



Bombardier Transportation

New Very High Speed Train

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BOMBARDIER
the evolution of mobility

Our ZEFIRO FAMILY

.... “a family for any Country”

Bombardier is one of the most experienced manufacturers of high speed train sector whether the Quality of our products is main driver and the Customer satisfaction is our mission.

Bombardier in Poland in 4 localizations employs more than 1000 people.

Until now more than 900 trains have been successfully provided worldwide matching the requirements and regulations of any Country.

...Germany, Italy, France, Norway, Sweden, Spain, Switzerland, U.S.A. and China are only some where Bombardier was committed to deliver an high speed solution.

Bombardier Very High Speed & High Speed Trains

43% ACELA USA
12% ETR500 Italy
17% THALYS F/GER/BNL
18% TGV France
20% EUROSTAR France
100% BM71 Norway
100% REGINA Sweden
100% X2000 Sweden
100% XinShisu China
100% CRH1 China
27% ICE-T/ICE-TD Germany
48% ICE3 Germany
49% ICE1/2 Germany
40% AVE S-130 Spain
40% AVE S-102 Spain
80% ICN Switzerland
100% CRH1E China



ICx (Germany)

CRH380D (China)

ETR-1000 (Italy)



ZEFIRO FAMILY

Product range

250 km/h

300 - 360 km/h

380 km/h

ZEFIRO 250

- Wide gauge car body
- 8-car train
- 16-car train

V300ZEFIRO*

- UIC gauge car body
- 8-car train TSI compliant

* In cooperation with AnsaldoBreda for selected markets.

ZEFIRO 380

- Wide gauge car body
- 8 car train

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ACELA USA
ETR500 Italy
Thalys F/GER/B/NL
TGV France
EUROSTAR France
BM71 Norway
REGINA Sweden
X2000 Sweden
XinShiui China
CRH1 China*
ICE-T / ICE-TD Germany
ICE 3 Germany
ICE 1/2 Germany
ICN Switzerland
AVE S-130 Spain
AVE S-102 Spain
ZEFIRO 250 China*
V300ZEFIRO Italy**
ZEFIRO 380 China*

* Manufactured by Bombardier Sifang Power (Qingdao) Transportation Ltd.
**Manufactured in cooperation with a strategic partner

The ZEFIRO products cover a wide range of VHS solutions for various markets and customers in the world

Very High Speed concept

Why 300kph or above?

There are not to many doubts about why high speed is better. A reason above all is the “time” with the high technology behind the product.

- “High technology means Quality and quality means Safety”

Looking at engineering development a speed up to 360kph, or above, require performances and comfort level pushed to the maximum capacity of the technology.

- *There are significant differences and different concept if compared with lowest speed at 200 or 250kph.*

A must for VHS train is the carbody-shell design, it shall be extended to the limit of height and width which allows a maximum seating capacity, easy access, more free space and easy walking along the vehicle.

- *These points ensures the highest Customer revenue along the whole train life”*

ZEFIRO 380

China 380Kph.... “I’m the fastest of the family”

The *ZEFIRO* train sets new standards with a strong and powerful design



ZEFIRO PLATFORM

Main features

ZEFIRO 380

In 2009, the Chinese Ministry of Railways ordered 70 *ZEFIRO 380* high-speed trains. These trains will incorporate Bombardier's advanced ECO4 energy saving technologies to create best-in-class energy and operating efficiencies.

- Produced at Bombardier's JV site in Qingdao
- Service speed range up to 380 Km/h
- Energy savings of app. 20% due to aerodynamic design.



ZEFIRO 250 / CRH1

Since 2010, the *ZEFIRO 250* has been transporting overnight travelers in China into new realms of comfort. With the delivery of the *CRH1*, Bombardier was the first manufacturer to supply a fully locally made high speed train in China.

- Produced at BT's JV site in Qingdao
- Service speed range up to 250 km/h
- Outstanding capacity of 670 seats in an 8-car and 1,300 seats in a 16-car configuration



V300ZEFIRO FRECCIAROSSA 1000 *“I’m sorry for being so luxury”*

Truly a pan-European train equipped with multi-voltage technology



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V300ZEFIRO

FRECCIAROSSA 1000 “the backbone”

Italian Railways are investing a significant effort on very high speed lines, developing a VHS backbone to be able to connect rapidly the big hubs and increasing the regional redistribution also.

Huge demand of VHS is from passengers and major cities requiring a travel model such as “non stop service”

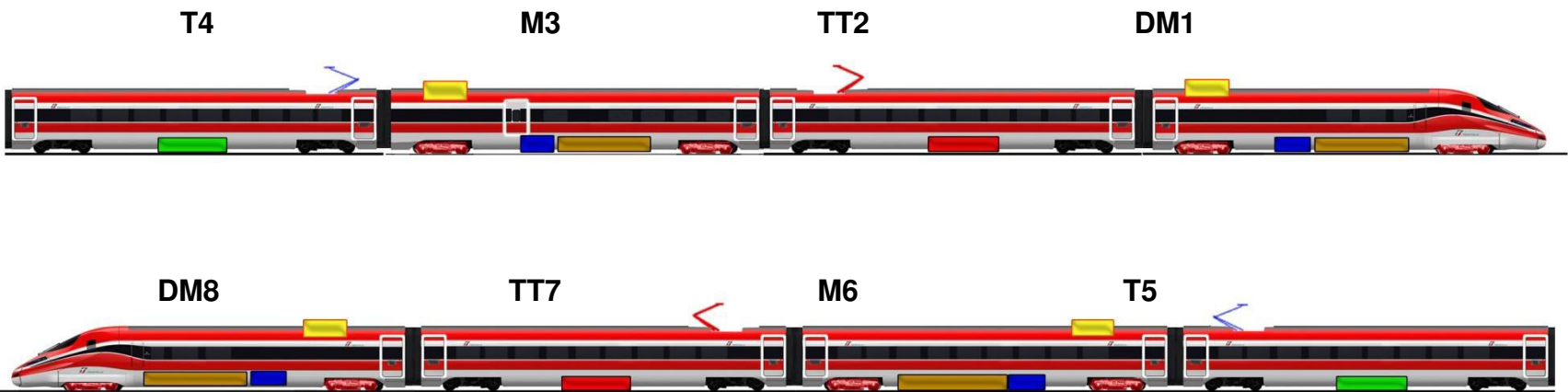
The strength of the very high speed is time to reach the down town and quality of travelling ..no better solution in a range of 400km – 500km

Excellent comfort, high technology, less stress, family feeling, always connected and travelling time.. are some samples how Italy decided to answer to the European passenger

....through our V300Zefiro, the Frecciarossa 1000.

FRECCIAROSSA 1000

Lay - out

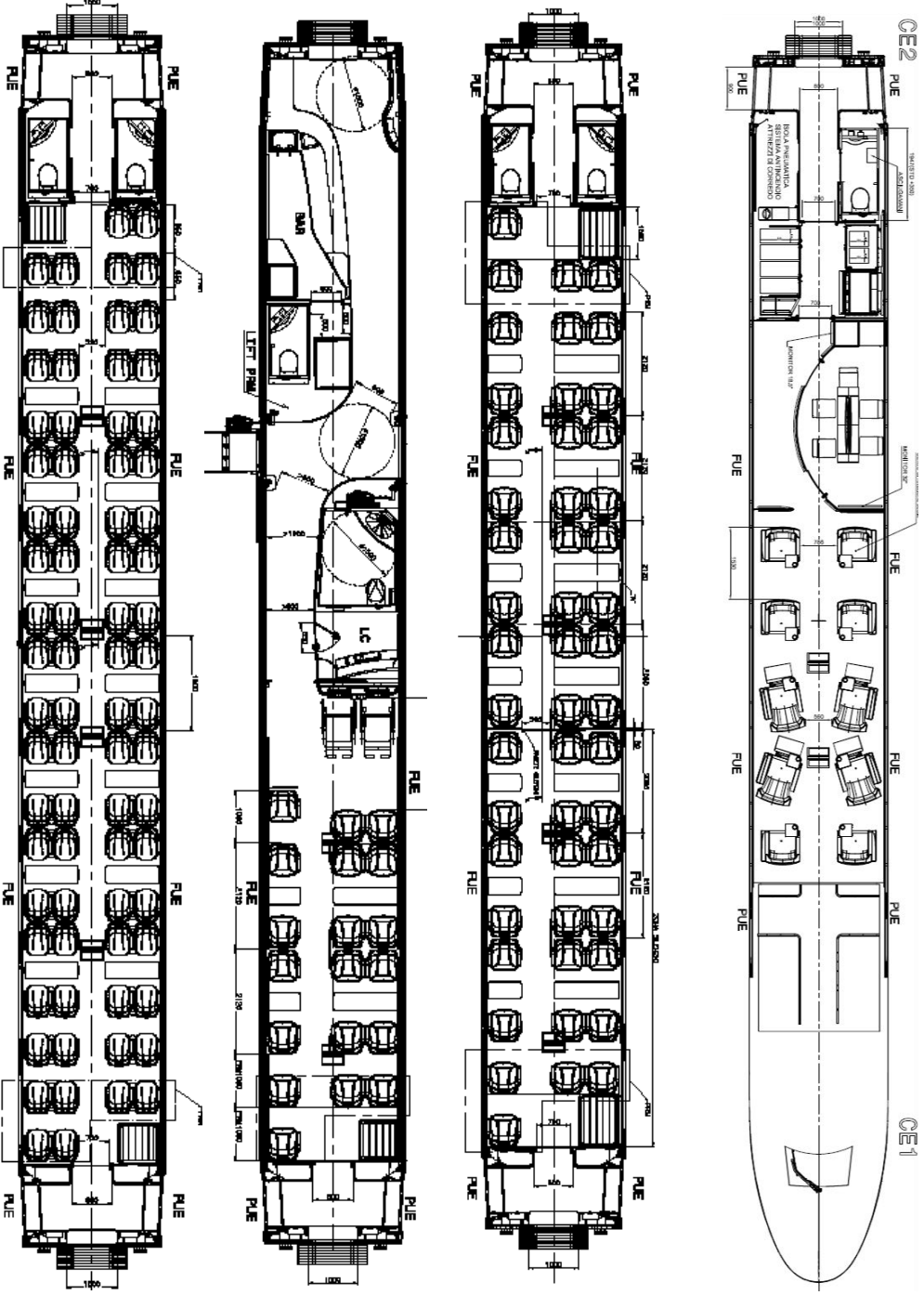


- | | | | |
|---|-----------------------------|---|----------------------|
|  | Transformer |  | Motor bogie |
|  | Traction converter |  | Trailer bogie |
|  | Brake resistors |  | Pantograph DC |
|  | Batteries / Battery charger |  | Pantograph AC |
|  | AUX converters | | |

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FRECCIAROSSA 1000

Lay - out



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FRECCIAROSSA 1000

Main Technical data (Italian configuration)

Parameter	Values
Max speed (25 kV)	400 km/h
Service speed	360 km/h
N° of cars / train length	Not articulated 8-car train set / 202,000 mm
Capacity range	(up to 600) 455 seats + 2 PRM/HK places per train
Propulsion	9.8 MW Single axle drive with 50% motorized axles
Voltage	25 kV AC & 3 kV DC (optional:15 kV AC; 1.5 kV DC)
Starting acceleration	> 0.7 m/s ²
Multiple operation	yes
Carbody	Aluminium car body, UIC profile 505.1, 13 + 1 PRM doors per side
Car length	End car: 26,300 mm / trailer car: 24,900 mm
Car height / width / floor level	4,080 mm / 2,924 mm / 1,240 mm
Service train weight / axle load	446 t / 17 t
TSI compliance	Compliant with all new international and national standards
Bogie	Bombardier FLEXX speed with 2.85 m wheelbase
PIS	Advanced passenger Information System
FDE System	Passive and Active fire fighting (auto extinguish system in passengers saloon),

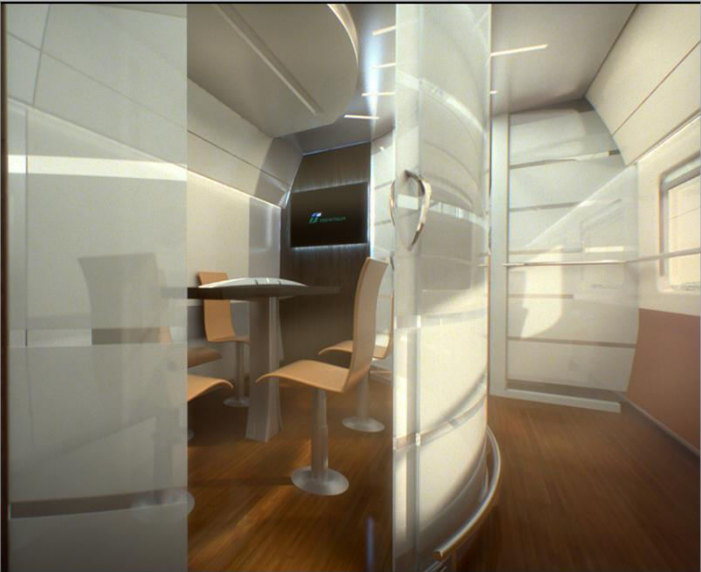
FRECCIAROSSA 1000

Executive class

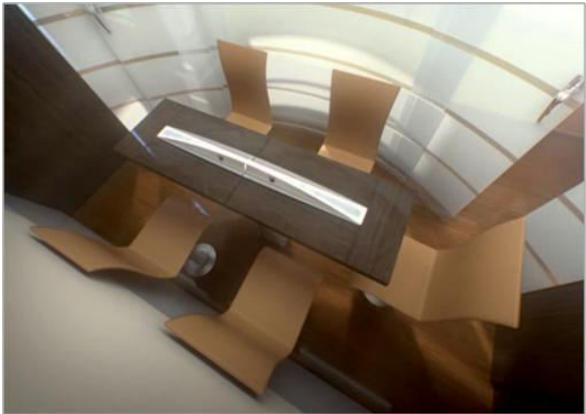
Executive compartment with rotating seats...



Meeting room with monitor and facilities



A new standard of comfort...

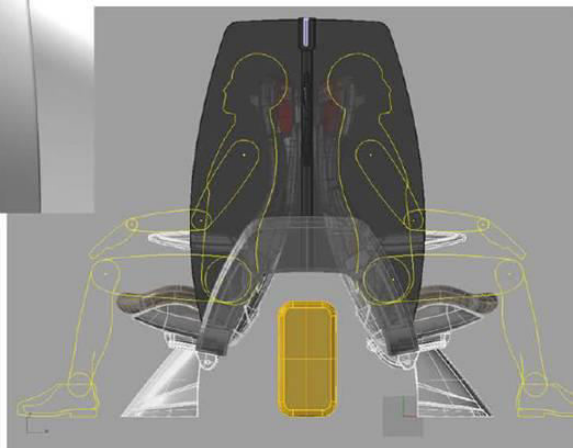
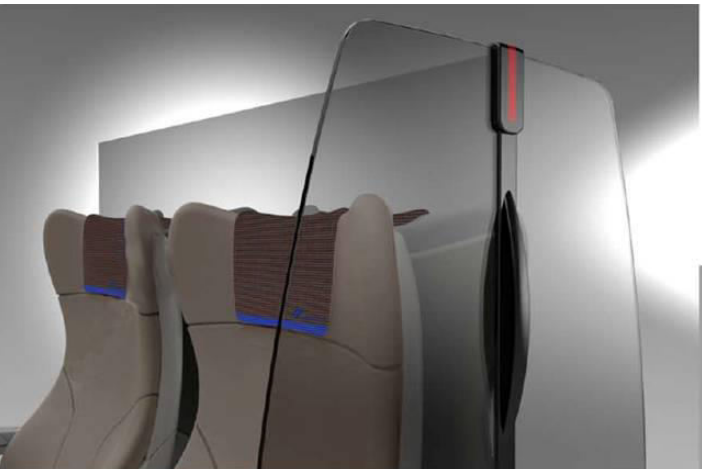


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FRECCIAROSSA 1000

Business class

*Pure leather
Aircraft concept with push button in the armrest*



Additional luggage storage between back to back seats

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FRECCIAROSSA 1000

Premium and Standard classes

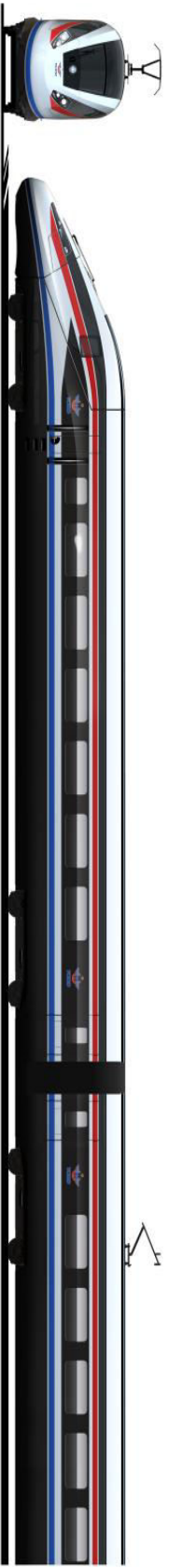
*Premium
Comfort excellence*



*Standard
High technology for anyone*

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V300ZEFIRO “a new generation”



V300ZEFIRO Interiors

Business area



First class area

V300ZEFIRO Interiors

Second class



Vestibules and Toilet

V300ZEFIRO Interiors

Restaurant & snack bar area

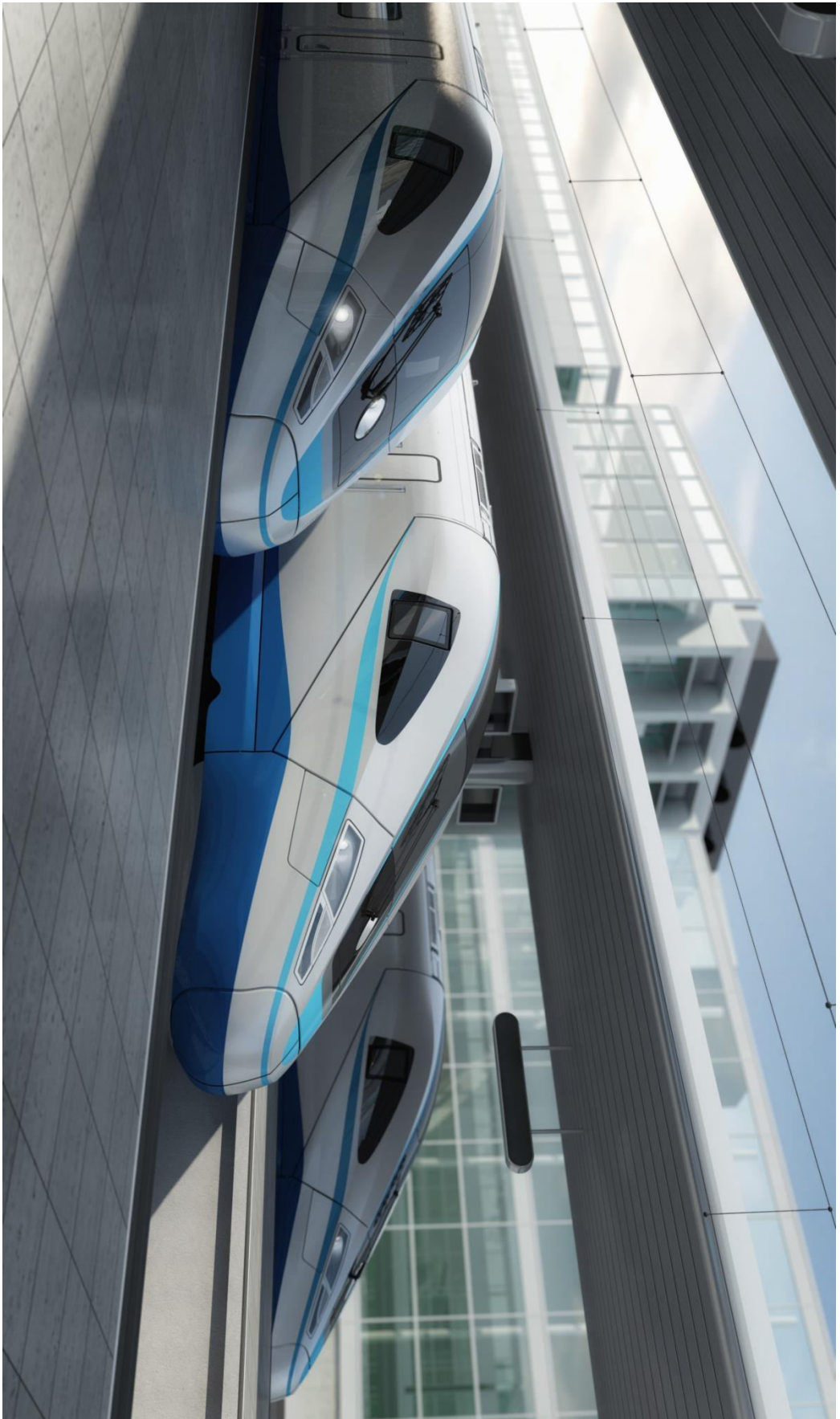


Our Vision
...next stop Poland

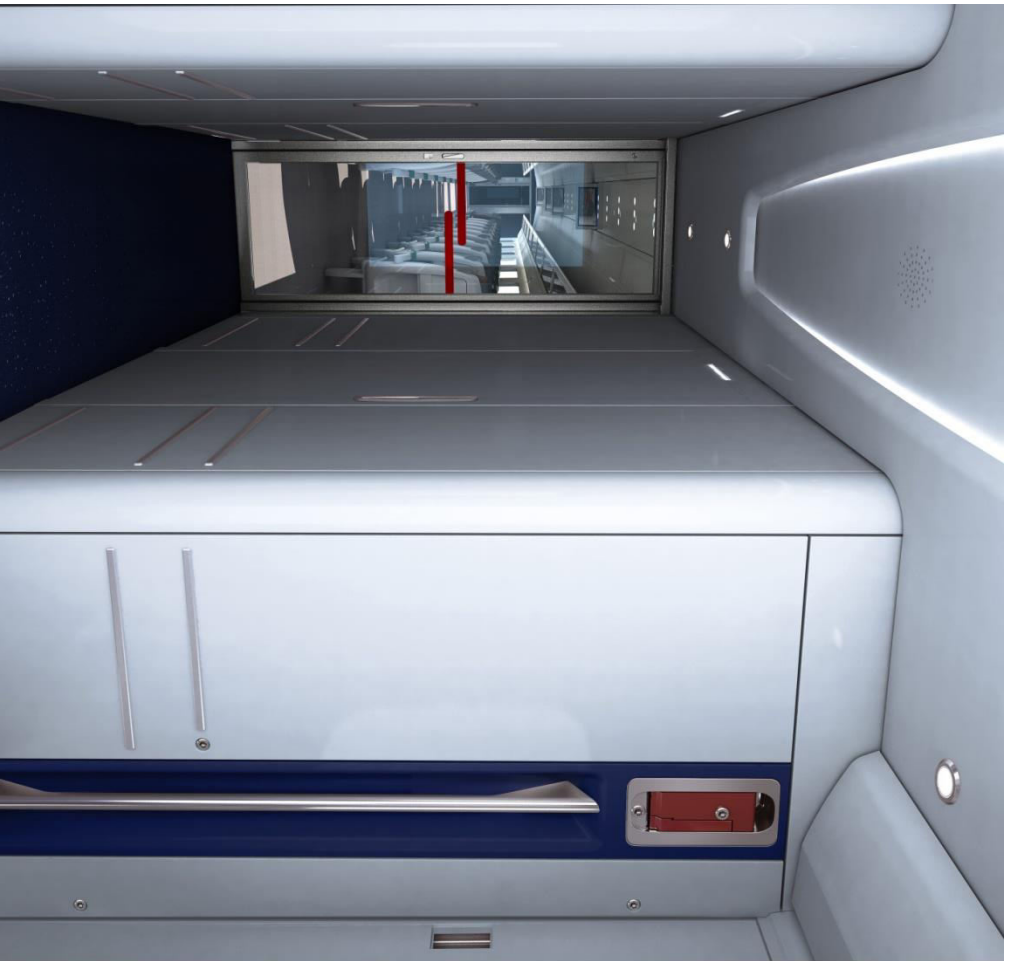


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Our Vision
...next stop Poland



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Our Vision ...next stop Poland



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