More comfort, more reliability, more space: presenting the ECx, Deutsche Bahn’s new long-distance train

Setting a new standard for accessibility • The first trains are coming in 2023 • Substantially shorter travel times between Berlin and Amsterdam

(Berlin, March 13, 2019) In February, Deutsche Bahn (DB) awarded a contract to Spanish manufacturer Talgo for the supply of 23 new long-distance trains. Given the working title of “ECx,” the new trains will be used to expand DB’s vehicle fleet starting in 2023. The locomotive-hauled passenger coaches are highly versatile, making them an ideal addition to DB’s fleet. Deutsche Bahn consistently expands its fleet of long-distance vehicles to create additional rail capacity. That allows the company to offer more and more passengers better products and a higher level of comfort. DB is planning to run the ECx trains on a cross-border route from Berlin to Amsterdam, cutting the travel time on this route by some 30 minutes to 5 hours and 50 minutes. The new vehicles will also be used on tourist connections to Westerland (Sylt) and Oberstdorf.

ECx at Berlin's central station: In the future, it will be used on the route between Berlin and Amsterdam

The ECx lets Deutsche Bahn offer its guests true ICE comfort: Apart from Wi-Fi, that also includes a great deal of room for baggage, an on-board bistro and real-time data to keep passengers informed. This train sets a new standard for accessibility. At every door, guests can enter the train at the height of the platform without climbing any stairs, making it easier for all passengers to travel and enabling passengers in wheelchairs to come on board independently.

The first EUR 550 million order of 23 trains is part of a framework agreement DB signed with the Spanish manufacturer Talgo for up to 100 multi-system
locomotives and passenger wagons. In a European contract award procedure, Talgo submitted the most attractive bid and was awarded the contract.

**Technology of the ECx**

Each single convoy is comprised of one multi-system locomotive and 17 passenger cars. All in all, the trains have 570 seats—85 in first class and 485 in second. The trains can run at a top speed of 230 kph.

All of the trains are highly versatile. The passenger cars can be coupled with both the multi-system locomotive and a diesel locomotive.

In selecting the ECx, Deutsche Bahn deliberately chose a tried and tested vehicle platform to achieve stronger reliability by using tested components and to shorten lead times for the trains.

Height: Sets of wagons are 3.6-3.8 m, locomotives are 4.2 m

Length: Sets of 17 wagons are 235 m, locomotives are 19.5 m, the total amounts to 255 m

Unladen weight: 425 tons

Number of axles: 20 wheelsets on each set of wagons (17 wagons) plus four wheelsets for each locomotive

Brakes: Electric regenerative brakes will be used predominantly (When locomotives brake, the traction energy thus generated is recovered and fed back into the overhead contact line); otherwise, compressed air brakes are used (disc brakes) and magnetic track brakes are applied when necessary

**Train features**

- At all doors, the trains can be boarded from standard platforms 760 mm in height with no need to climb any stairs
- Various lighting modes throughout the day
- There are eight bicycle spaces on each train and a storage room for sports equipment (e.g. ski and snowboard racks on the route to Oberstdorf)
- Information monitors in entryways and seating areas displaying real-time data
- Wi-Fi and onboard entertainment (ICE portal)
- Onboard bistro with tables for standing and seating areas
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- Separate area for small children and families with a play area for children and storage spaces for strollers
- Spaces for three passengers in wheelchairs with height adjustable tables
- Baggage racks for oversize luggage in every wagon

When it begins passenger service, the ECx will have a new type of seat. Various types of seats are being tested extensively by passengers in advance and will be selected only based on customer ratings.

First class is extremely spacious, offering 85 seats of ICE comfort.

Use of the new trains

When the timetable changes in December 2023, DB will use the new long-distance trains for service departing every two hours between Berlin and Amsterdam. Transit time along this route will be shortened by 30 minutes to reach 5 hours and 50 minutes. That is possible to do because using the multi-system locomotive eliminates the need to switch locomotives at the border.

What's more, the ECx will travel to tourist destinations on the North Sea and in the Alps: starting in summer 2024, there are plans to use it on the Westerland–Cologne, Westerland–Frankfurt–Karlsruhe, Westerland–Berlin and Oberstdorf–Cologne routes.

First of all, the new trains will be used on a provisional basis to put the factory-fresh vehicles through their paces. Findings gained from operations and feedback from passengers and employees will be factored in as the trains are further refined.

The ECx will replace old Intercity-1 trains.
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Setting new standards for accessibility

The train is stairless, meeting that its entrance is at the same height as the platform. That allows for people in wheelchairs to enter and exit the train independently. But it also eases the boarding process for travelers with baggage or families with strollers. This is the beginning of a new standard, too: going forward, all of the new tenders for long-distance vehicles will require that these particularly customer-friendly entrances be used.

The ability to enter at the same height as the platform makes it easier to board and exit the train, especially with wheelchairs, strollers or suitcases. That way passengers in wheelchairs can get on board the train independently.

Talgo's low flow concept also allows nearly every seat on the train to be reached without having to negotiate any stairs. There are only a few seats at the end of the train that are accessed by stairs.

The ECx has three wheelchair spaces with height-adjustable tables. It also has a handicapped-accessible restroom.

In addition, the train has a tactile guide system. All notices are displayed in braille.

A particularly environmentally friendly way to travel

"Single wheel running gear," which offers substantial weight savings compared to running gear with conventional trucks, are a characteristic feature of Talgo's trains. The result of this feature is that substantially less energy is required to drive the convoy. The vehicle bodies, which were manufactured using a light construction design, and the aerodynamically optimized external form of the
vehicles at the connecting gangways result in very strong energy efficiency. In addition, the air-conditioners use natural refrigerants.

The Spanish manufacturer Talgo

Talgo was founded in Madrid in 1942. Since then, the company has both built and maintained trains. Today, Talgo has more than 2,000 employees. Since 1994, Talgo has also had roughly 100 employees in Germany. Its plant in Berlin provides extensive maintenance services. Deutsche Bahn is already one of Talgo customers. Talgo is represented in a total of 40 countries. For instance, trains from Talgo provide service between Seattle and Oregon, and they run between Moscow and Berlin for the Russian Railway (RZD). Talgo's specialties include high-speed trains that can exceed 300 kph. In 2018, Talgo delivered 35 such trains to Saudi Arabia.