



Next Generation Train - NGT

Taking care of passengers

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175 years railway

1835 Nuremberg – Fürth „Der Adler“



Locomotive; single axle; steam-powered 15 KW

28 (65) km/h; mechanical spindle brake; operational performance – often by horses



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Transparency 2

Next Generation Train

24/11/2011



Fast train set DRG 137

1935 design Cologne - Linke-Hofmann, Breslau



Streamlined railcar; single axles; diesel electric engine 882 KW
160 km/h; magnetic brake; braking distance 800m; performance 35.000 km/month



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Transparency 3

Next Generation Train

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Next Generation Train

2035 Hamburg Dammtor ready for departure



streamlined double deck cab car; single wheels ; electric drive 18 MW
400 km/h; aerodyn. + magnetic braking, distance 8 km; performance 50.000 km/month



Next Generation Train Topics and Goals

1. Increasing the certified train speed to 400 km/h
2. Halving the specific energy consumption
(compared with ICE 3 at 300 km/h)
3. Noise reduction
4. increase of comfort
5. Improvement of the driving safety
6. Improvement of wear behaviour and life cycle costs
7. Cost-efficient design: through modularization and system integration
8. Increasing efficiency of development and permission processes



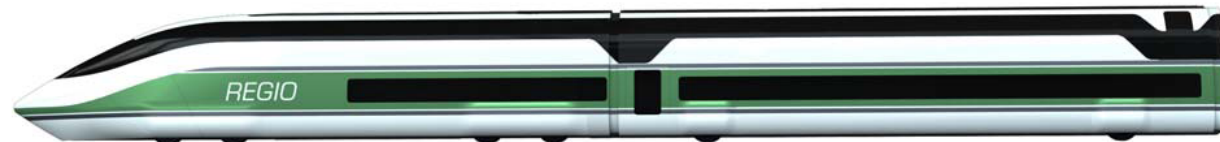


Next Generation Train Vehicle types

- Ultra high speed train set
NGT HST



- High speed intercity-train set
NGT REGIO



- High speed freight transportation
NGT Cargo





NGT High-speed Vehicle Concept

propulsion

- wheel hub motors
- electrical without catenary
- auxiliary motor for transfer runs

car body

- different frame construction with sandwich infill

entrance and exit

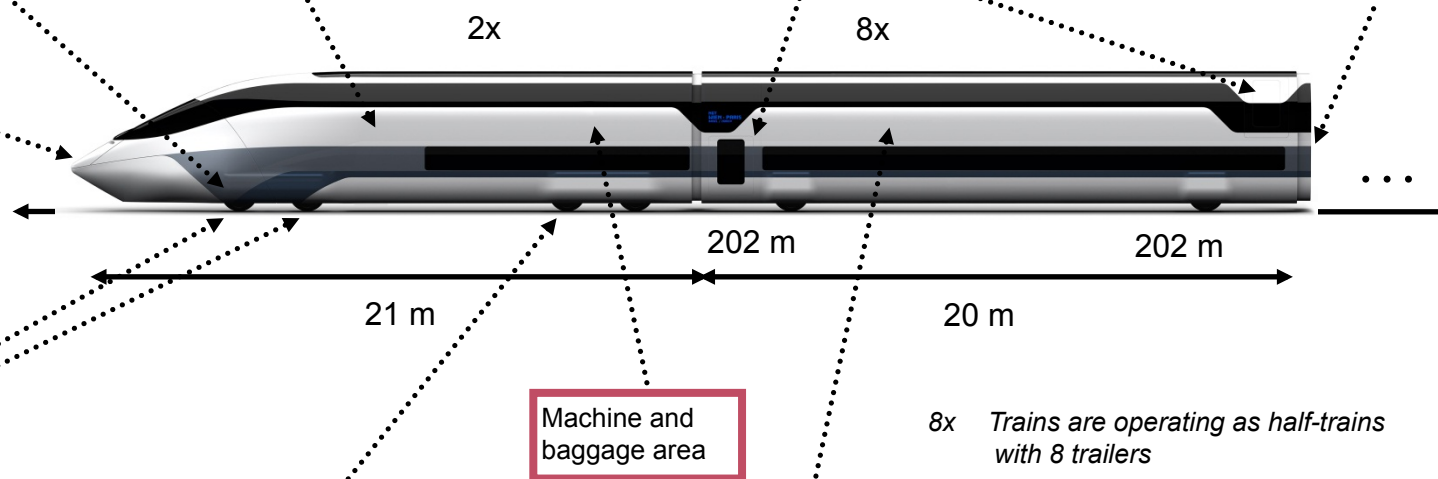
- doors
- passenger flow analysis

coach intersection

- innovative concept to shorten couple distance
- separable, autonomously driving units

power head

- optical coupling
- aerodynamic side wind stability
- Tunnel entrance nose



running gears

- single wheel - double wheel set
- single wheel - single wheel set
- active damped wheels

breaks

- recuperative
- aerodynamically
- mechanically

interior fittings

- FRP with natural fiber
- LFI process with PUR
- acoustics and air conditioning

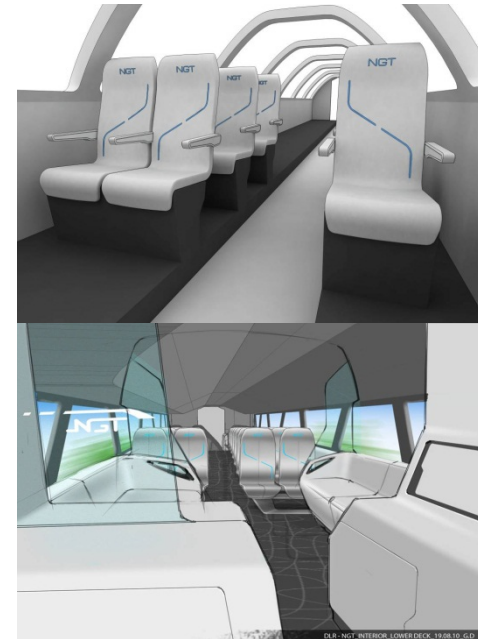
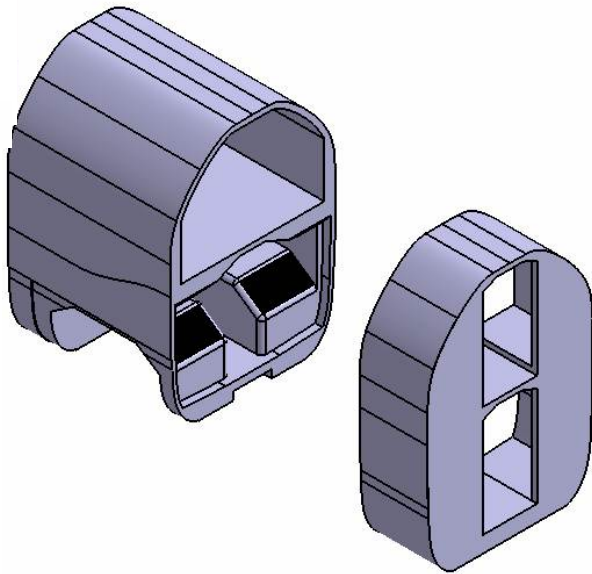
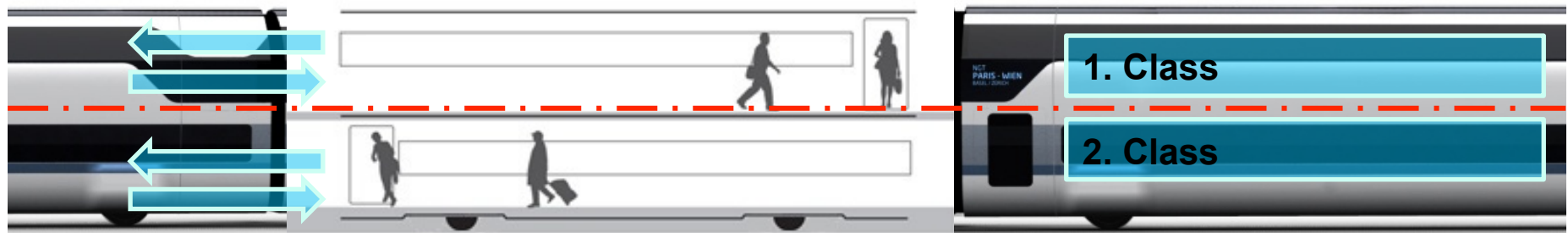
operational concept

- dynamical train separation
- driver assistant

8x Trains are operating as half-trains with 8 trailers

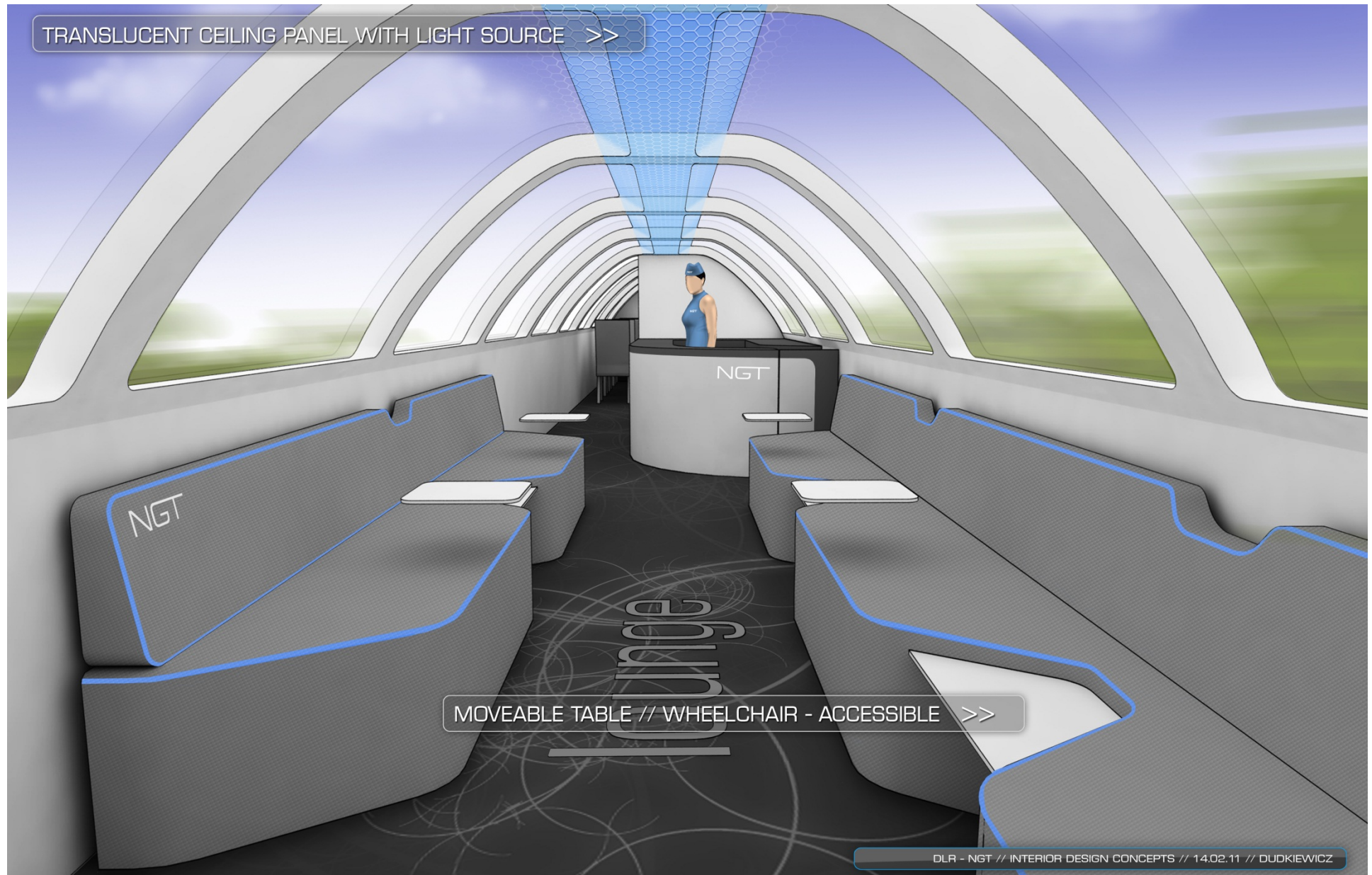


Horizontal separation of classes





TRANSLUCENT CEILING PANEL WITH LIGHT SOURCE >>

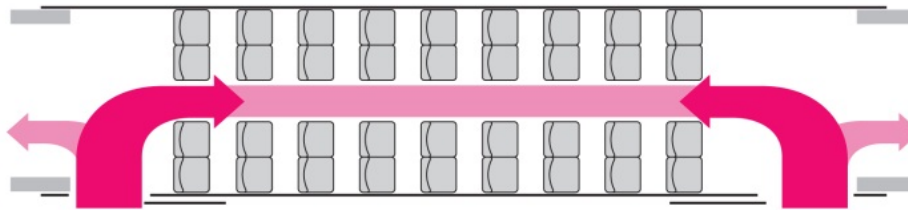


MOVEABLE TABLE // WHEELCHAIR - ACCESSIBLE >>

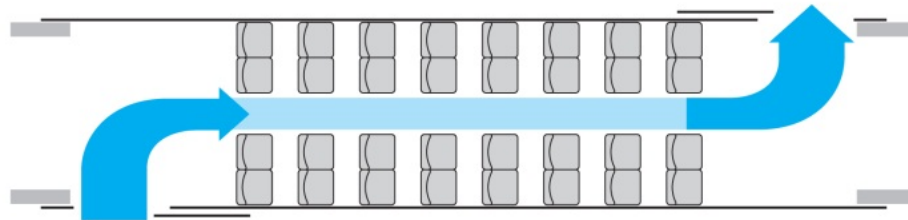
DLR - NGT // INTERIOR DESIGN CONCEPTS // 14.02.11 // DUDKIEWICZ



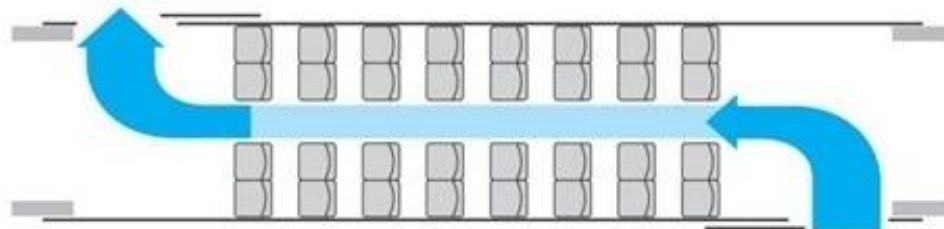
Passenger flow



most trains at time



2. class, lower deck

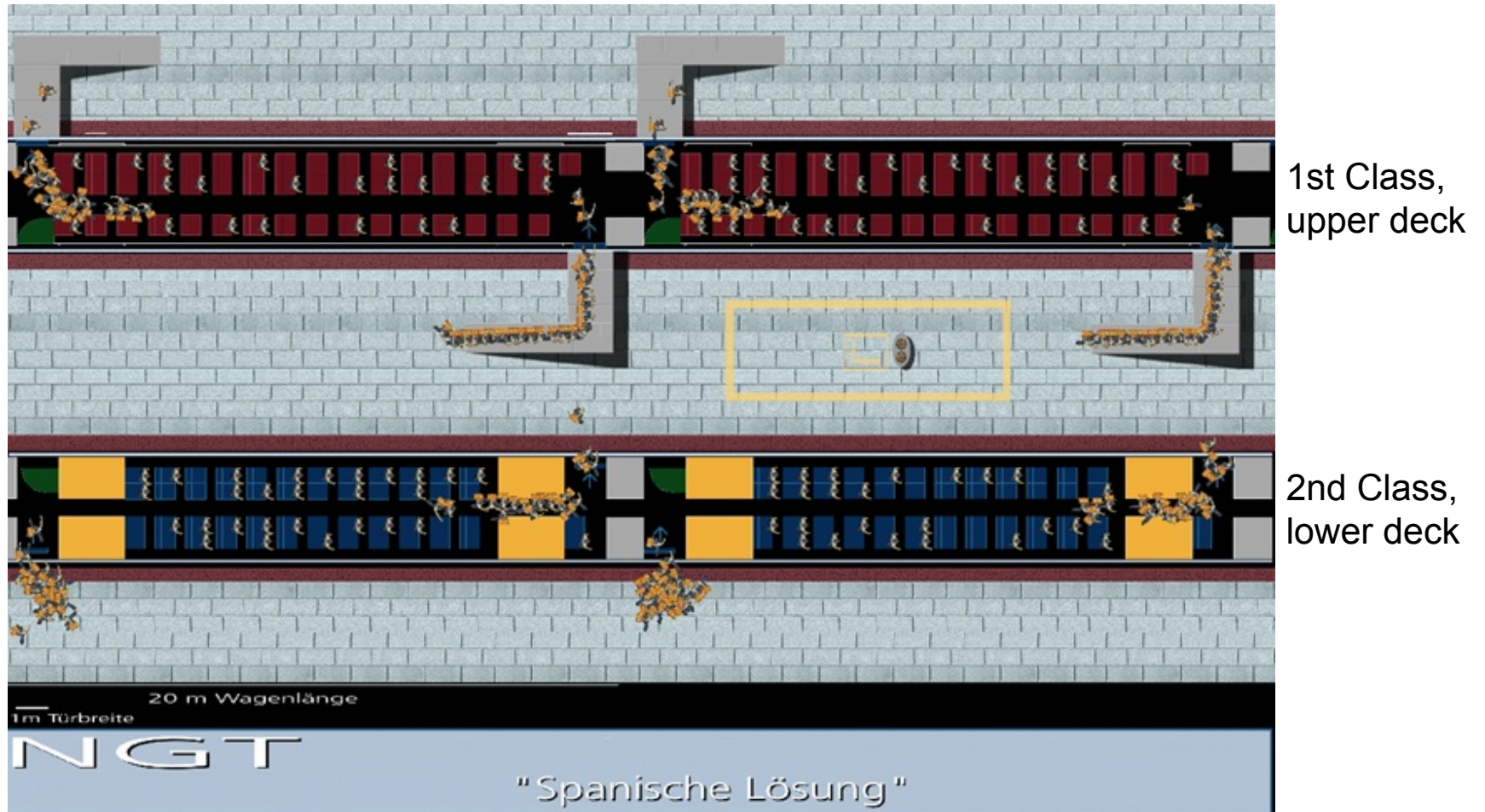


1. class, upper deck



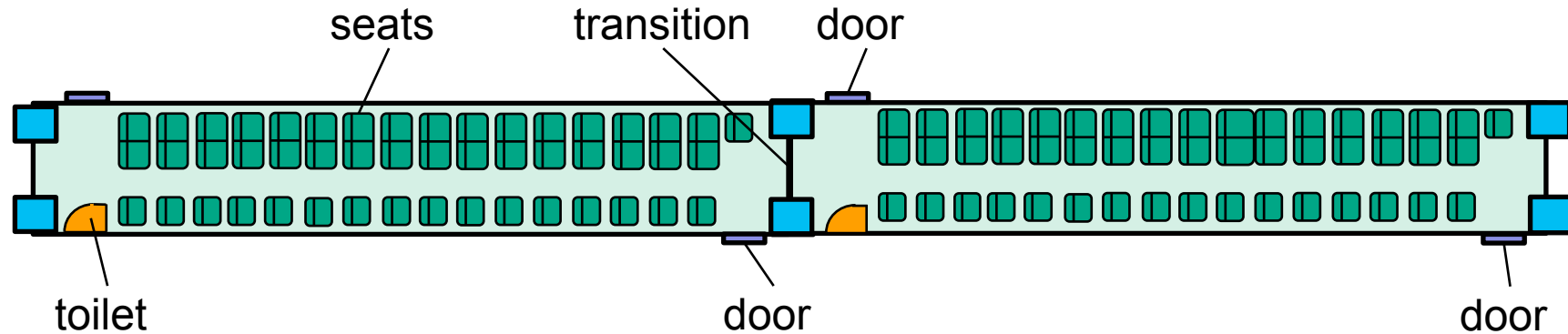
Scenario

The „Spanish solution“ allows simultaneous boarding / de-boarding

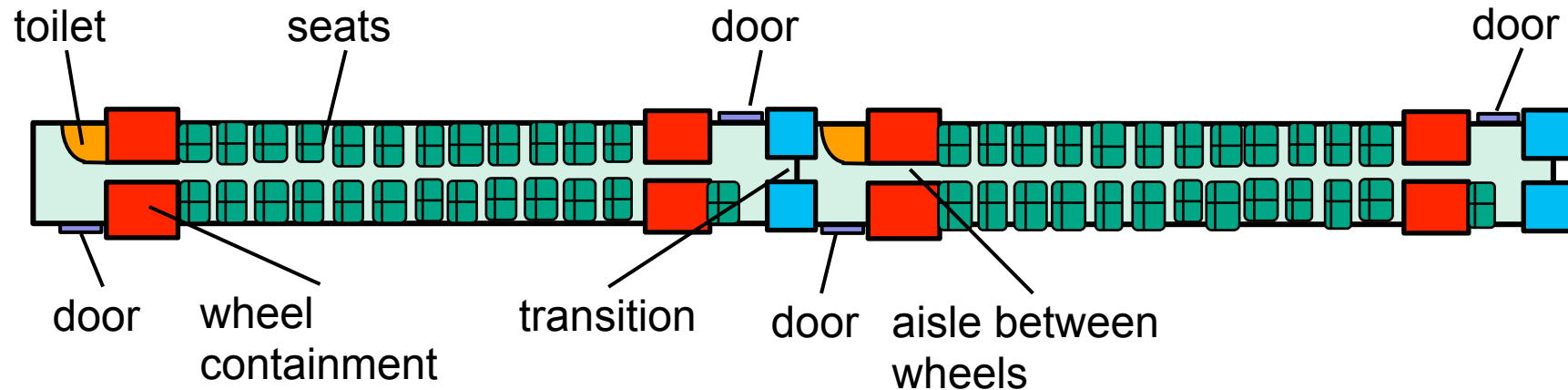


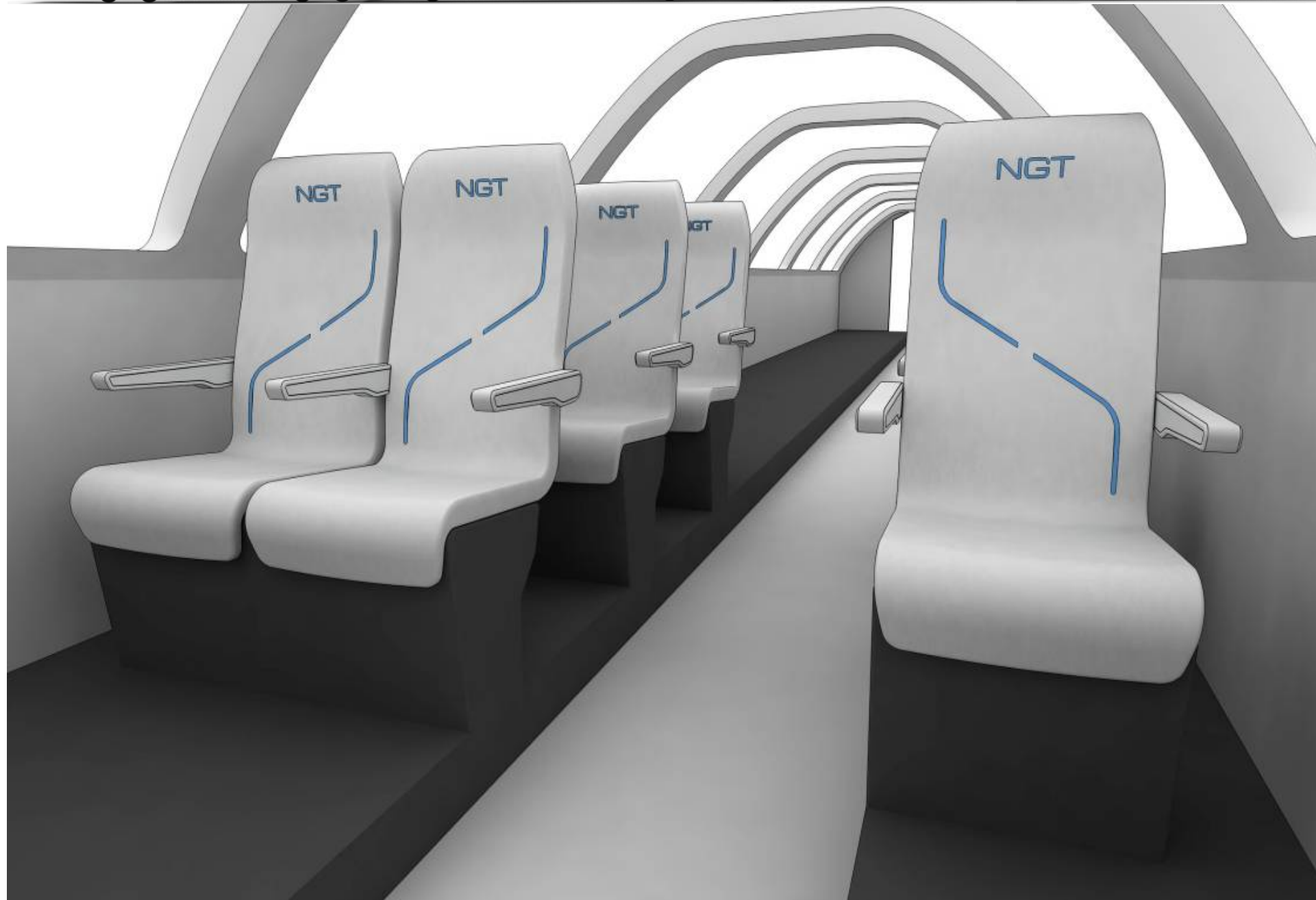


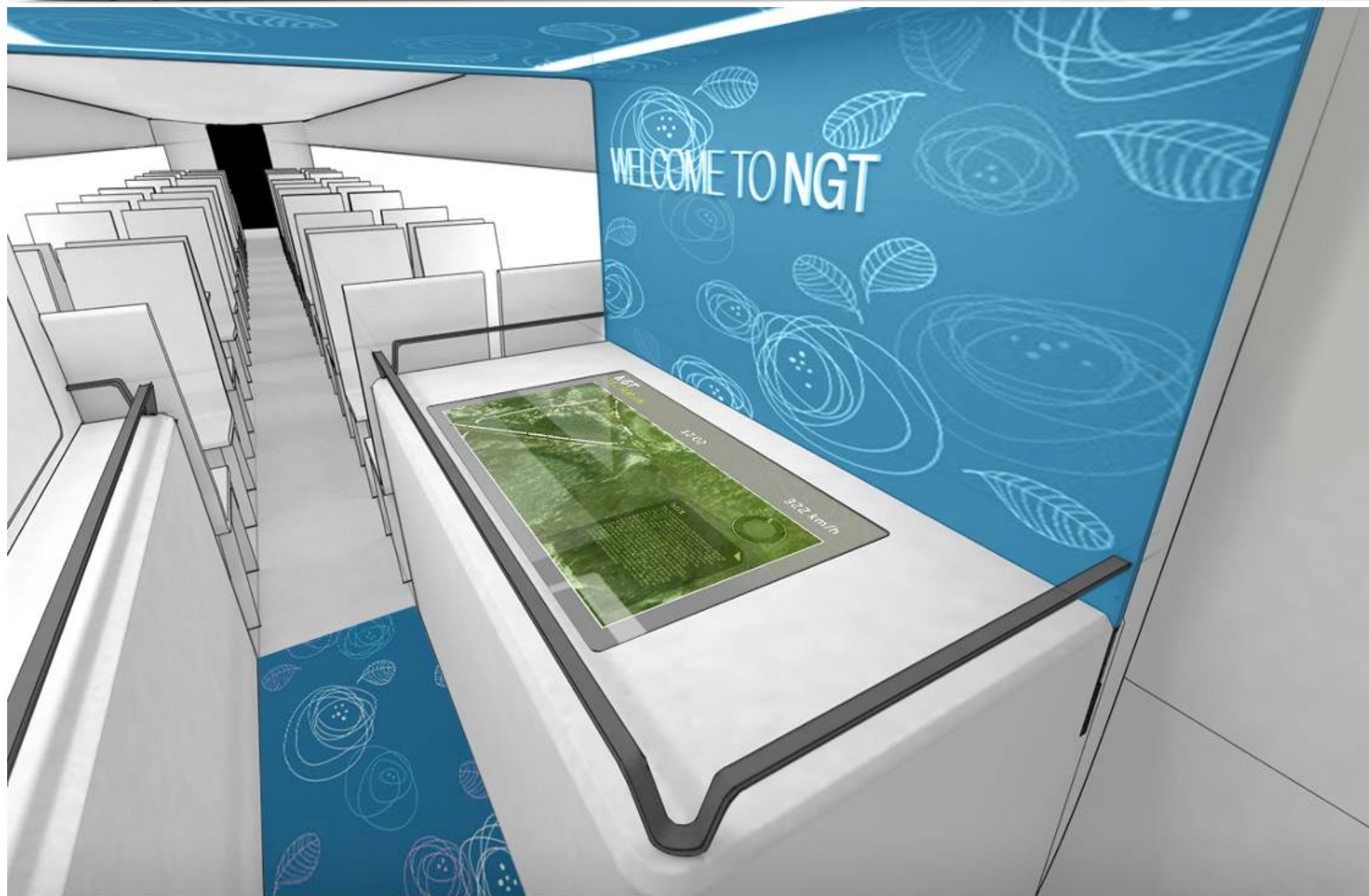
1st class upper deck (maximum seating)

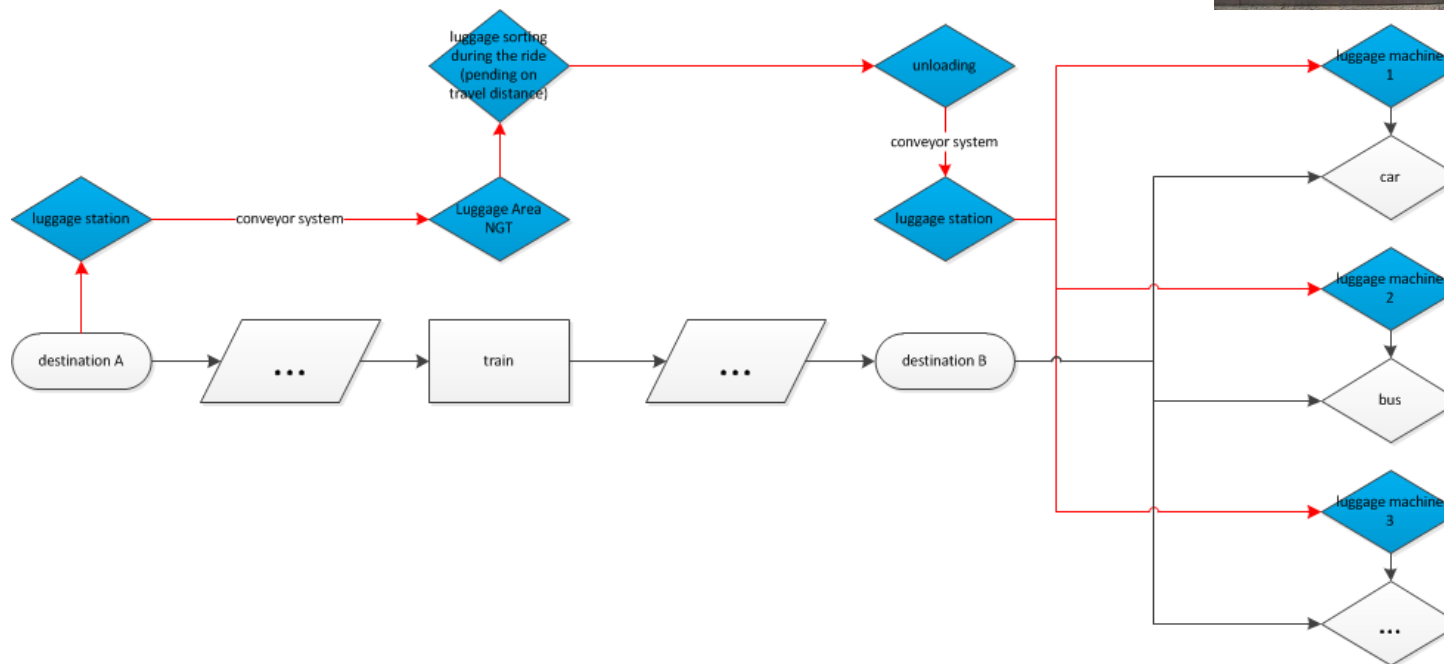


2nd class lower deck (maximum seating)



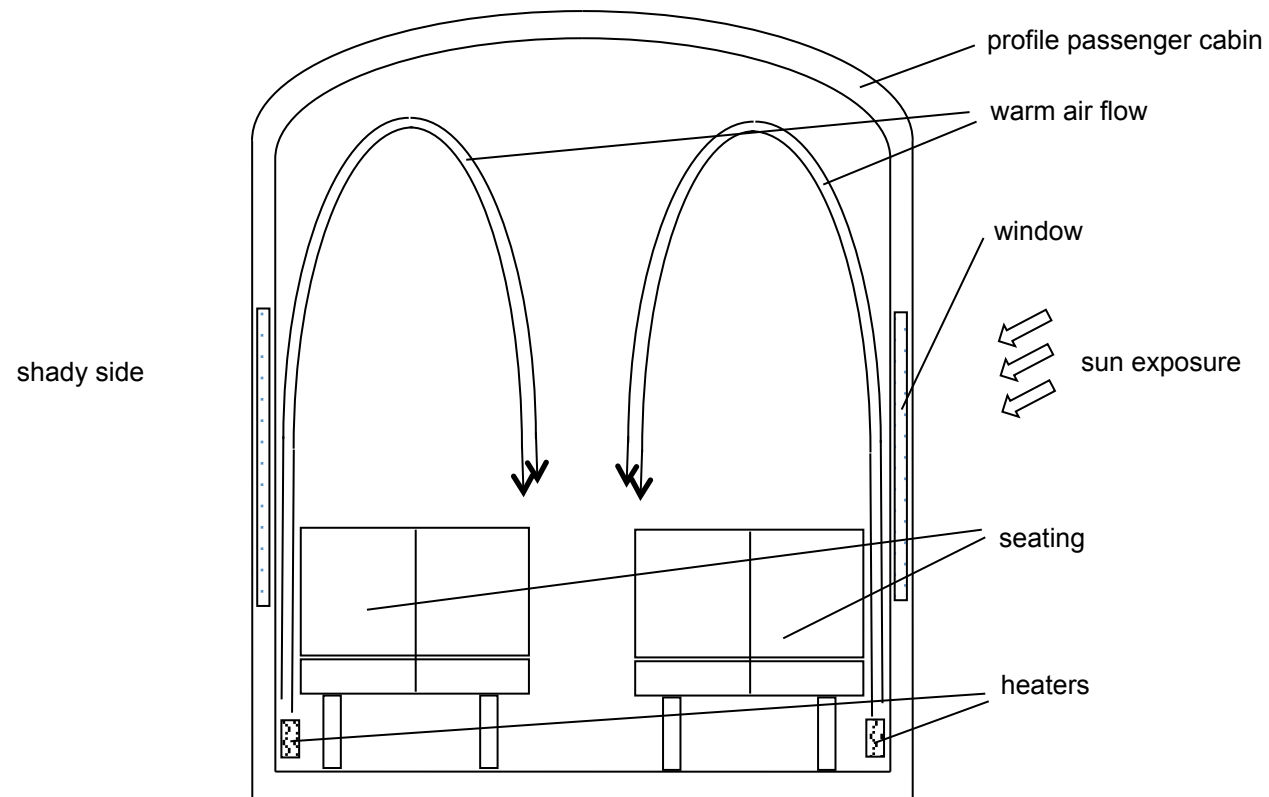






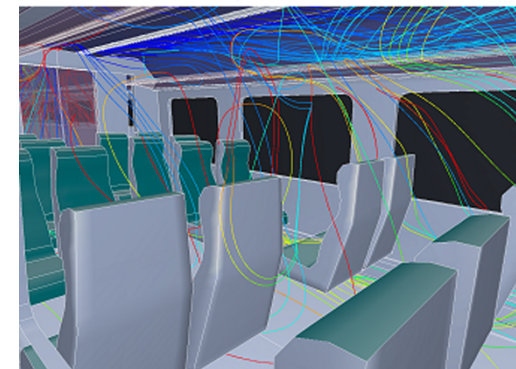
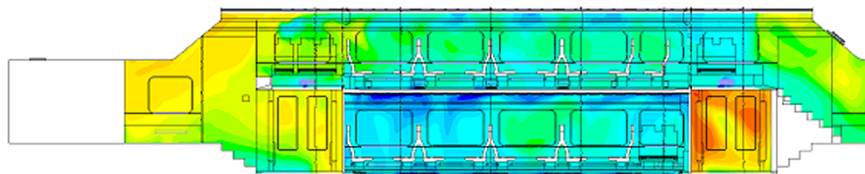
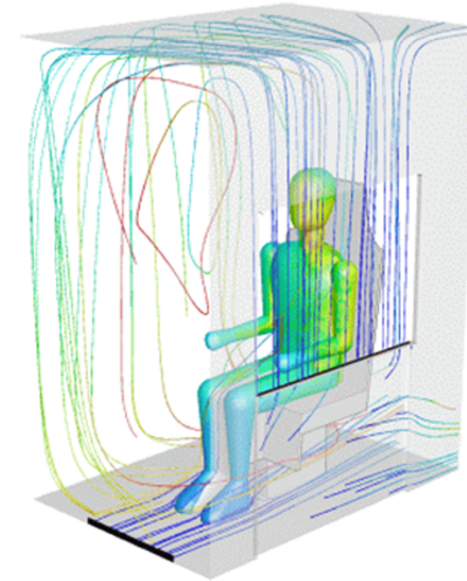
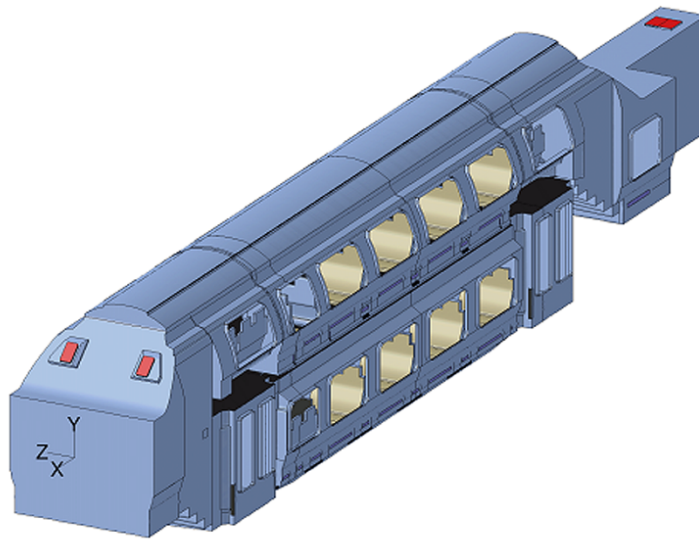


Infrared heating



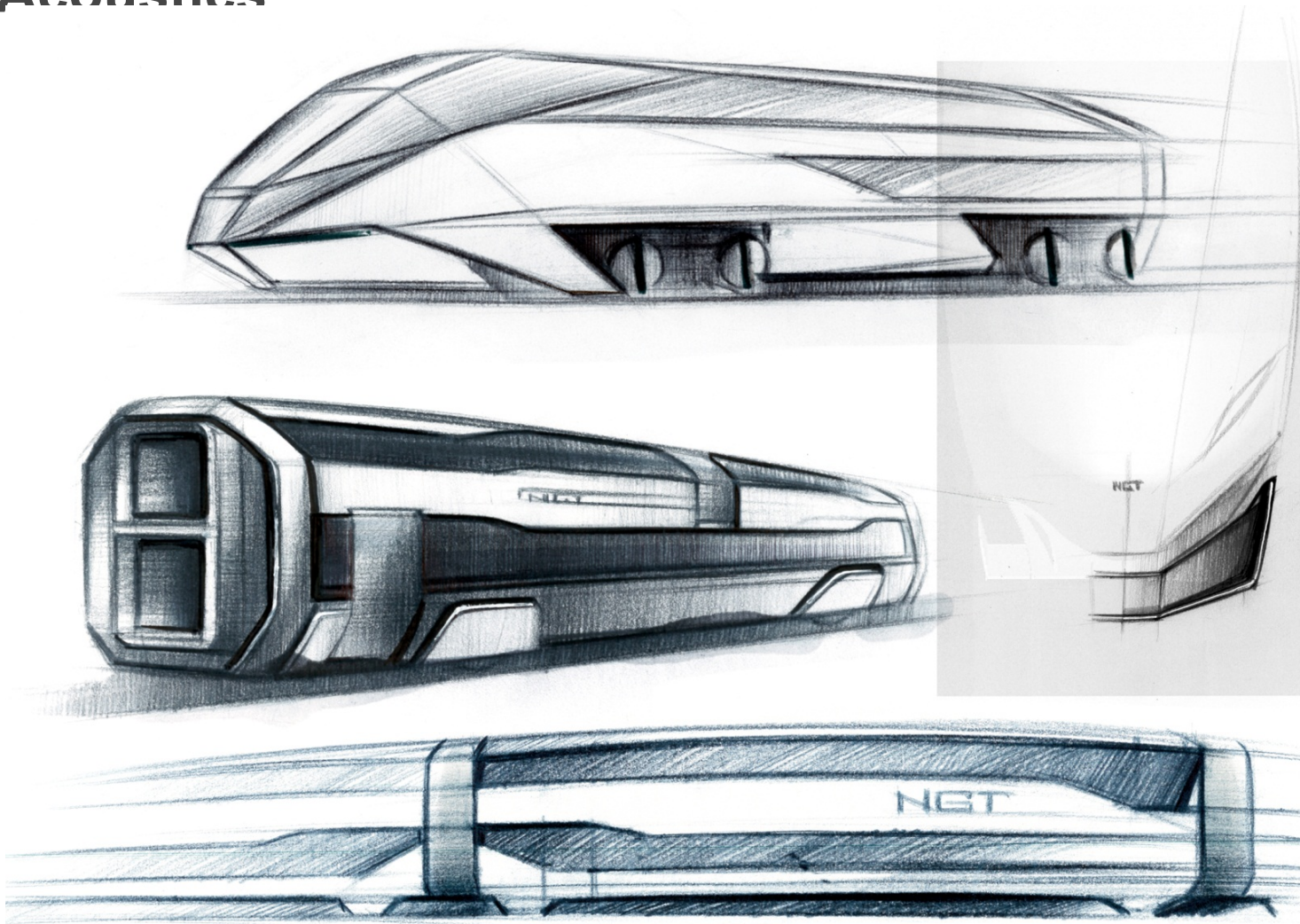


Standard room air conditioning





Acoustics





Summary

Double deck – high speed train „Next Generation Train“

- lightweight
- energy-efficient
- quiet
- passenger friendly
- low-wear
at wheel-rail contact





**Thank you
for your attention**