



TALGO COMO RESPUESTA A LA MOVILIDAD DEL FUTURO

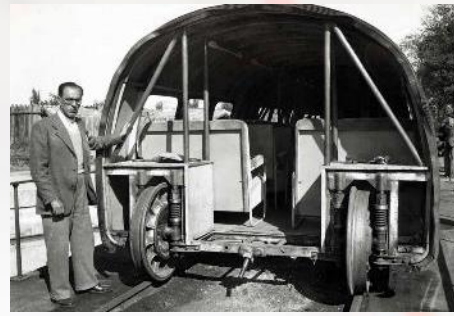
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**Jornada Hispano-Alemana sobre el Sector
Ferroviario**
18 de Abril de 2024



PATENTES TALGO



✓ Tren Articulado Ligero Goicoechea Oriol

✓ Founded in 1942

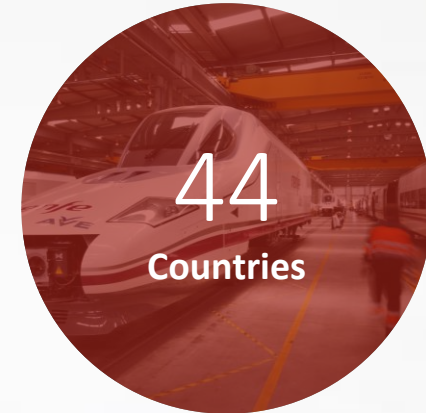
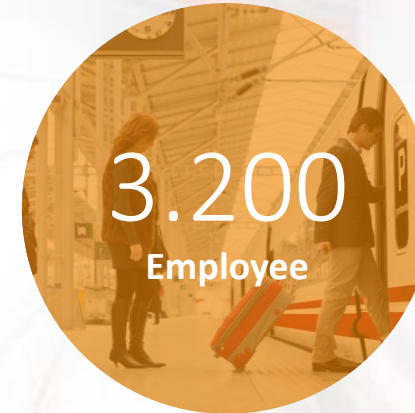
✓ Specialized in high speed

✓ Unique technology

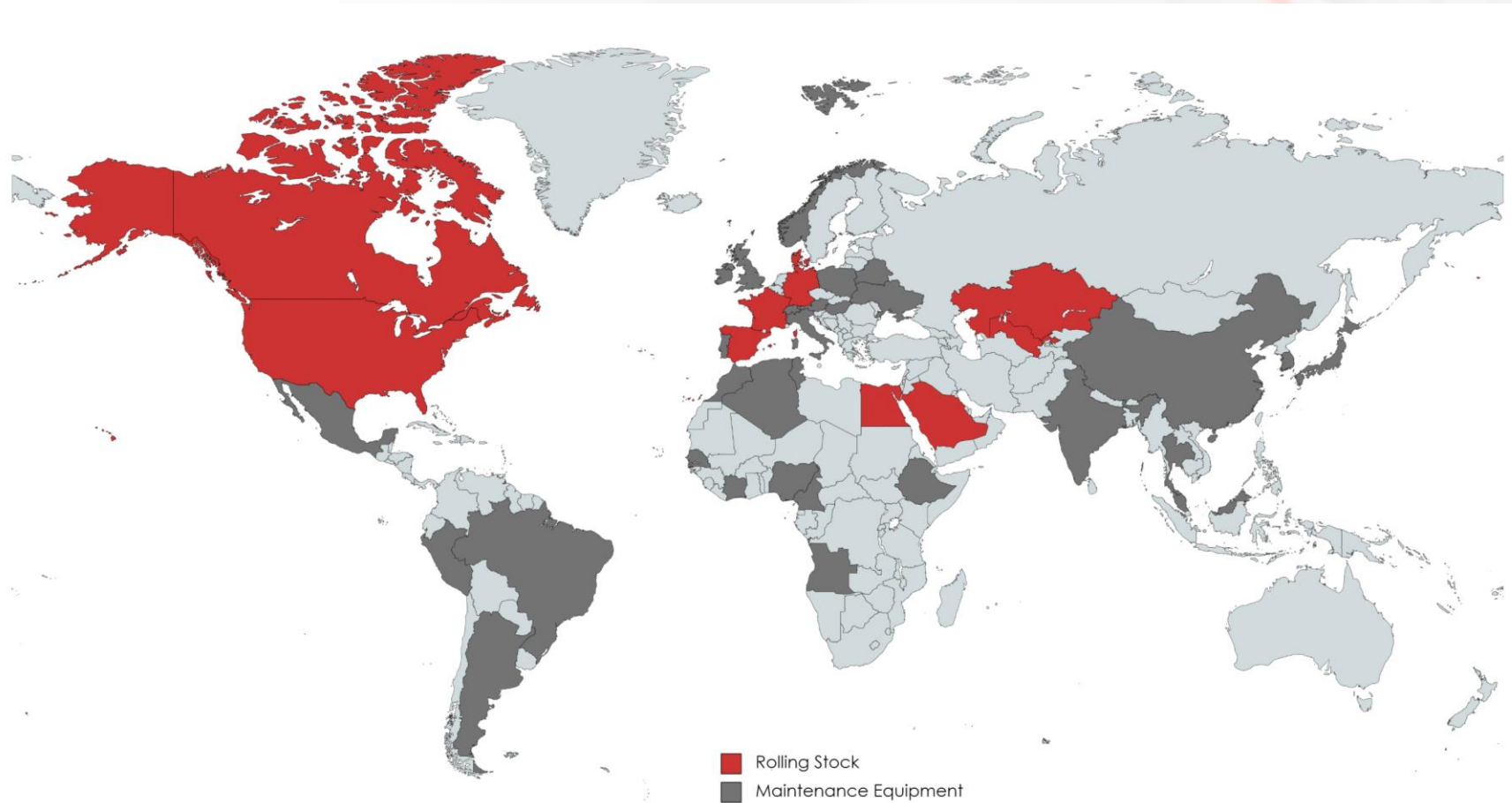
- Gauge changing & self-guiding wheels

✓ Three business units

- Design & manufacturing
- Maintenance & overhaul
- Maintenance equipment

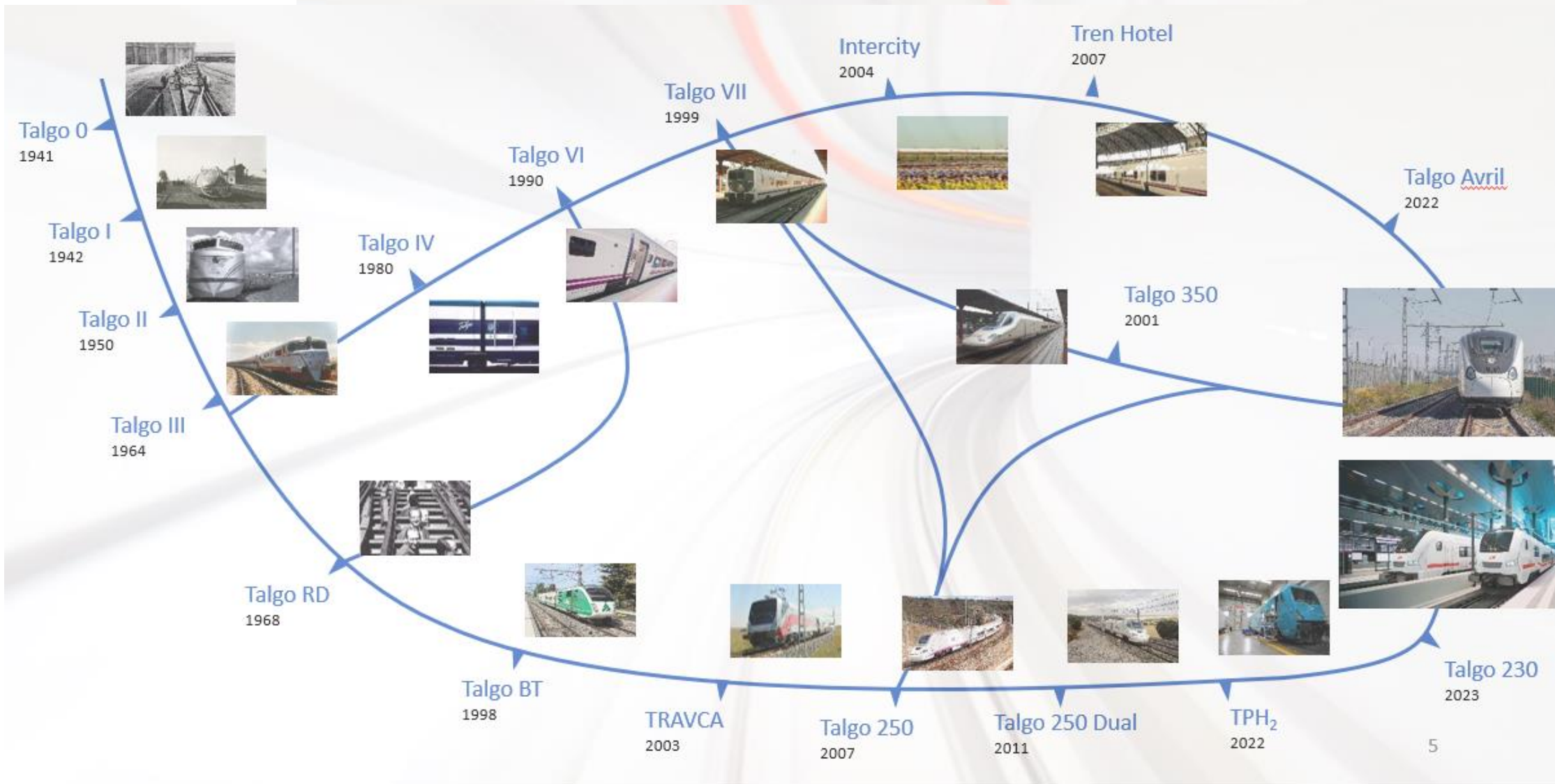


GLOBAL PLAYER: INDUSTRIAL PRESENCE

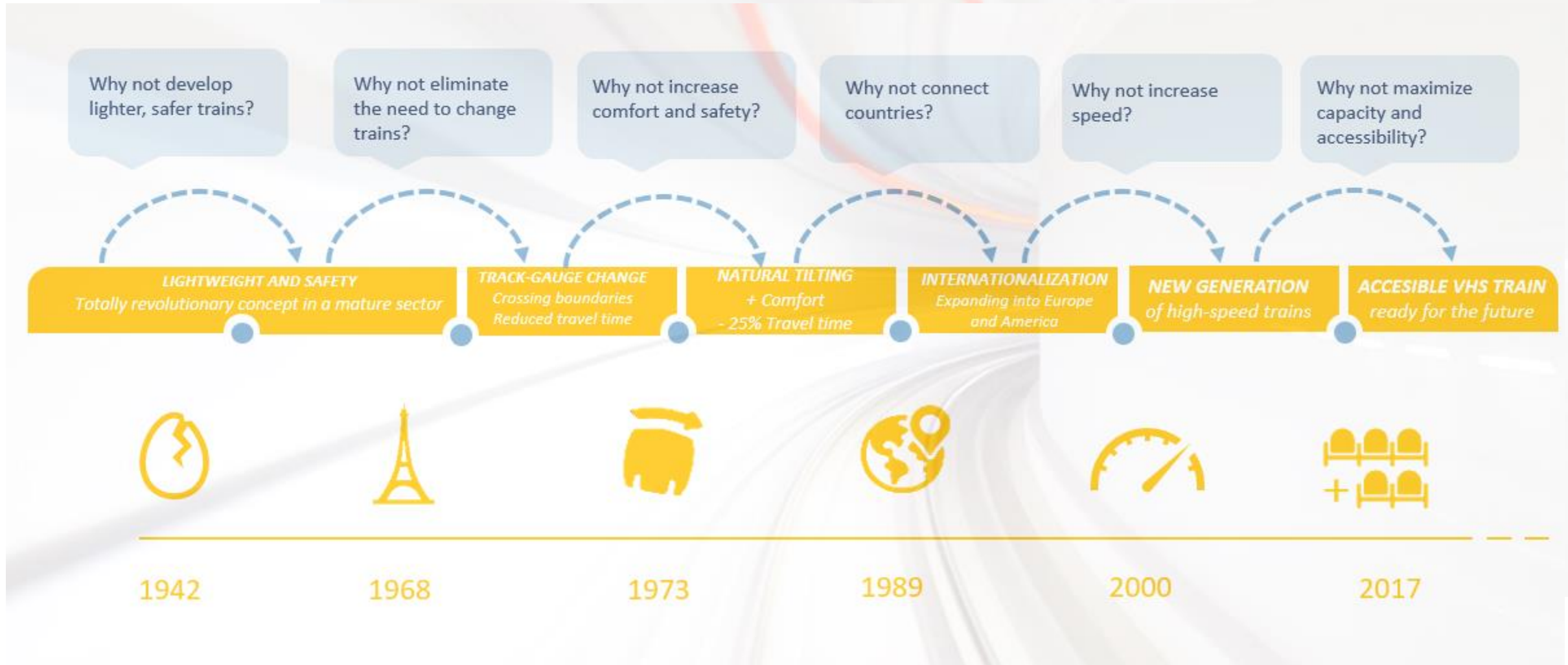


	Germany
	USA
	Spain
	Kazakhstan
	Saudi Arabia
	Uzbekistan
	Denmark
	Egypt

TECHNOLOGY MILESTONES



INTELLIGENT MOBILITY SINCE 1942



TALGO MAINTENANCE



CBM
Condition Based
Maintenance



ML
Machine Learning



RTM
Real Time Monitoring



36 trains



2000 signals per
second in *streaming*



Alarms every minute
Events every 10 minutes



1GB of information per day



Real-time monitoring system
Predictive Maintenance



Data storage space



Process capacity



Train-ground
communications



Intake capacity



New tools to visualize and analyze the
information

PRINCIPAL CHARACTERISTICS

ICE L PROJECT

- ✓ Customer DB Fernverkehr
- ✓ Frame contract for 100 trains signed in February 2019
- ✓ 1st call-off 23 trains / 2nd call-off 56 trains (May 2023)
- ✓ Long-distance locomotive-hauled train
- ✓ Homologation for Germany, Austria, Netherlands
- ✓ Denmark and Basel (CH)
- ✓ Planned operation (examples)
 - Berlin - Amsterdam / Cologne - Oberstdorf



TECHNICAL FEATURES ICE L

LOCOMOTIVE

TRAIN SET

✓ Maximum speed 230 km/h

✓ 17 coaches & 1 locomotive

✓ Multi-system 25 kV / 15 kV / 1,5 kV

✓ Cab car for push-pull operation

✓ First 3 - system locomotive at 230km/h

✓ Length 256 m

✓ Maximum power 6,4 MW

✓ Weight 406 t

✓ Maximum traction effort 300 kN

✓ Passenger capacity 562 seats (85 + 477)

✓ Weight 88 t

✓ Variable length 9 to 21 coaches



Sustainable



Social



Digital

SUSTAINABLE

- ✓ Lightweight construction (aluminum)
- ✓ Low weight and low number of axles (24)
- ✓ Low energy consumption
- ✓ Recyclable (94%) and recoverable (97%)
- ✓ HVAC migration to natural gas (R290)
- ✓ Interior lighting LED
 - ✓ Adaptable scenarios (e.g, time, ext. temp.)



SOCIAL

- ✓ Compliance of “3. Programm der Deutschen Bahn AG”
- ✓ **ICE Low floor access (no steps)**
 - Part of “4. Programm zur Barrierefreiheit DB AG”
- ✓ **PRM coach**
 - 3 wheelchairs and PRM WC
 - Direct access to bistro coach
- ✓ End coach with storage capacity for 8 bicycles
- ✓ OHS validation by “Unfallversicherung Bund und Bahn” and TÜV



DIGITAL

✓ **Cybersecurity**

- Security Level ≥ 2 acc. to ISA / IEC 62443

✓ **Connectivity**

- 5G+
- WiFi
- RF transparent windows

✓ **Passenger information in real time**

✓ **PA from handheld devices**



The image features a dynamic, abstract background with flowing, curved lines in shades of white, grey, and red, suggesting a high-speed train or a tunnel. The Talga logo is prominently displayed in the top left corner in a red, stylized script. A faint, larger version of the logo is visible on the right side of the image.

Talga

*A trully great journey begins and ends on the
railway tracks*

... Thank you for your attention..