Siemens Mobility
Metros and Coaches
World Headquarters for Passenger Coaches and Metro Vehicles

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Mobility Division, Rolling Stock, Head of Metros and Coaches

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Siemens Mobility – Rolling Stock – Public Transit
Product Portfolio

Metros and Coaches

Passenger Coaches and Passenger Train Solutions
Metro Systems, ULF
Automated People Mover (Val)

Commuter- and Regional Trains
Light Rail and Tramway
High Speed- and Intercity Trains
Siemens Mobility – Metros and Coaches
Product Portfolio

<table>
<thead>
<tr>
<th>Product</th>
<th>Average station distance (km)</th>
<th>max. service speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desiro</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>ICE®/Venturio</td>
<td>10</td>
<td>200</td>
</tr>
<tr>
<td>ICE®/Velaro</td>
<td>30</td>
<td>250</td>
</tr>
<tr>
<td>Combino, Avanto, Metro, VAL, ULF</td>
<td>50</td>
<td>350</td>
</tr>
<tr>
<td>Viaggio Comfort</td>
<td>10</td>
<td>160</td>
</tr>
<tr>
<td>Viaggio Classic</td>
<td>10</td>
<td>200</td>
</tr>
<tr>
<td>Viaggio Twin</td>
<td>30</td>
<td>250</td>
</tr>
<tr>
<td>Viaggio Light</td>
<td>50</td>
<td>300</td>
</tr>
<tr>
<td>Viaggio Light</td>
<td>100</td>
<td>350</td>
</tr>
</tbody>
</table>

® ICE is a registered trademark of Deutsche Bahn AG.

Quality from Austria

Vienna is the world headquarters for Passenger coaches and Metros with more than 150 years of experience in the Mobility Division of the Siemens Sector Industry. Approx. 1200 employees design and manufacture passenger coaches, metro vehicles and tramcars for customers around the globe.
### Siemens Coaches

#### Most Economic Solution for Regional and Main Line

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Speed</th>
<th>Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Viaggio Comfort</strong></td>
<td>UIC-based high-performance vehicle for national/international main line traffic</td>
<td>230/250kph</td>
<td>40 ... 88 seats</td>
</tr>
<tr>
<td><strong>Viaggio Classic</strong></td>
<td>UIC/RIC-vehicle for national/international main line traffic</td>
<td>200kph</td>
<td>50 ... 80 seats</td>
</tr>
<tr>
<td><strong>Viaggio Light</strong></td>
<td>Low Floor UIC-based vehicle for regional/interregional traffic</td>
<td>160/200kph</td>
<td>65 ... 100 seats</td>
</tr>
<tr>
<td><strong>Viaggio Twin</strong></td>
<td>Double Deck UIC-based vehicle for regional/interregional traffic</td>
<td>160kph</td>
<td>85 ... 140 seats</td>
</tr>
</tbody>
</table>
Siemens Coaches References worldwide

- **Brasil**: M-Part EMU (50 cars)
- **Iran**: Viaggio Classic (206 cars)
- **Israel**: Viaggio Light (86 cars)
- **Austria**: entire vehicle program (1950 cars)
- **Czech Republic**: Viaggio Classic (83 cars)
- **Greece**: Viaggio Classic (185 cars)
- **Germany**: Sleeping car, hotel train (96 cars)
- **Switzerland**: Desiro DD, Viaggio Classic, Viaggio Twin (380 cars)
- **Croatia**: Components
- **Slovenia**: Components
- **Poland**: Components

Siemens Coaches Viaggio Comfort ÖBB railjet (A)

**Delivery**
- Product platform Viaggio Comfort
- 469 cars (67 trainsets) on order
- Delivery started 2008

**Services**
- Manufacturing complete vehicles
- Final assembly by ÖBB-TS
Siemens Coaches
Viaggio Light ISR-SDPP (Israel)

**Delivery**
- 87 Cars, Option up to 585 Cars
- Delivery started 2008

**Services**
- Manufacturing complete vehicle
- Final assembly in Israel

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Siemens Coaches
Viaggio Twin SBB-NDW (CH)

**Delivery**
- 121 Coaches (113 SBB + 8 SZU)
- Delivery starting 2010

**Services**
- Manufacturing complete vehicle, final assembly by manufacturing partner Bombardier/CH
Siemens Coaches
Viaggio Twin ÖBB-DSW (A)

**Delivery**
- 324 Cars (253 Bmpz-dl + 71 Bmpz-ds)
- in operation since 1998

**Services**
- Delivery of complete vehicles
- Assembly and interior components mainly performed by manufacturing partner ÖBB-TS

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Siemens Metros
Metro market approach

**Turnkey projects**
Skytrain Bangkok BTS, Puerto Rico
Future projects:
Ho Chi Minh City, Mumbai Line 2 ...

**Complete Metro vehicles**
Oslo, Vienna, Melbourne, Boston ...
Future projects:
Amsterdam, Boston ...

**Electrical equipment (traction systems)**
Copenhagen, Madrid, Tokio ...
Future projects:
Lisbon, Shanghai, Guangzhou ...
Our innovative Syntegra® concept fundamentally revolutionizes the characteristics of today’s powered bogies and represents a new and highly integrative approach in bogie design. Syntegra combines the traction, bogie and braking technology to form a unified mechatronic system.

This approach and, above all, the change of technology generate a large number of synergetic benefits.

This new generation of powered bogies unites high efficiency and low weight with reduced lifecycle costs (LCC) and offers considerably better performance than conventional bogie solutions.
Siemens Metros
New technology – AGT Metro RUBIN, Nuremberg

Main Technical Features
- Fully automated driverless system
- First mixed operation with conventional trains worldwide
- High flexibility as service frequency can be increased on demand at any time
- High safety for passengers through dynamic video surveillance of the interior
- 100% motorized

<table>
<thead>
<tr>
<th>Train configuration</th>
<th>2 (MC-MC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car body material</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Track gauge</td>
<td>1 432 mm</td>
</tr>
<tr>
<td>Train length</td>
<td>38 360 mm</td>
</tr>
<tr>
<td>Train width</td>
<td>2 900 mm</td>
</tr>
<tr>
<td>Capacity 6 P per m²</td>
<td>322 (82 seats)</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>80 km/h</td>
</tr>
<tr>
<td>Power supply</td>
<td>750 V DC</td>
</tr>
</tbody>
</table>

Siemens Metros
Oslo, Norway

Siemens sets new environmental standards with the Oslo metro. The new vehicles require around 30% less energy than the previous generation of trains by means of, among other things, the regenerative brake system. And even after they have reached the end of their service life, the Metro trains are still valuable: nearly 95% of their materials can be fully recycled.

<table>
<thead>
<tr>
<th>Train configuration</th>
<th>MC+M+MC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car body material</td>
<td>Aluminium</td>
</tr>
<tr>
<td>Track gauge</td>
<td>1 435 mm</td>
</tr>
<tr>
<td>Train length</td>
<td>54 340 mm</td>
</tr>
<tr>
<td>Train width</td>
<td>3 160 mm</td>
</tr>
<tr>
<td>Capacity 6 P per m²</td>
<td>678</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>80 km/h</td>
</tr>
<tr>
<td>Power supply</td>
<td>750 V DC/third rail</td>
</tr>
</tbody>
</table>
When the concept for the new generation of metro trains for Vienna was being developed, the main focus was on passenger safety and comfort. The four- or six-car trains have an end-to-end accessible interior and are fitted with video surveillance and fire detection systems. Optimization of the distance between the vehicles and the station platform and reduction of the step height enable passengers to board and exit quickly and easily. The redundant traction technology ensures high availability. The order for 25 series-produced vehicles was submitted after successful testing of the first prototype in August 2002. In 2007, further 15 trains were ordered.

<table>
<thead>
<tr>
<th>Train configuration</th>
<th>TR+MC+MC+MC+MC+TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car body material</td>
<td>Aluminium</td>
</tr>
<tr>
<td>Track gauge</td>
<td>1435 mm</td>
</tr>
<tr>
<td>Train length</td>
<td>111 220 mm</td>
</tr>
<tr>
<td>Train width</td>
<td>2850 mm</td>
</tr>
<tr>
<td>Capacity 6 P per m²</td>
<td>1187 (260 seats)</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>80 km/h</td>
</tr>
<tr>
<td>Power supply</td>
<td>750 V DC third rail</td>
</tr>
</tbody>
</table>

Vienna – „Best of class“ in the mobility index

- **Cluster I**
  “Struggling to cope”: Lagos, Sao Paulo, Jakarta

- **Cluster II**
  “At Risk”: New York, Prague

- **Cluster III**
  “Best of class” Amsterdam, London, Vienna, Zurich
Thank you

Complete mobility