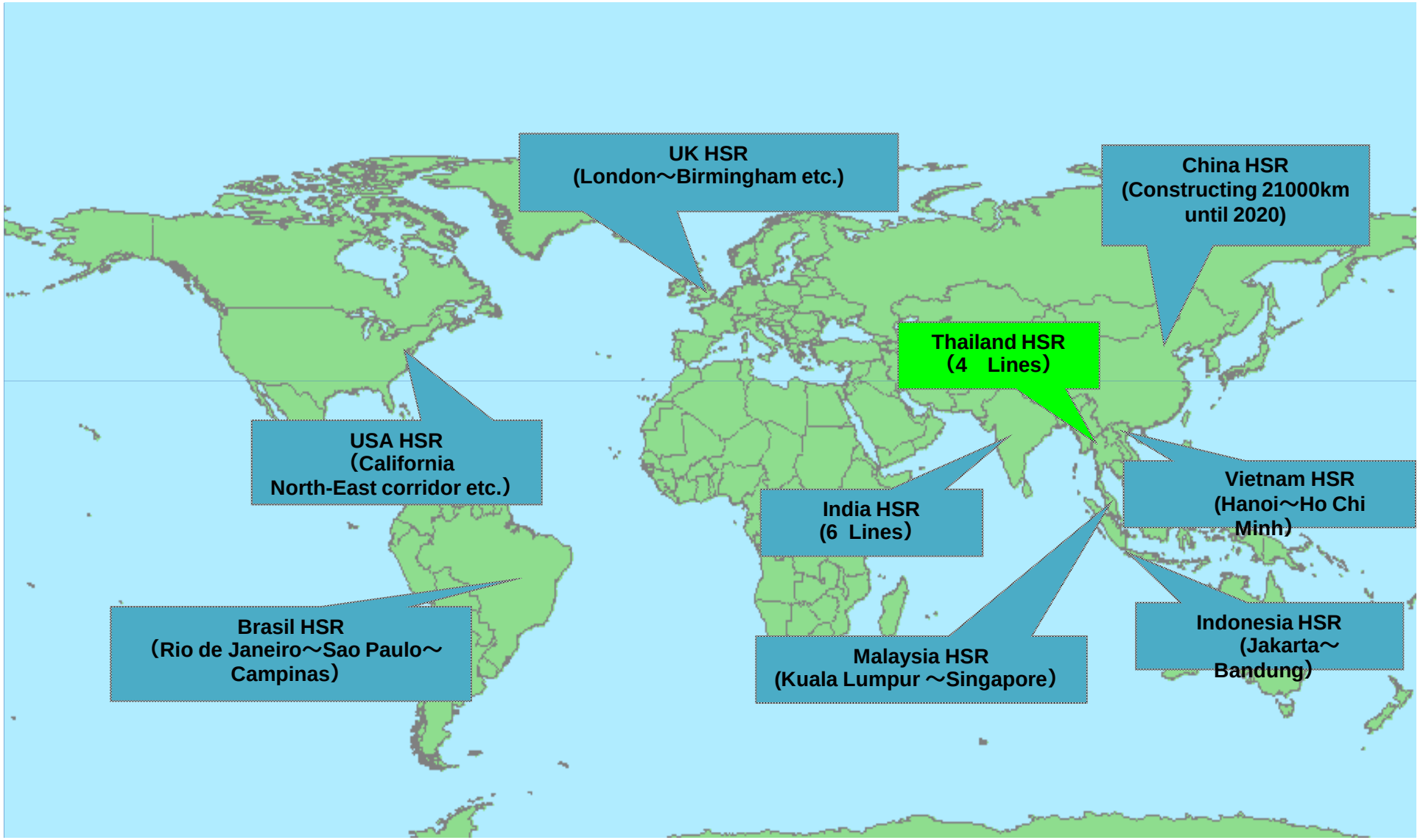
ORIENTAL CONSULTANTS
Global Consulting for Sustainable Development

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

Index

Trend of the HSR Project

Planned HSR Project in the World



Planned HSR Project in the World

BANGKOK-CHIANG MAI
(750km)

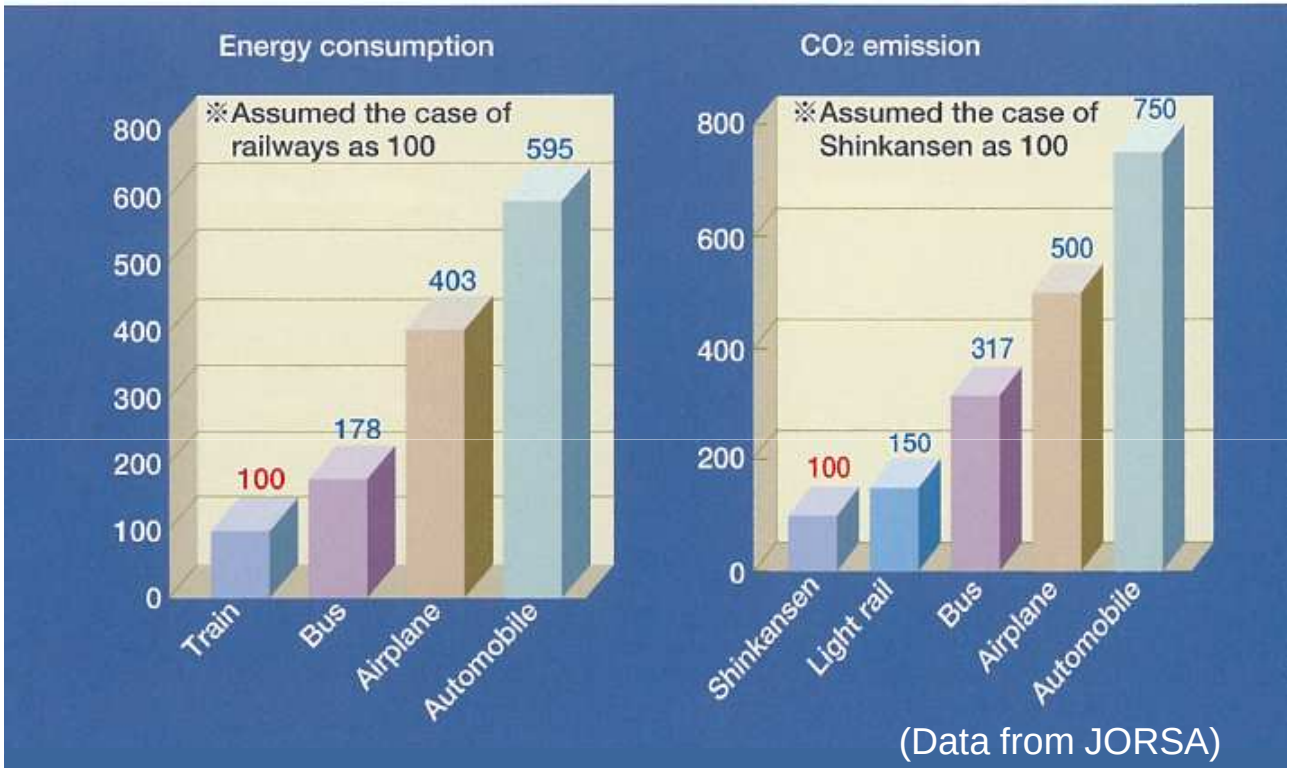
BANGKOK-RAYONG
(220km)

Superiority of Introducing HSR

Bus 50 Persons

Airplane 800 Persons

HSR 834 Persons
(E4 Series 8 cars/Train)

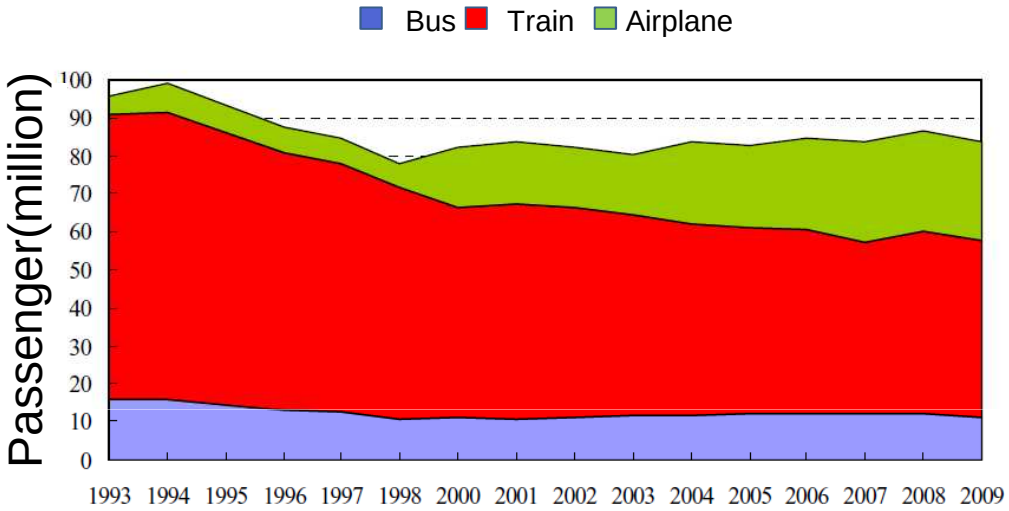


(Data from JORSA)

Superiority of HSR
- Mass Transportation
- Less Energy Consumption
- Low Environmental Load

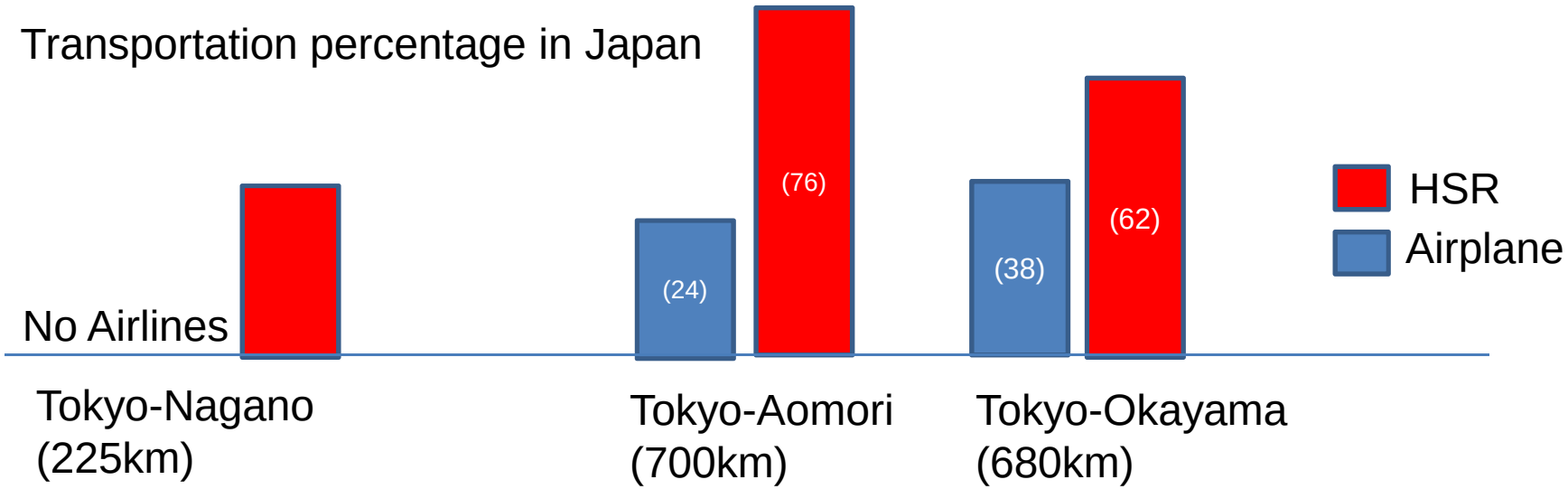
Transport Needs

Long Distance Transportation percentage in Thailand



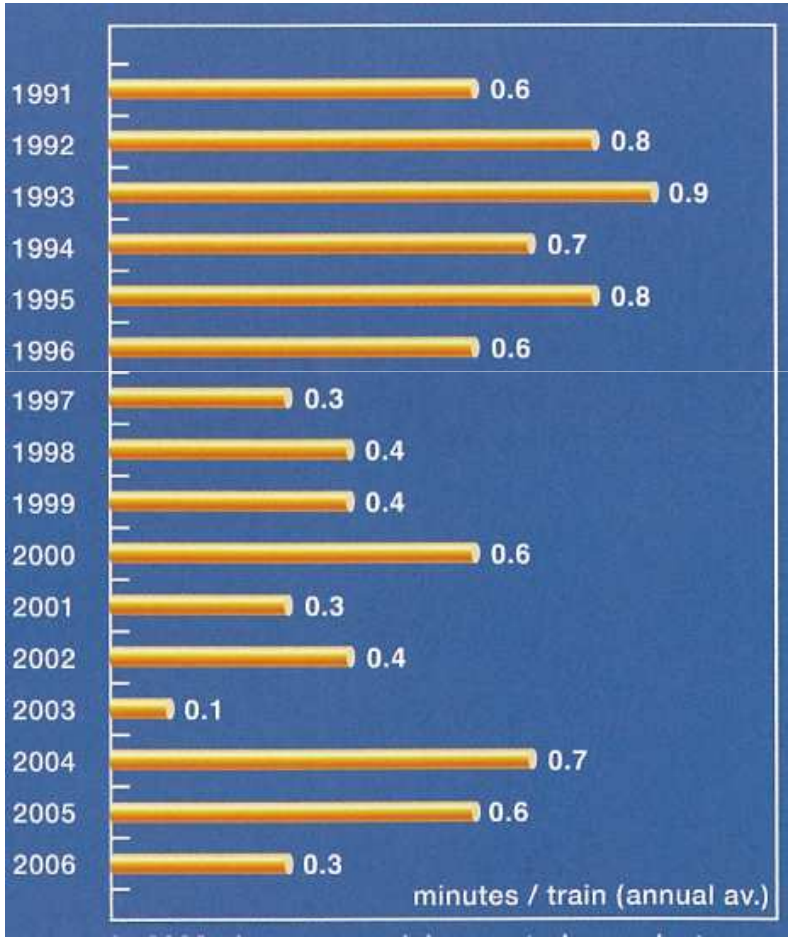
The use of Train has decreased

Transportation percentage in Japan



Safety and Reliability

Punctuality of Tokaido Shinkansen



Accurate

Average Train Delay within 1 minute

Safe Transportation

No Derailment

No Passenger/Crew Injured

Feature of HSR

Comparison between Conventional Railway and HSR

There are many differences between Conventional Railway and HSR.

	Conventional Railway	HSR
Speed	Below 160㎞/h	Over 200㎞/h
Rail Tracks	With level crossing Mixed operation	Overhead crossing Dedicated only HSR
Operation	Operation and maintenance at the same time	Operation and maintenance at the separated time
Rolling Stocks	Locomotive and Passenger cars	EMU
Traction Power Supply(TPS)	DC 750V (Metro)or AC 25kV(ARL) Direct Feeding system	AC25kV AT Feeding system
Signaling	Visible signal	ATC with cab signaling
OCC（CTC)	Operated at every signal cabin	Operated at one place
Environmental Performance	Not necessary	Necessary (Noise, Inductive interference, Impact sound)
Maintenance of Equipment	Manual inspection and maintenance	Mechanical inspection and maintenance
Disaster Prevention	Not considered	Necessary

1. Rail Tracks

Suitable Tracks for High Speed Train

Double Tracks
No Level Crossing
No Entry from Outside
Overbridge and Underpass

Large Radius Curves (over 4000m)
Small Gradient

1. Rail Tracks

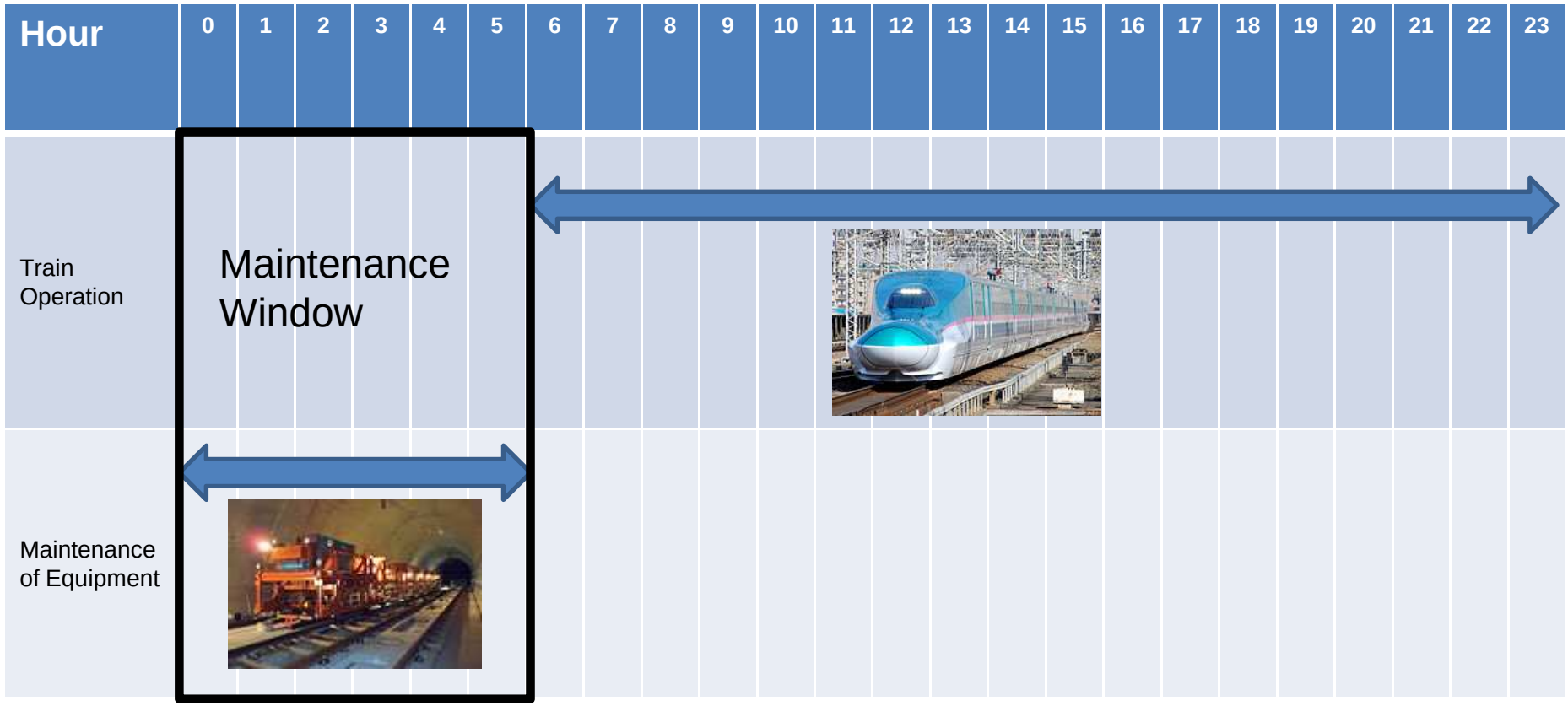
Dedicated Track

HSR Trains slow down
when Conventional Trains run into HSR line

Dedicated HSR Track enables Trains run fast.

2. Operation

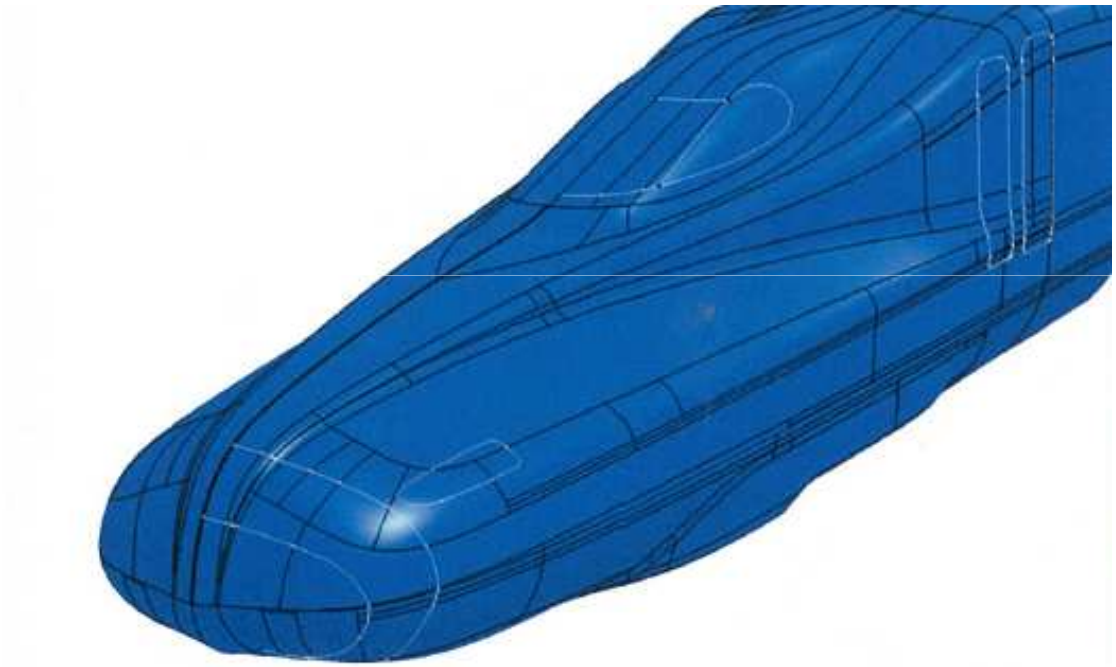
Separation of Train Operation and Maintenance（Maintenance Window）



We recommend that Time zone of Train Operation and Maintenance should be Separated.

3. Rolling Stocks

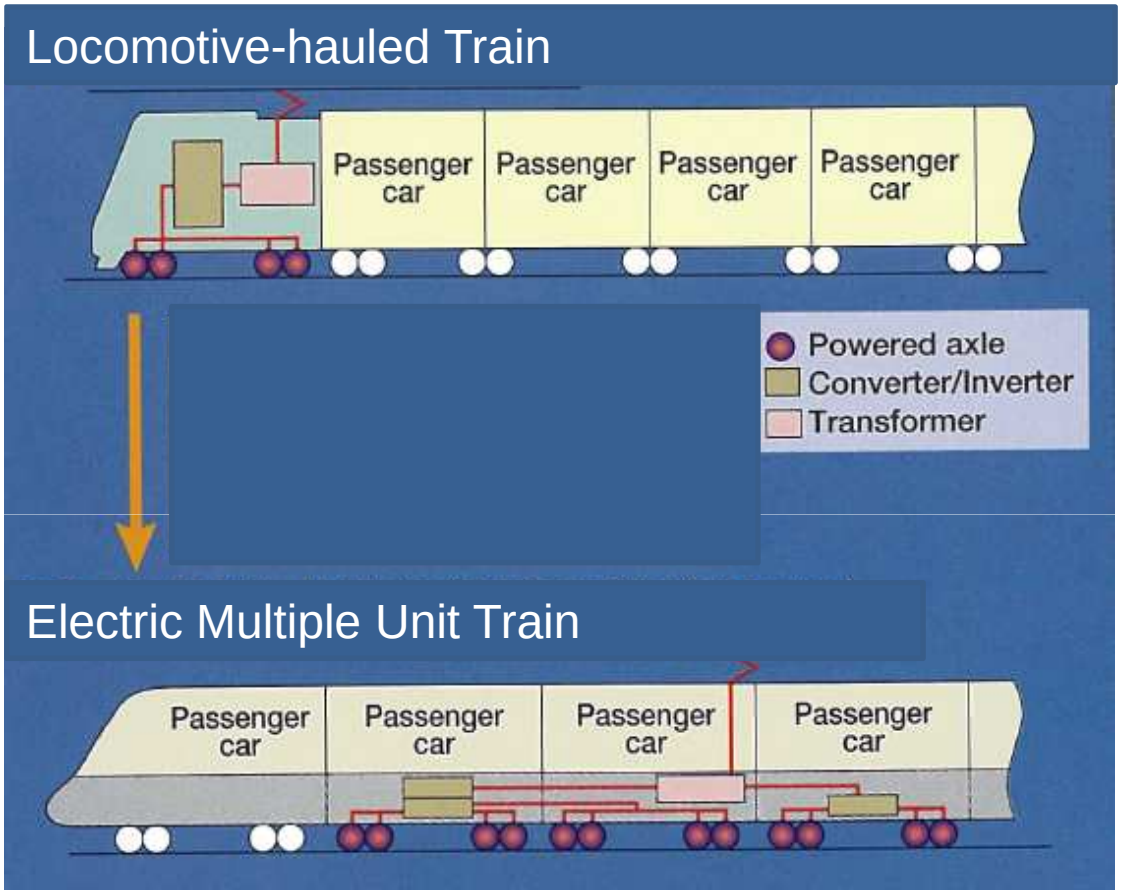
Wind Resistance



Computer analysis of the front shape to minimize wind resistance

To reduce the Air Resistance, It is Necessary to Sharpen the Nose Shape of HSR

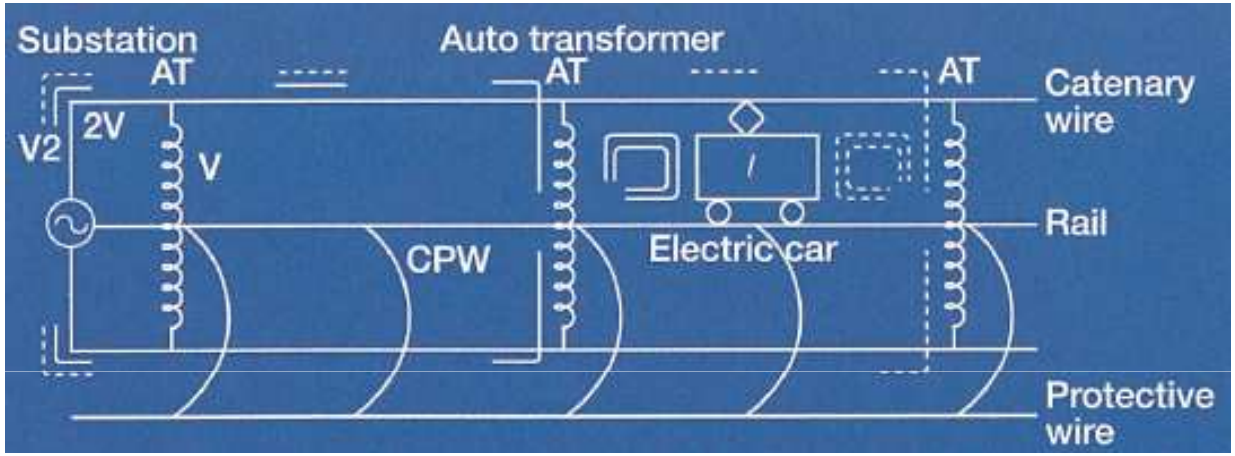
3. Rolling Stocks



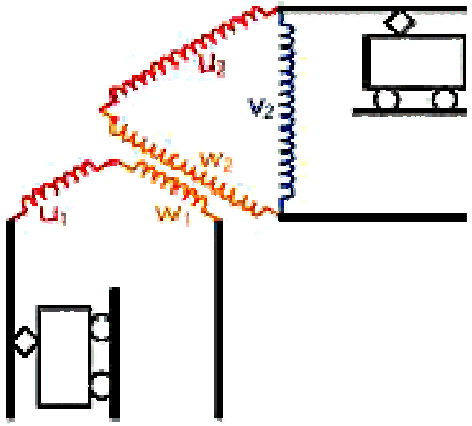
There are two methods for HSR such as locomotive system and EMU.
We recommend EMU system for Thailand

4. Traction Power Supply(TPS)

AT Feeding System

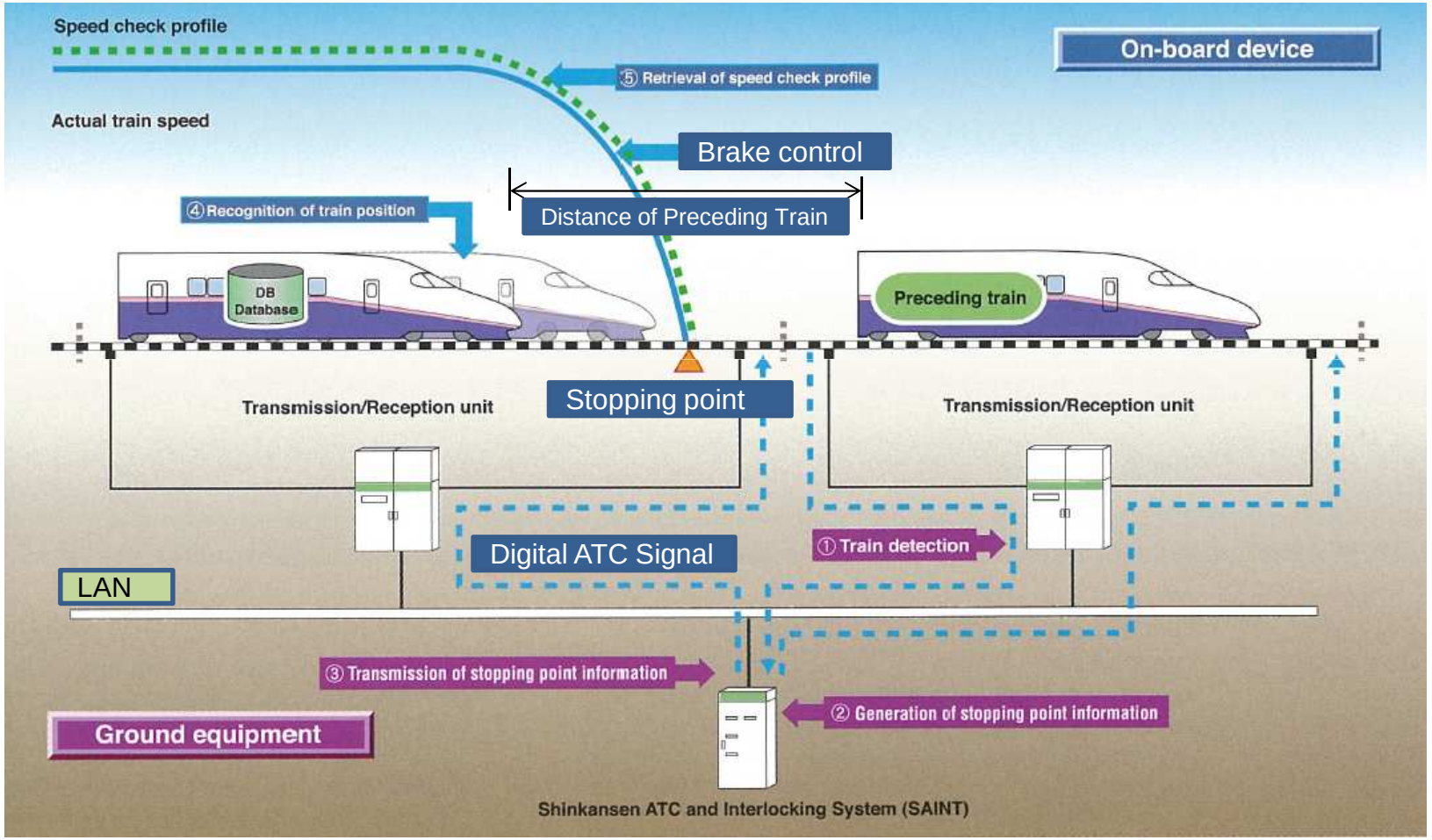


Roof-Delta Traction Transformer



5. Signaling

ATC with Cab Signaling system



Train Control by Distance of Train Keeping Visibility Distance

6. Operation Control Center(OCC)

The Operation Control Center for Whole Line at One Place.
Train Dispatch and Facility Dispatch.

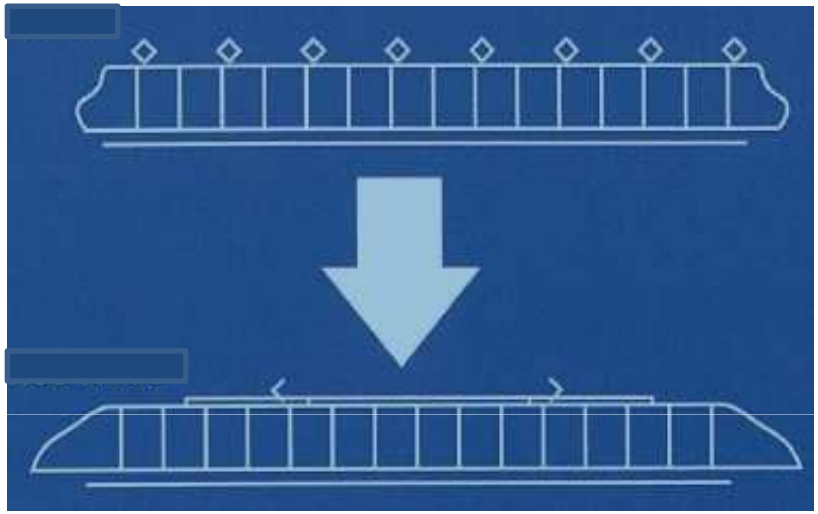
7. Environmental Performance

Noise-reduction

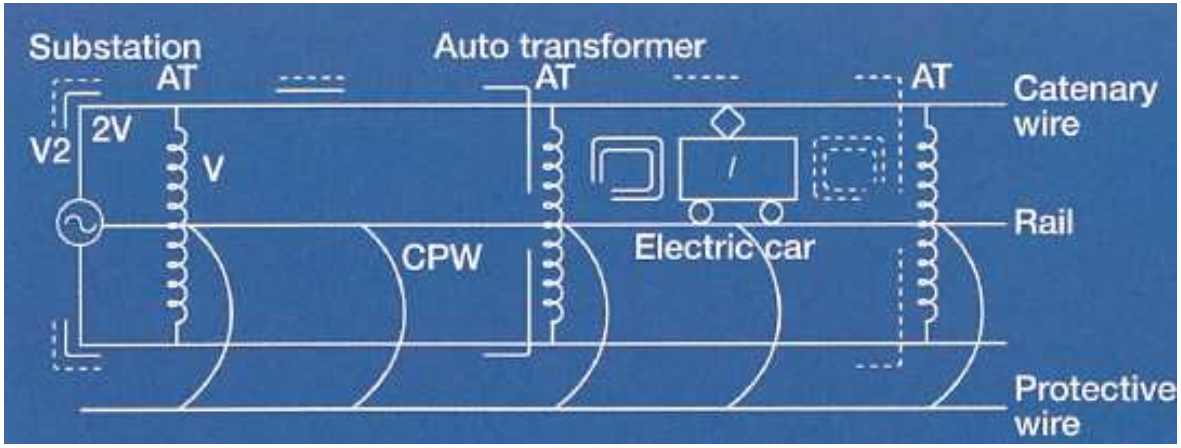
Pantograph Cover

7. Environmental Performance

Improving Inductive Interference



Pantograph Reduction

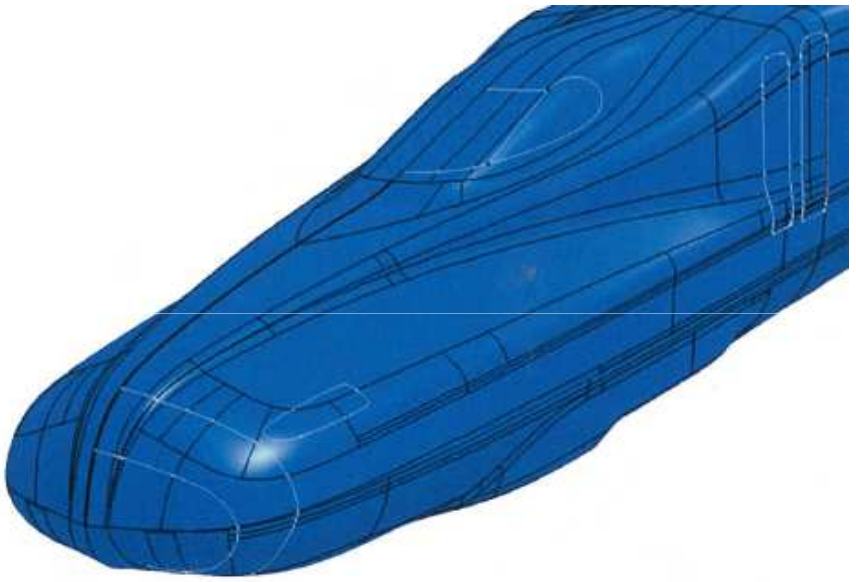


Location of AT post (interval of 10km)

7. Environmental Performance

Impact noise reduction

Tunnel Entrance Hood



Processing Nose Shape

8. Maintenance of Equipment

Inspection Train

Inspection equipment on Train

Equipment Condition is measured regularly by Trains

8. Maintenance of Equipment

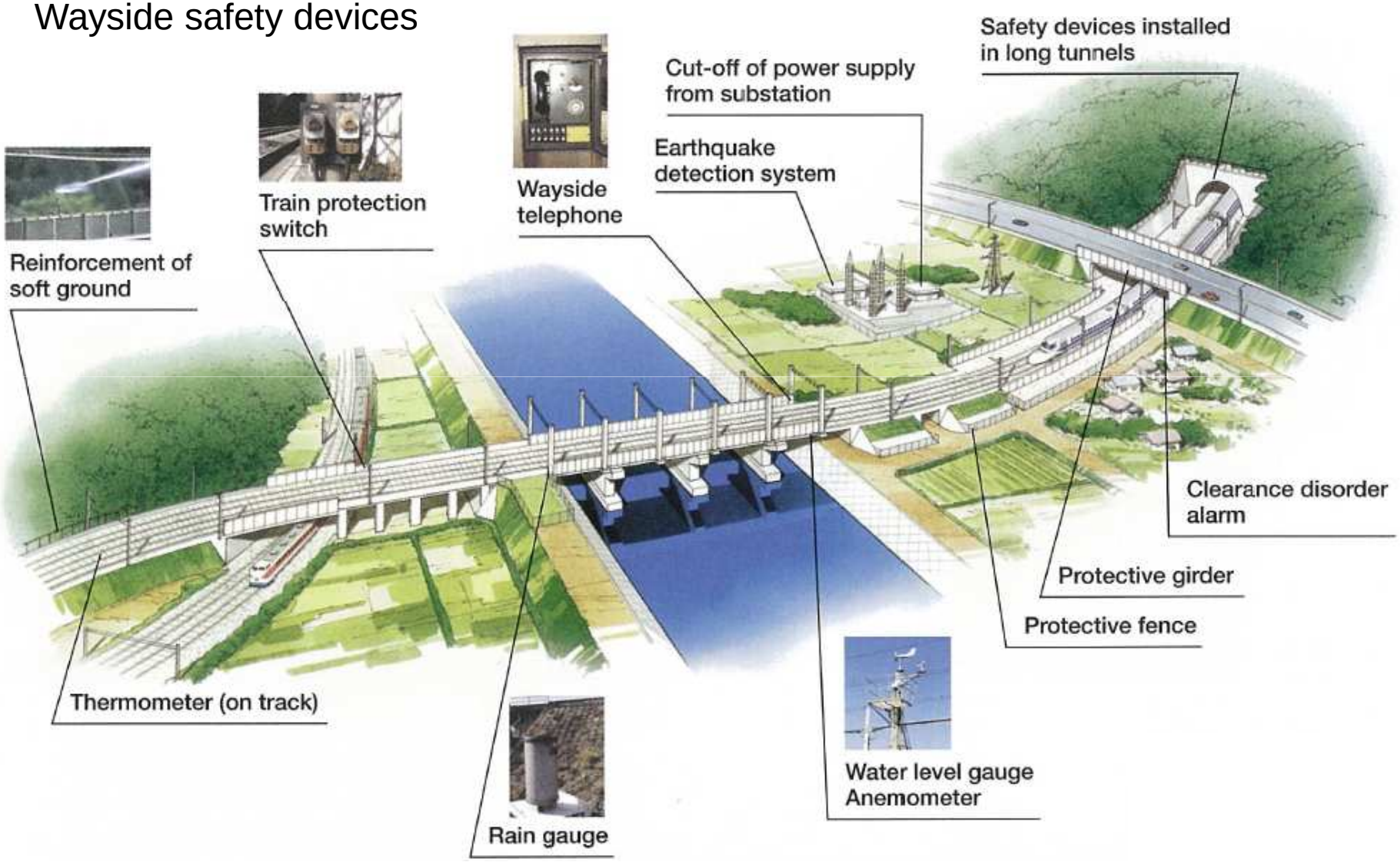
Tamping Machine

Maintenance Wagon for
Overhead Catenary System

Introducing Maintenance Car is recommended

9. Disaster Prevention

Wayside safety devices



- THANK YOU FOR YOUR LISTENING !