DB

**InterCity Express
ICE T - Class 411
High Speed Train**

Release Version 1.0

1 Background

1.1 ICE T (Class 411)

The class 411 ICE T train was delivered following the development of the ICE 2 in order to offer upgraded long distance services using existing lines. Rather than develop a locomotive led train set, the ICE T was developed as an electric tilting train in order to achieve the speed and comfort desired whilst using existing lines. The ICE T was developed by DB alongside the ICE 3 and the ICE TD, which resulted in a very similar design shared across the three.

1.2 Specifications

Class Number	Class 411
Formation	7-car (2 Power + 5 Carriages)
Wheel Arrangement	Bo'Bo'
Weight	Trainset: 418t
Height	3.84m
Length	Driver Cars: 27.9m
	1st Class / 2nd Class / Service: 25.9m
	Trainset: 185 m (7 car)
Power at Rails	4,000 kW
Tractive Effort	200 kN
Design Speed	140mph (230km/h)

Release Version 1.0

2 InterCity Express Train Set

The following ICE T Class 411 vehicles are available in this Add On.

2.1 ICE T CabCar 411.0

2.2 ICE T CabCar 411.1

Release Version 1.0

2.3 ICE T CabCar 411.2

2.4 ICE T CabCar 411.8

Release Version 1.0

2.5 ICE T CabCar 411.7

2.6 ICE T CabCar 411.6

Release Version 1.0

2.7 ICE T CabCar 411.5

Creating an ICE T train set

2.8 Scenario Editor

To get your ICE T ready for selection in a scenario you will need to enable it in the object set filters, which will add it to the rolling stock list.

Follow these steps to enable the ICE T:
1. Enter the Scenario Editor. (Note: If a route is locked it will need to be unlocked first before you can enter the Scenario Editor. Unlock by clicking the padlock icon in the bottom right of the screen).
2. Click the Object Set Filter button (the small blue cube on the middle left panel).
3. In the new window which opens on the right hand side, select the following: RSC / ICETPack01
4. The ICE T will now appear in the list of rolling stock for that route.
5. You may need to repeat this process on other routes or scenarios where you wish the ICE T to be displayed.

2.9 Train Formation

Each coach is unique in an ICE T consist. The table below shows the correct formation of an ICE T

Description	Railworks Name
Power Car, Cab	ICE T CabCar 411.0
1st / 2nd Class	ICE T CabCar 411.1
Restaurant Car	ICE T CabCar 411.2
2nd Class	ICE T CabCar 411.8
2nd Class	ICE T CabCar 411.7
2nd Class	ICE T CabCar 411.6
Power Car, Cab	ICE T CabCar 411.5

Release Version 1.0

3 Cab Controls
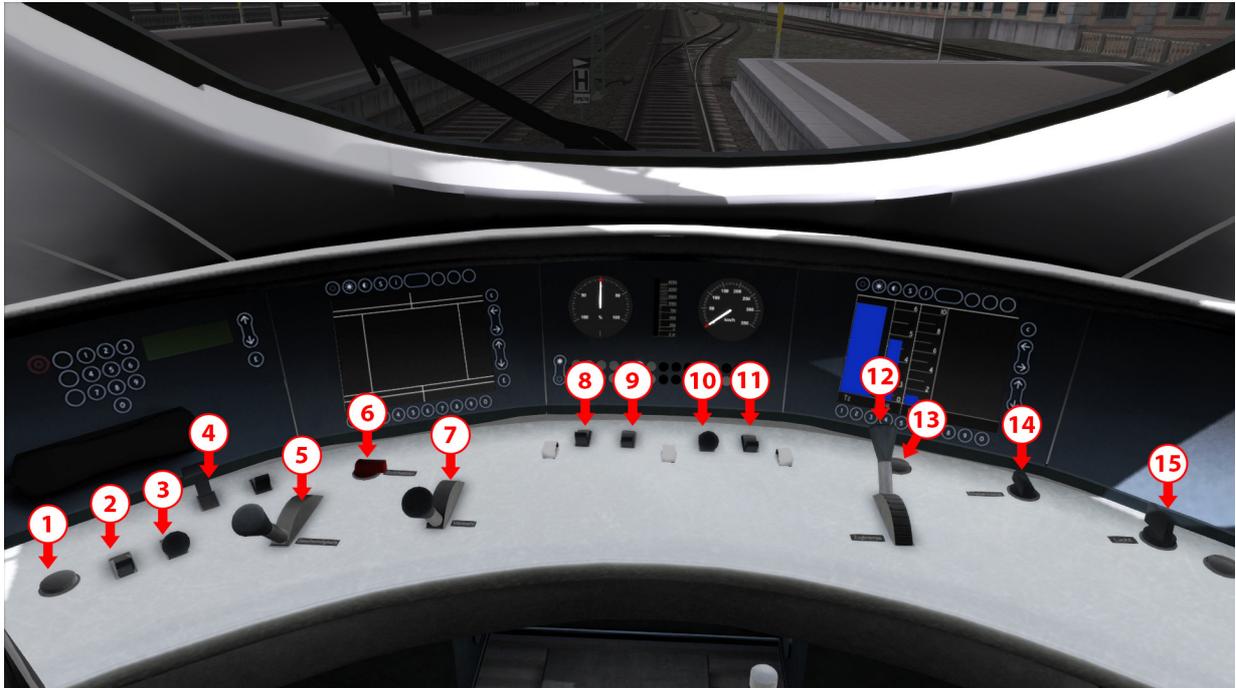
1. PZB Override
2. PZB Free
3. PZB Acknowledge
4. Pantograph
5. PZB Cruise Set
6. Reverser
7. Power Handle
8. Horn
9. Desk Light
10. Sander
11. Cab Light
12. Cab Light
13. Sifa Reset
14. Wipers
15. Lights

Release Version 1.0

4 Cab Functions

4.1 AFB Speed Control

The AFB function is similar to the cruise-control function in a road vehicle where a required speed is set by the driver and the vehicle will achieve and maintain that speed by automatically accelerating and braking as needed.

To use the AFB function, push the lever to the left of the throttle forward to set the required speed, denoted by the bug around the outside of the speedometer.

Acceleration is controlled by the throttle lever, so the lower this is set, the longer it will take to attain the set cruise speed. The driver retains complete control of braking and acceleration while the function is active.

To deactivate the function, pull the AFB lever fully back.

Function	Keyboard
Increase	Y
Decrease	C

4.2 SIFA Driver Vigilance

The SIFA vigilance alerter is disabled at startup, but can be activated or deactivated by pressing 'Shift+Enter(Numpad)'. After activation you should press the 'Enter' key to initially acknowledge activation. While the train is moving, the driver is required to confirm an alarm every 30 seconds by pressing the 'Enter' key.

Initially the SIFA light on the cab dashboard will be lit. After 4 seconds an audible alert will sound. After a further 2.5 seconds the emergency brake will be applied.

This can be avoided by acknowledging the alert by pressing the 'Enter' key.

4.3 LZB

LZB is a cab signaling and train protection system. LZB brake intervention is off by default. It can be enabled with Ctrl-numpad+. B indicator will show when brake intervention is enabled. LZB displays will activate when needed, regardless of brake intervention state, LZB active is shown by Ü.

LZB is activated by an LZB start sign. It is ended by LZB end magnets. Displays can also be enabled/disabled by the user pressing Ctrl/shift-numpad+ (usefull for existing routes with no magnets).

LZB will override any enabled PZB (enabled by Crl-Enter(Numberpad)). PZB will run in the background and will takeover when LZB deactivates. This may be in a restricted state resulting from 1000hz magnets. Active 2000hz magnets will also cause a brake application with LZB.

When active LZB shows the distance to the next speed change, on a 4000m range graphic bar, or digits upto 9900m. The next speed target is shown in digits at the base of the speedo, if the next speed target is less than the current speed limit, in which case the current speed limit is shown. The current speed limit is always displayed with a bug on the speedo.

Exceeding the limit will cause the G light to be shown. When LZB brake intervention is enabled if the limit is exceeded for 5 seconds the brakes will be applied.

Release Version 1.0

When approaching reduced speed targets (including 000 for red signals) the limit bug will command a decelleration rate by gradually moving the bug counter clockwise. While commanding decelleration the G light will be shown.

If the AFB is used with active LZB then the train speed will be managed to the lower value of the AFB target or LZB target, and thus provides a degree of automatic train control. It will not stop for stations.

At the end of an LZB section the ENDE light will flash. If LZB brake intervention is enabled this must be acknowledged within 10 seconds or the brakes will be applied.

4.4 PZB90 Cab Signaling

The PZB90 function is similar to the UK AWS function. By default it is disabled.

The following keyboard controls are used for operation:

Function	Keyboard
Activate/Deactivate	Ctrl+Enter(Numpad)
Acknowledge	Page Down
Release	End
Override	Del

There are six cab dashboard lights associated with the function - 85, 70, 1000, 500, befehl40 and S.

Function	Control Panel Light(s)
85km/h maximum / Normal operation	85
45km/h maximum	Alternating 70 85
25km/h maximum	500 + alternating 70 85
Distant at warning passed. 85km/h maximum	85 + 1000
Stop signal approaching. 45km/h maximum	85 + 500
Emergency brake applied	S + flashing 1000

4.4.1 Pulling away

When first pulling away the PZB will enter the starting program mode until speed exceeds 5km/h. This is shown by the 70 and 85 lights flashing alternately. Speeds below 45km/h will be allowed for the next 700m. If there is no adverse stop signal ahead the speed monitoring can be cancelled with the 'End' key. However, if the monitoring is cancelled and the next signal is red when passing the 500hz magnet (similar to an AWS ramp), the emergency brakes will be applied, whatever the train speed.

4.4.2 Passing a Distant Signal at Warning

When passing a distant signal set at warning, the signal should be acknowledged with the Acknowledge key ('Page Down') within 2.5 seconds of passing or the emergency brakes will be applied. After acknowledging the signal, the 1000 light will show, and 85 will start flashing. You now have 23 seconds to reduce speed to 85km/h or less, or the emergency brakes will be applied.

     Release Version 1.0

Once train speed drops below 85km/h the speed will be monitored to this maximum. This cannot be cancelled while 1000 is lit. 700m after passing the distant signal, the 1000 light will go out. The speed monitoring can now be released

If the train speed drops below 10km/h while 1000hz 85km/h monitoring is active, hen the maximum speed will be reduced to 45km/h. This is indicated by 70 and 85 flashing alternately as per the start program mode.

If speed monitoring is not cancelled with the Release key ('End') it will expire 1250m after the distant signal (providing another active distant has not been passed).

4.4.3 Approaching a Stop Signal at Danger

If the stop signal ahead is red then passing a 500hz magnet will cause the 85 and 500 lights to be displayed steady. If the train speed exceeds 65km/h at this point the emergency brakes will be immediately applied. If not, you have 153m to reduce speed to below 45km/h, or again the emergency brakes will be applied.

If train speed drops below 10km/h while 500hz 45km/h monitoring is active then the maximum monitored speed will be reduced to 25km/h. This is indicated by 70 and 85 flashing alternately together with the 500hz lit.

Speed monitoring cannot be released while the 500hz light is on. It is extinguished, and the 500hz monitoring expired, 250m after passing the 500hz magnet, which should be approximately the position of the associated stop signal.

If an adverse stop signal is passed (2000hz magnet) the emergency brakes will immediately be applied.

4.4.4 Passing a Stop Signal at Danger

If it is necessary to pass a red signal, press and hold the Override key ('Del') while passing the signal. Ensure train speed is below 40km/h. As the signal is passed, the befehl40 light will show. The Override key can now be released. If the 1000 and 500 lights are out then any speed monitoring can be cancelled using the Release key.

Release Version 1.0

5 Scenarios

5.1 Training: Driving the ICE T - Expert Controls Tutorial

Drive an ICE-T to Hamburg. In this tutorial, using expert controls, you will learn how to get your train moving and how to stop.

Difficulty: Easy
Duration: 5 minutes
Mode: Tutorial

5.2 Training: Driving the ICE T – Simple Controls Tutorial

Drive an ICE-T to Hamburg. In this tutorial, using simple controls, you will learn how to get your train moving and how to stop.

Difficulty: Easy
Duration: 5 Minutes
Mode: Tutorial

5.3 DB ICE-T Replacement Train

Drive an ICE-T from Hannover Hbf to Uelzen with no intermediate stops. This is a replacement train for a broken down IC 26 train which will wait at Uelzen station. The weather is good and there should be no problems during your run.

Difficulty: Hard
Duration: 40 minutes
Mode: Career

5.4 DB ICE-T Snowy Winter's Day

A delayed train fore-running and terrible driving conditions, complicate what would have been a routine ICE T passenger service from Hamburg to Celle.

Difficulty: Hard
Duration: 70 minutes
Mode: Career

Release Version 1.0