INTERNATIONAL UNION
OF RAILWAYS

unity, solidarity, universality

High Speed Rail
Global trends

Public Debate
SIRTS – PKP - PLK
Warsaw, 30 August 2011

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Director of the Passengers and High Speed Department
Coordinator Latin American Region, UIC

Agenda

The UIC and the high speed rail
High speed rail principles
Some facts & figures
High speed around the world
The future of high speed rail
Concluding remarks

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What's the UIC?

The UIC is a professional organisation serving the needs of rail transport through international cooperation at the global level

Since 1922
200 members on all continents
Members are:

- Railways
- Rail operators
- Infrastructure managers
- Railway service providers
- Public transport companies

UIC Mission

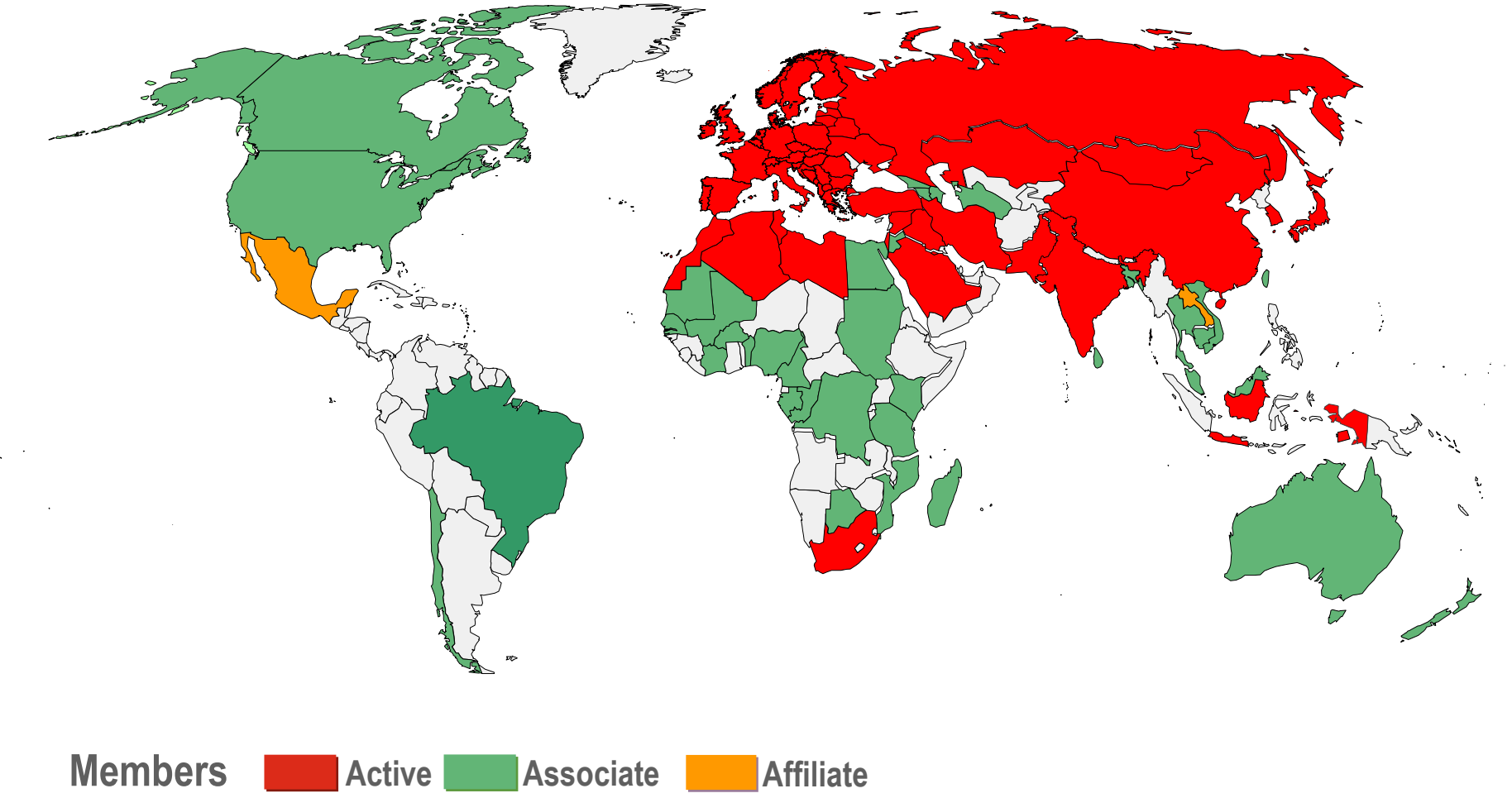
Promoting the development of rail transport

at world level,

in order to meet challenges

of mobility and sustainable development

UIC in 2011: a continuous expansion



High speed at the UIC

Main objectives:

- Co-ordinate high speed activities of UIC members and solve common problems
- Contribute to the (“logic”) development of

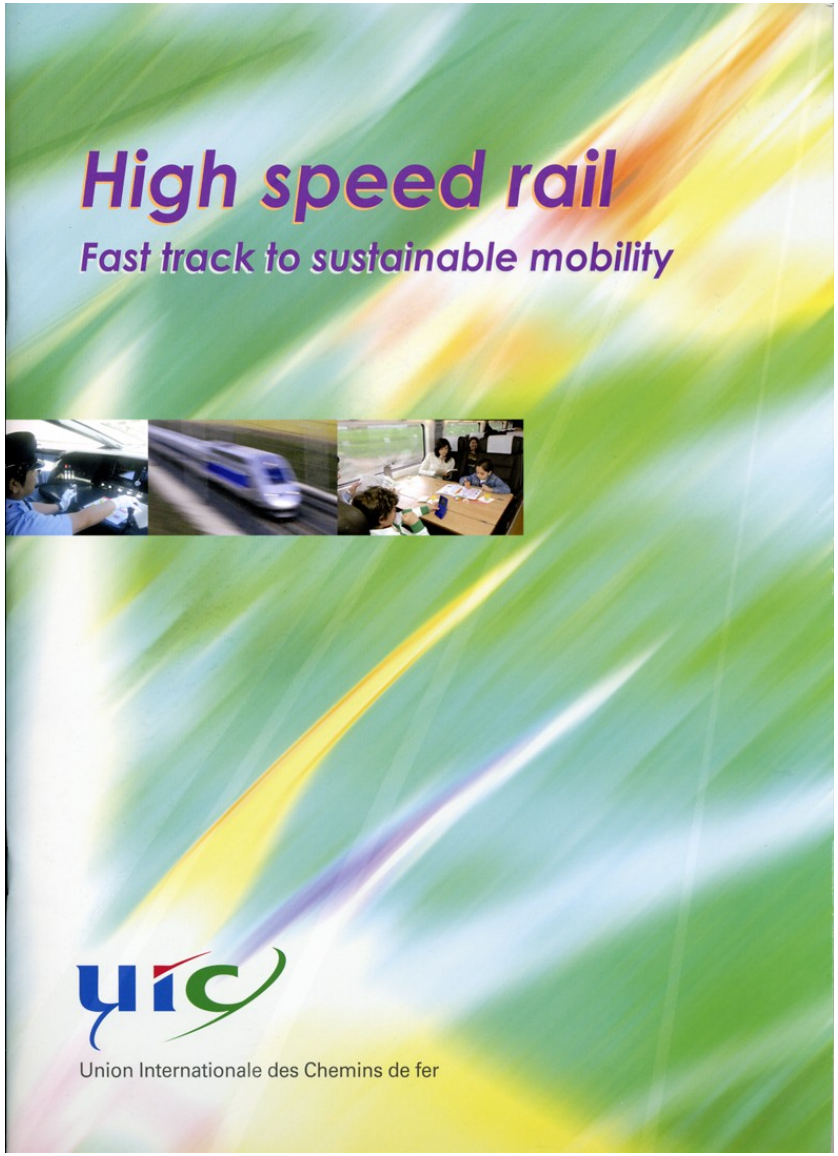
  high speed rail systems around the world

UIC Intercity & High Speed Committee

Activities:

- Updating data bases: lines, rolling stock, traffic, etc.
- World high speed maps
- “Benchmarking” and other working teams
- Communications and contacts
- Website
- High speed brochure and other publications
- Working groups
- Workshops
- Studies & reports

Visit our website: www.uic.org/highspeed


High speed rail
Fast track to sustainable mobility
Union Internationale des Chemins de fer


INTERNATIONAL UNION OF RAILWAYS
unity, solidarity, universality
High speed rail
Fast track to sustainable mobility

8tr

PHILADELPHIA 2012

HIGHSPEED

ail

8th World Congress on High Speed Rail

11 – 13 July 2012

Website: www.uic.org

www.uic-highspeed2012.com

Training on UIC High Speed Systems

One week (5 days) Training Seminar, in which all the elements involved in a high speed system are analysed

8th THSS: 26 September to 1 October 2011, in Paris
www.uic.org/highspeed

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Definition of high speed

Is a “new transport mode”, fully compatible with classic rail (SNCF, 1981)

High speed means at least 250 km/h

But the definition is not unique

(EU Categories I, II and III)

<u>High speed & high performances</u>

Intercity (UK): Important average speed at 200 km/h

Thresholds

Operating at more than (+/-) 200 km/h requires:

- special trains (train sets)
- special dedicated lines
- in-cab signalling

…and much more

Understanding high speed rail 1

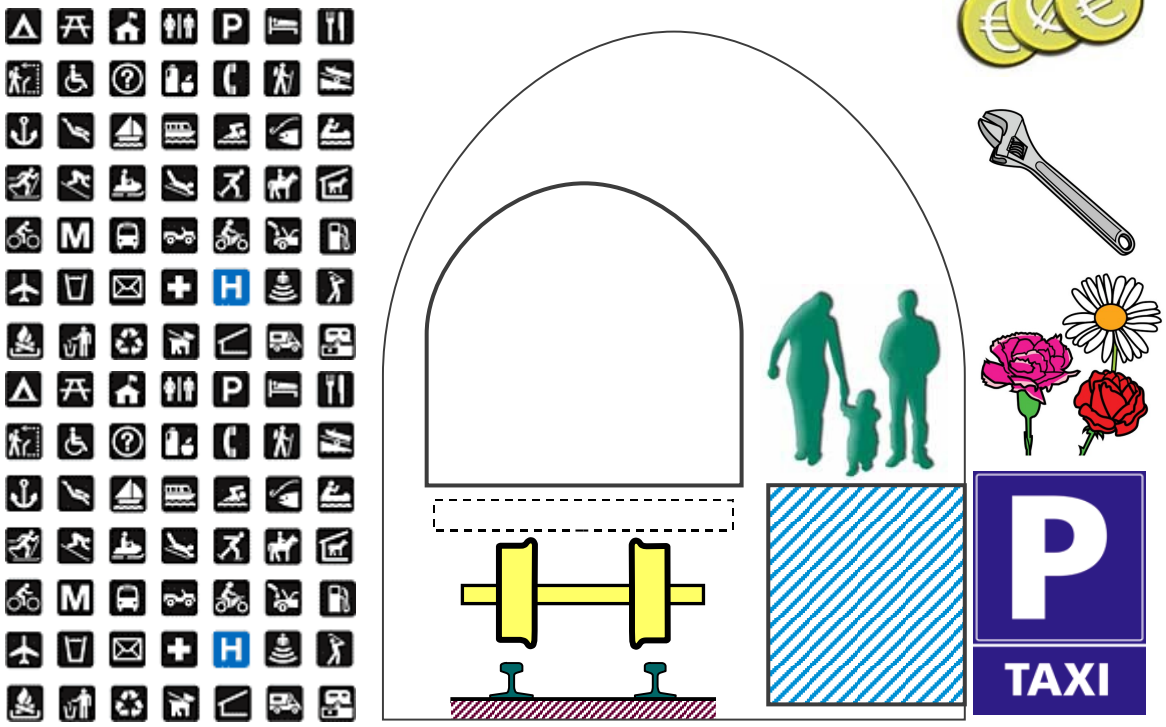
High speed is a system

A very complex system, comprised by the state of the art of:

- Infrastructure
- Rolling stock
- Signalling systems
- Maintenance systems
- Management
- …
- Station emplacement
- Operations rules
- Marketing
- Financing
- Legal issues

Considering all of them is fundamental

High Speed is a system

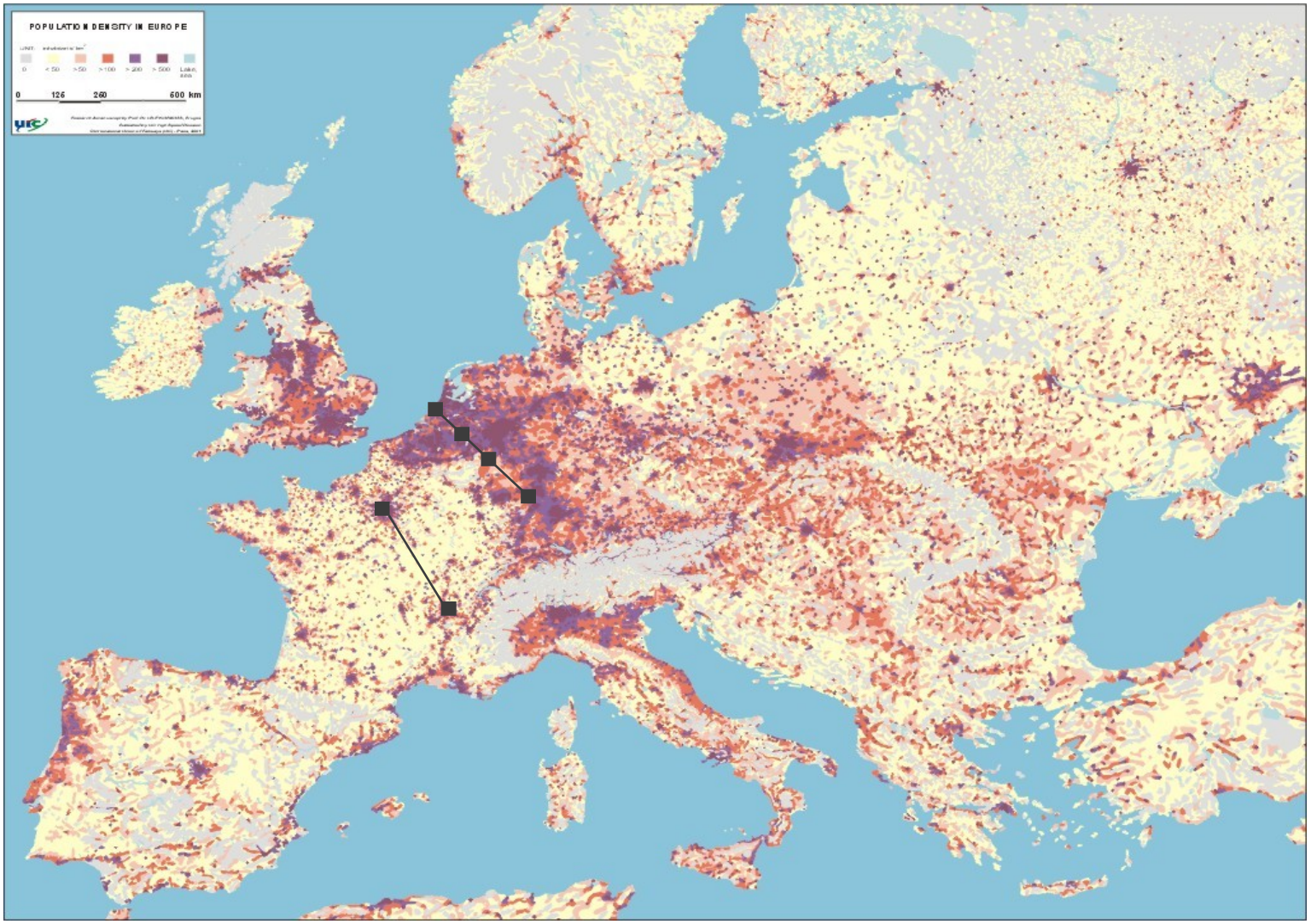


Understanding high speed rail 2

High speed is not unique

- Many different commercial concepts of high speed (including services to customers, marketing, etc.)
- Many different types of operations (maximum speed, stops, etc.)
- Different ways to operate classic trains (in particular, the impact on freight traffic)
- Capacity and cost vary in each case

Density of population



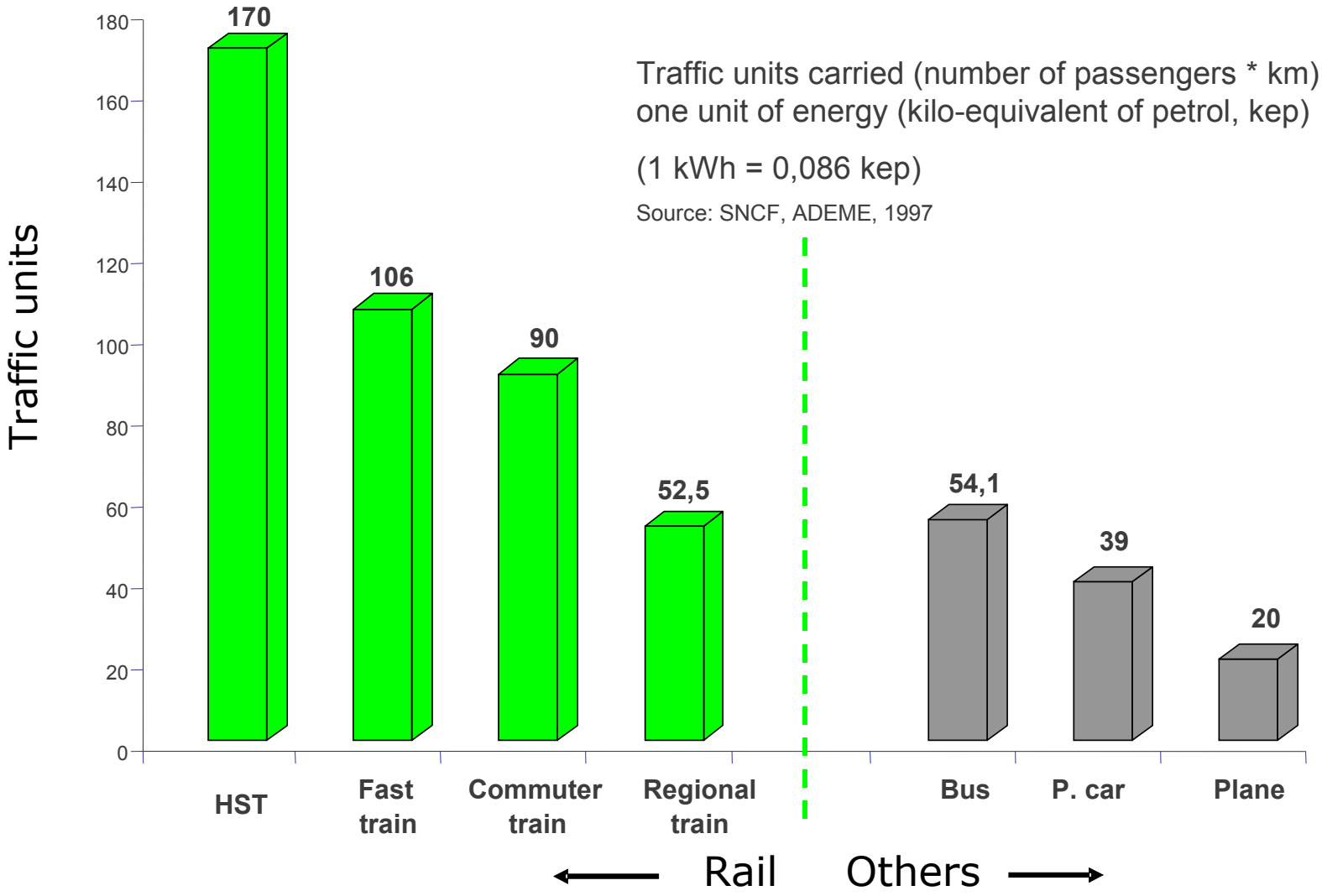
High speed advantages for society

- Offers a high capacity of transport
  - Up to 400,000 passengers per day, Tokyo – Osaka
  - Permits reducing traffic congestion
  - Helps economic development
  - Shapes land-use
- Offers sustainability

High speed contribution to sustainable mobility

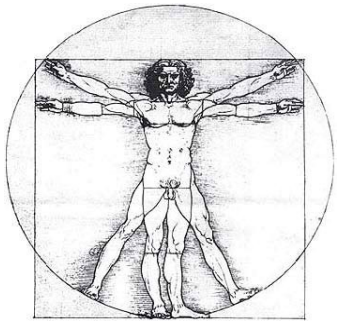
- Environment
  - Land take
  - Energy consumption
  - CO2 emissions
- Social aspects
  - Reliability
  - Comfort
  - Impacts on health
  - Safety
- Economic aspects
  - Green jobs
  - External costs

Energy efficiency comparison



Comparison of carbon emissions

Magnitude of CO2 emissions per person (in a 600 km trip):

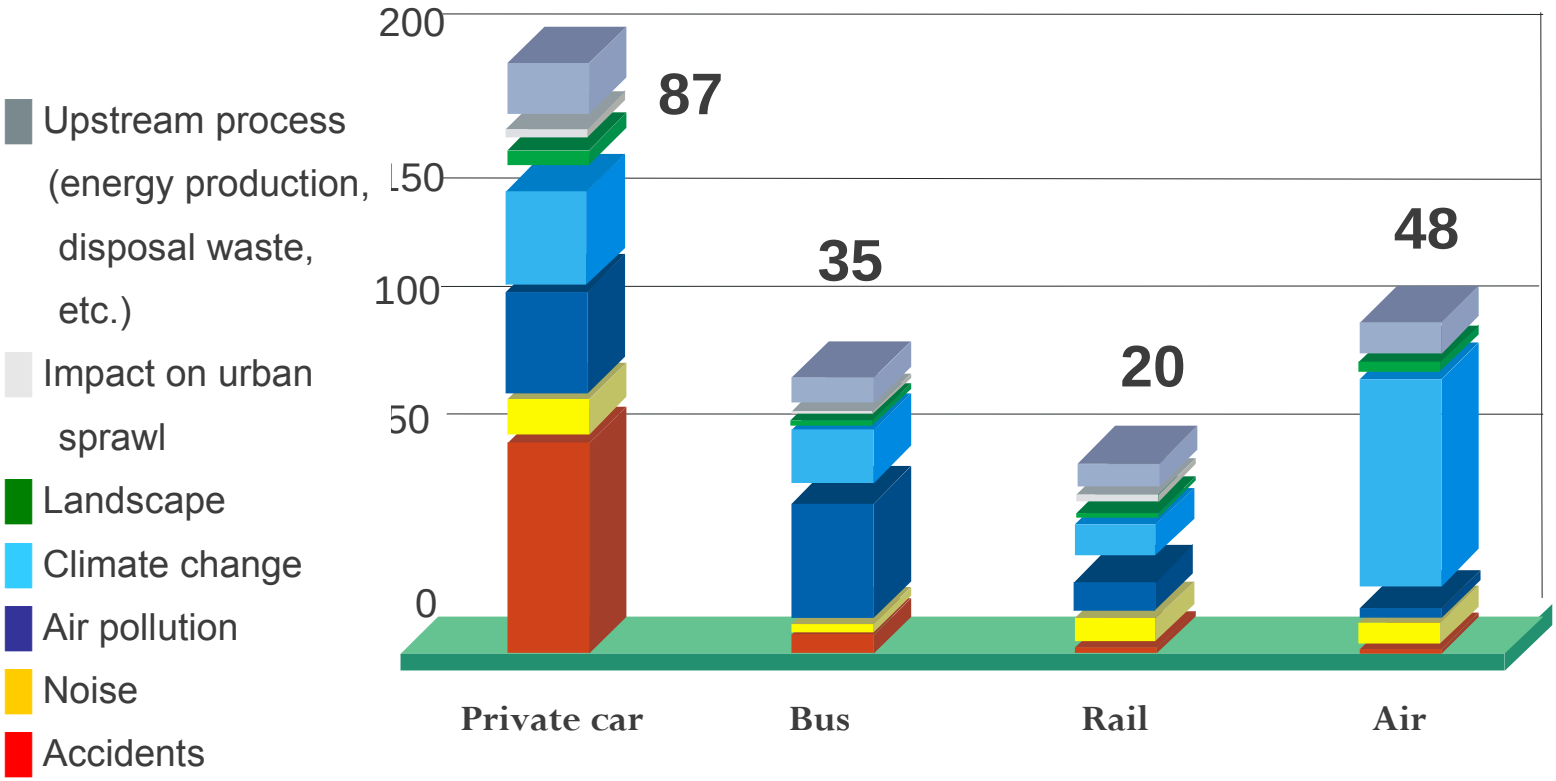


- 80 kg if travelling by plane (the weight of the passenger)

- 13 kg if travelling by high speed train (the weight of his/her suitcase)

External costs (average)

External costs = Part of the ticket paid by society



Magnitude of external costs in a medium-distance corridor, non-rush hour and without considering congestion (€ per 1000 passenger km)

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High speed world network

World network (V ≥ 250 km):

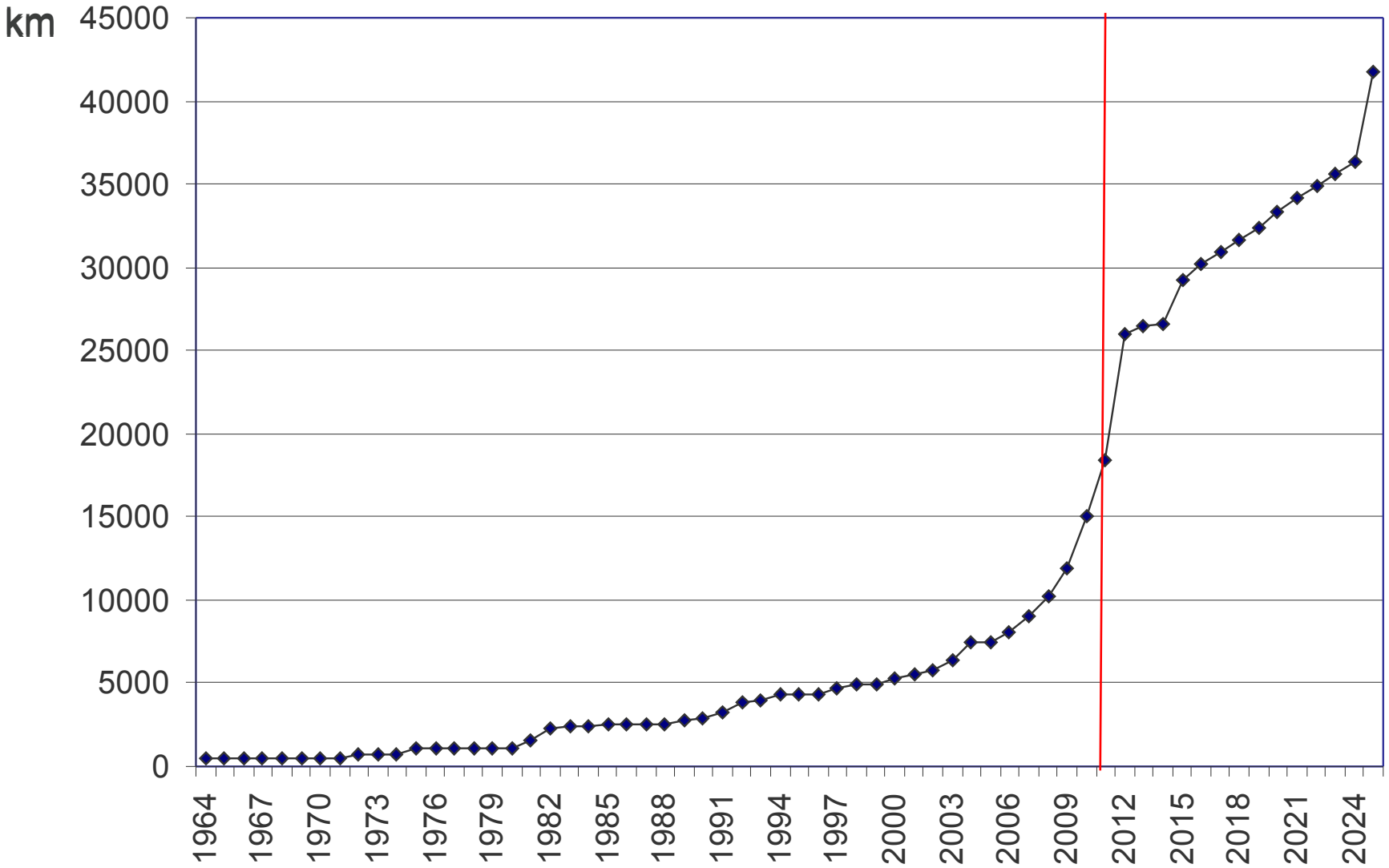
16.954 km of lines in operation

8.040 km of lines under construction

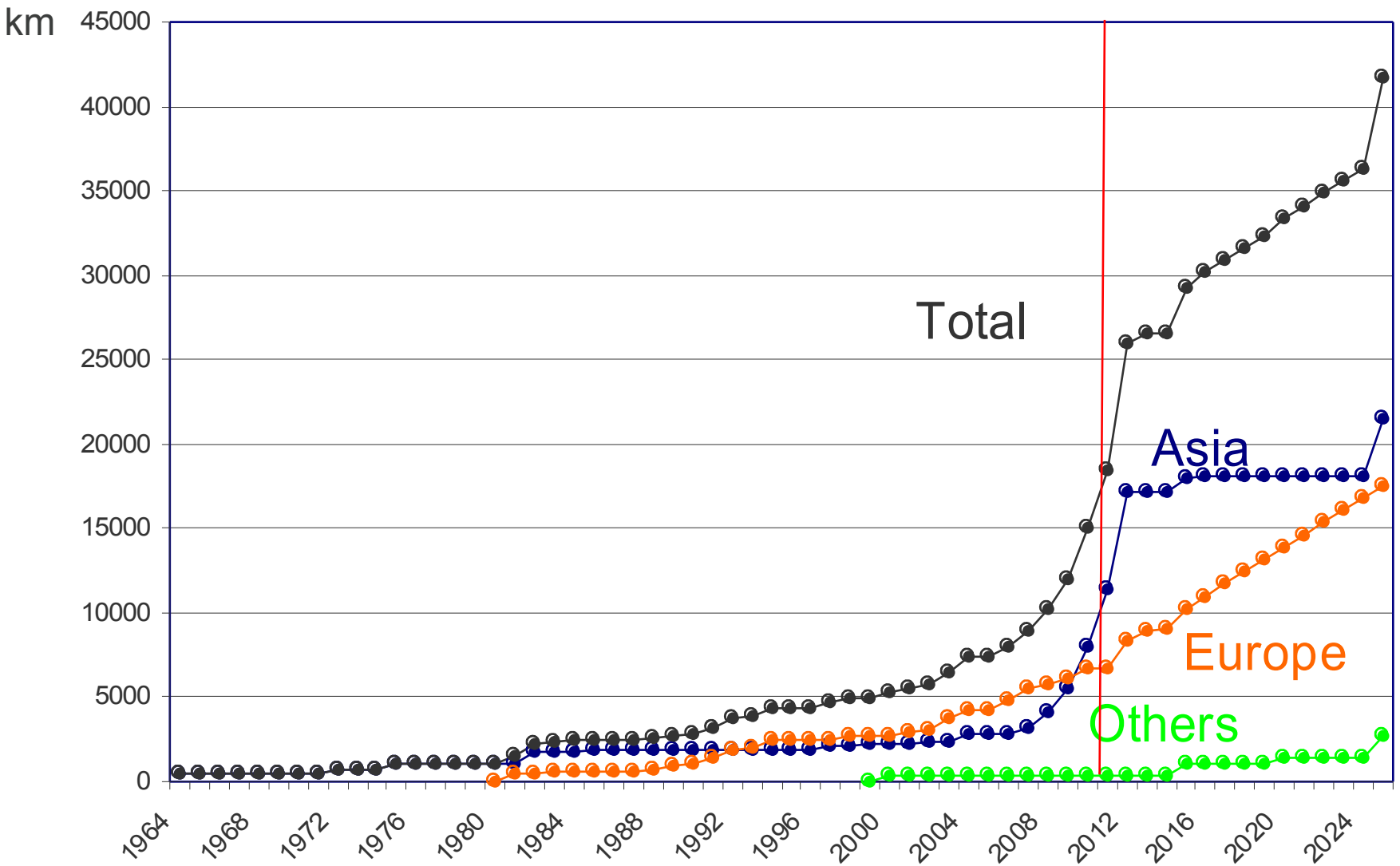
17.643 km of lines planned

July 2011

Evolution of the world HS network



Evolution of the world HS network



World rolling stock high speed fleet

High speed train sets* in operation in the world:

Maximum speed 200 km/h or more: 2.575

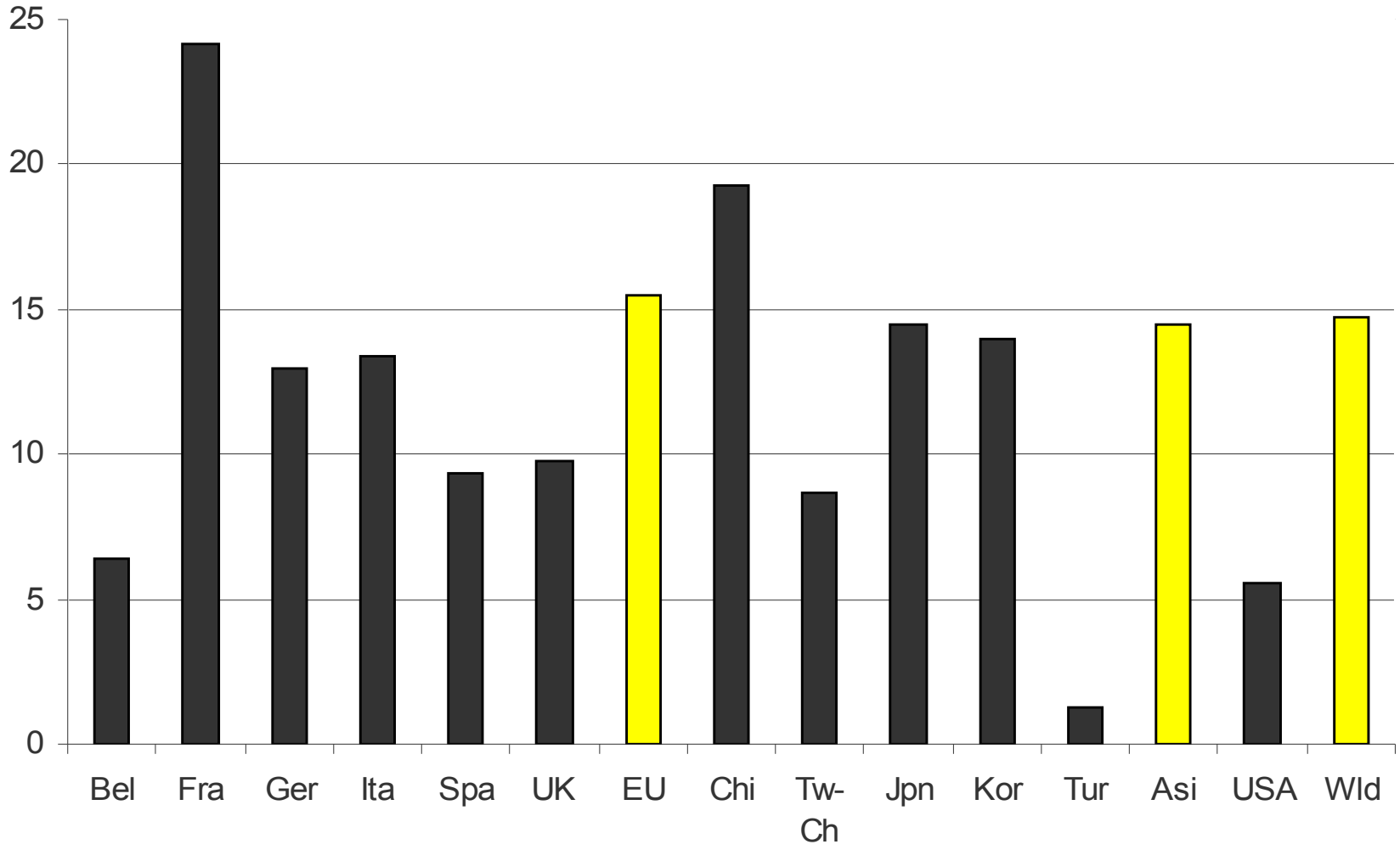
Maximum speed 250 km/h or more : 2.088

High speed train sets manufacturing: 1.083

* and trains operating on dedicated high speed lines

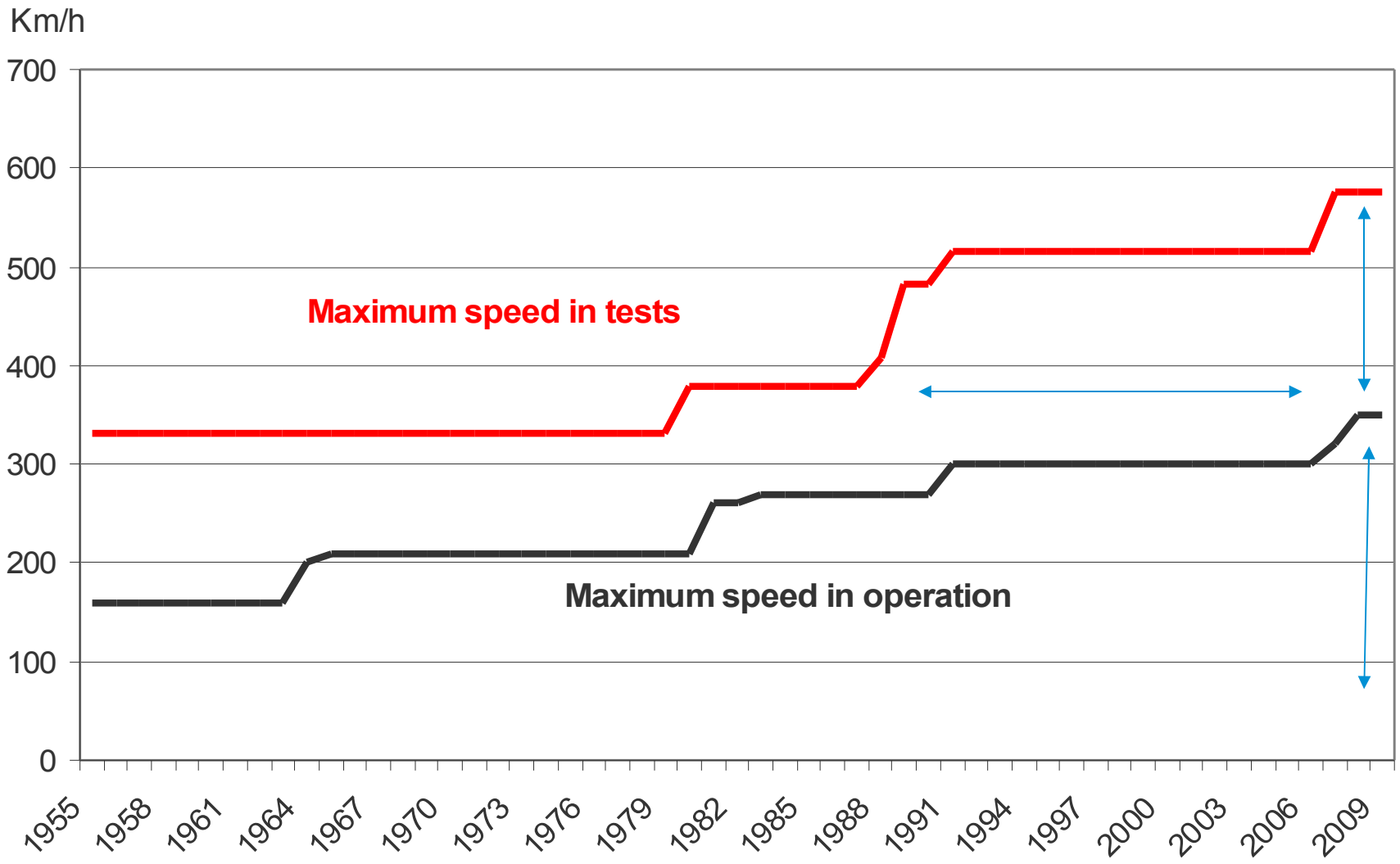
July 2011

Ratio rolling stock / infrastructure



Number of train sets per 100 km of HS line

Evolution of maximum speed on rails



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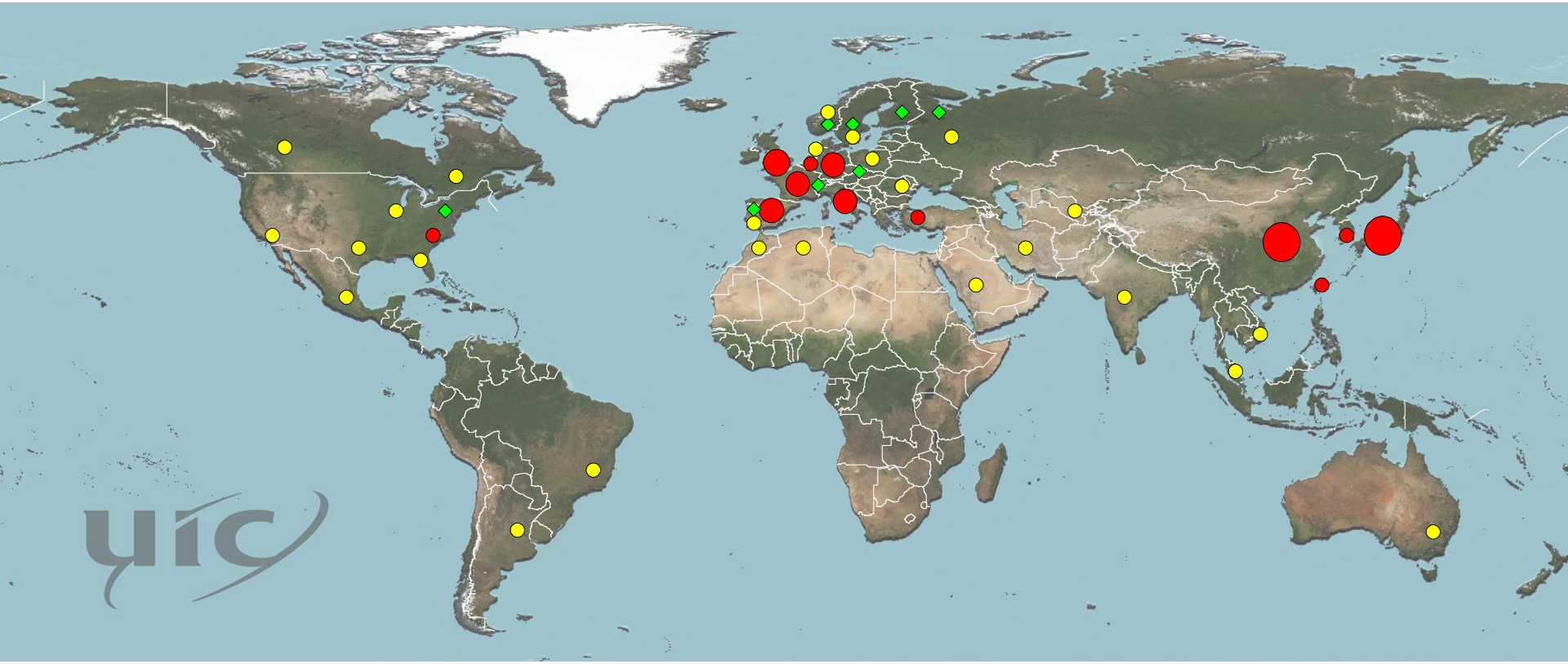
High speed rail systems in the world

In operation:	Planned:
Belgium	Poland
France	Portugal
Germany	Russia
Italy	Morocco
Spain	India
The Netherlands	Iran
United Kingdom	Saudi Arabia
	Argentina
Japan	Brazil
Korea	Indonesia
China	Canada
Taiwan, China	Mexico
Turkey	…
USA	

High speed rail systems around the world – 2011

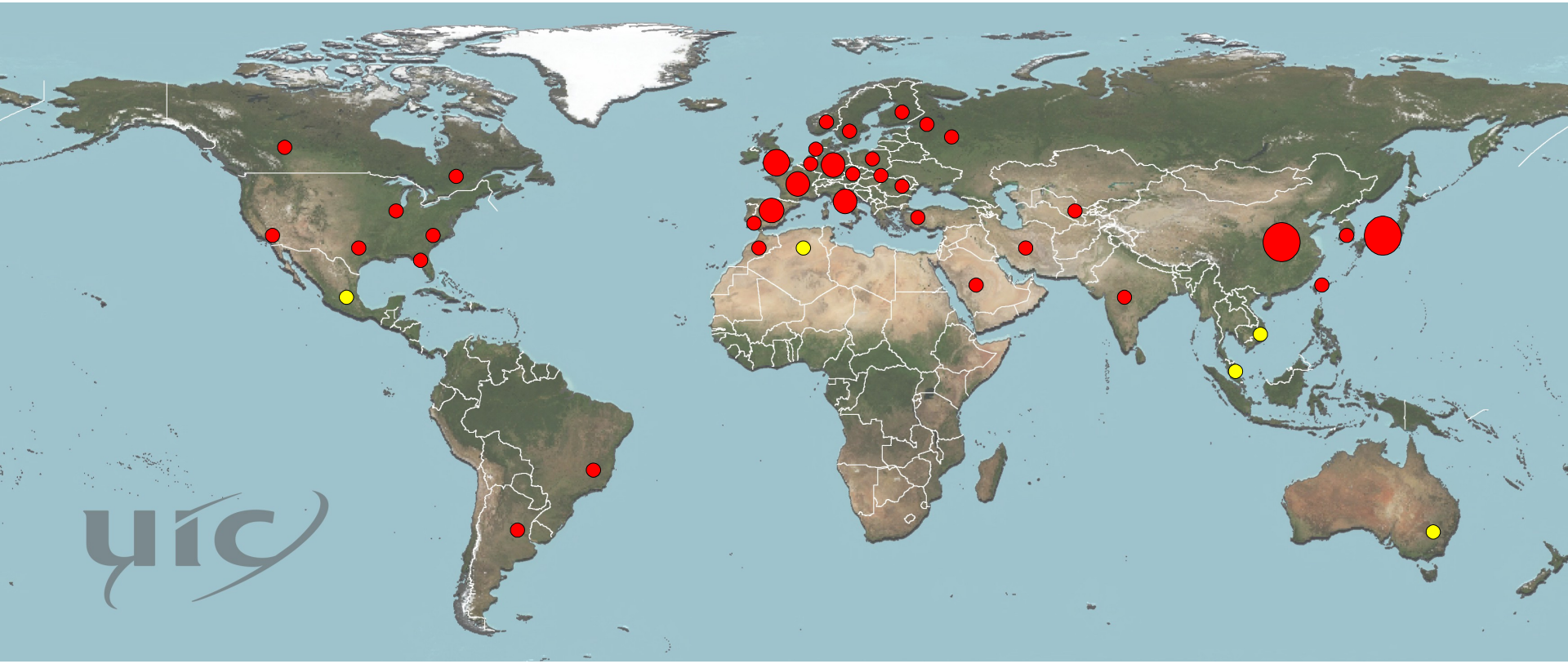


V ≥ High Speed in operation

V ≤ 200 km/h in operation

High speed in project

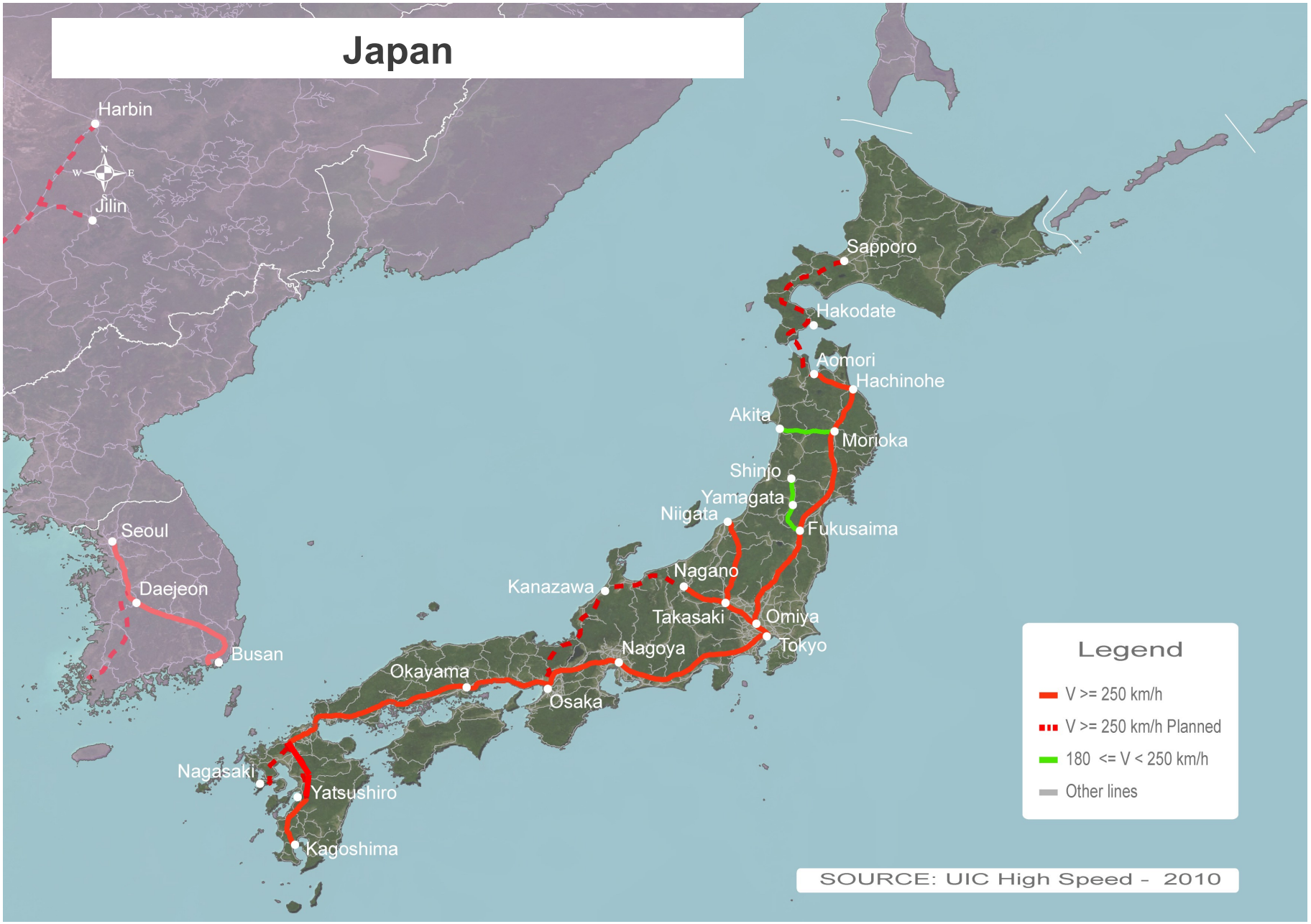
High speed rail systems forecast in 2025



V ≥ High Speed in operation

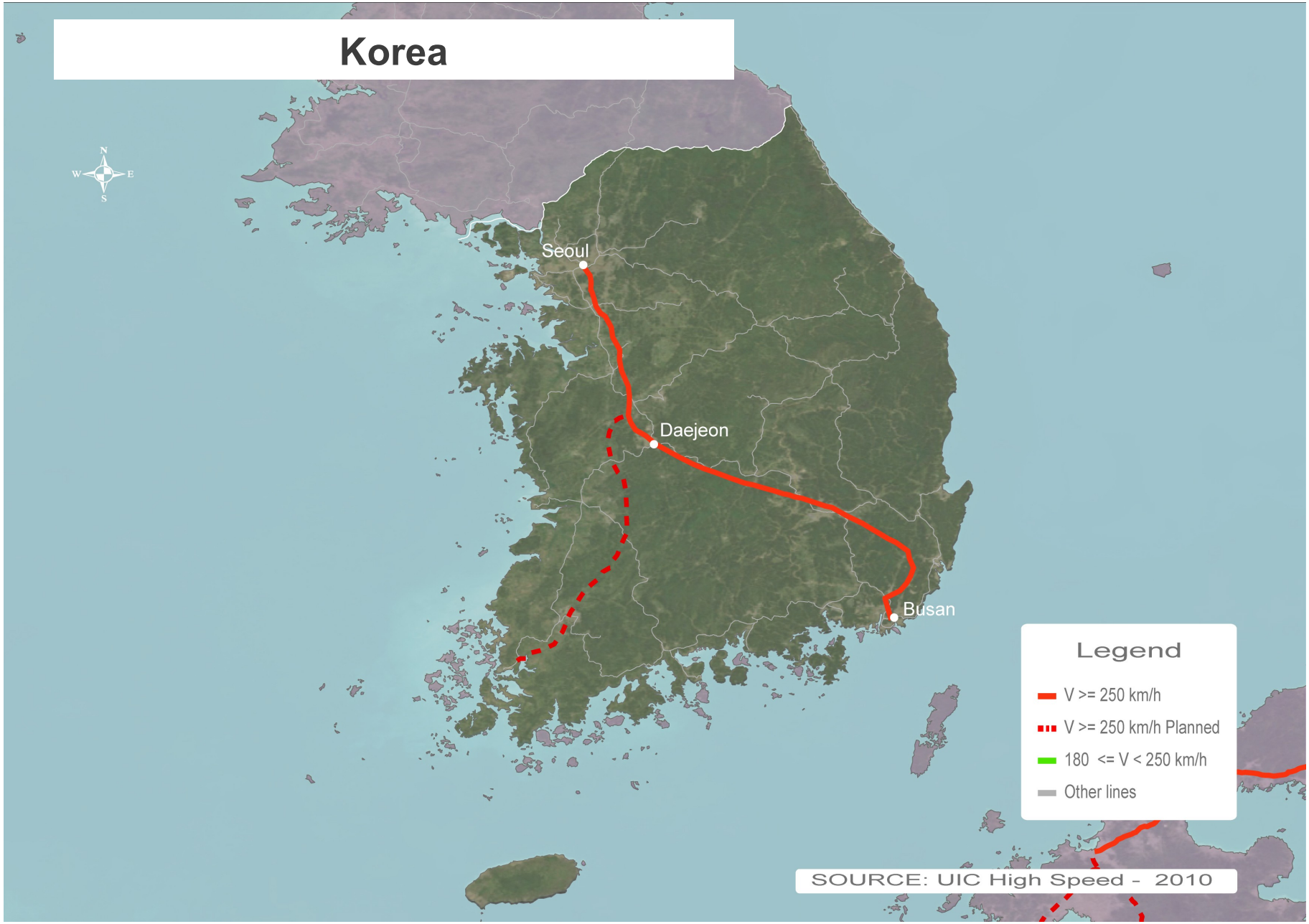
High speed in project

Japan


Harbin
Jilin
Seoul
Daejeon
Busan
Sapporo
Hakodate
Aomori
Hachinohe
Akita
Morioka
Shinjo
Yamagata
Niigata
Fukusaima
Kanazawa
Nagano
Takasaki
Omiya
Tokyo
Nagoya
Okayama
Osaka
Nagasaki
Yatsushiro
Kagoshima
Legend
V >= 250 km/h
V >= 250 km/h Planned
180 <= V < 250 km/h
Other lines
SOURCE: UIC High Speed - 2010


KYUSHU
WEST JAPAN

Korea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