ETCS – a new digital signalling system

> The European Train Control System (ETCS) is a digital signalling system progressively being installed to key parts of the South East Queensland (SEQ) rail network. ETCS has been installed and is currently being used for testing and staff training on the Shorncliffe line.

Why are track closures needed on the Shorncliffe line?

The Shorncliffe line was selected as the pilot line for testing and training of ETCS due to lower customer numbers compared to other parts of the rail network, and because it sits outside the mainline and freight corridor.

Testing and training of ETCS is an important step in proving the system before it is gradually rolled out to other parts of the SEQ rail network, including the Cross River Rail tunnels, the section south to Moorooka, and between Beenleigh to Varsity Lakes stations on the Gold Coast line.

In a complex rail system like ETCS, rigorous testing is what turns design into dependable reality.

Before a single journey begins, thousands of hours of testing are done across multiple test stages so future journeys run safely, smoothly, and on time.
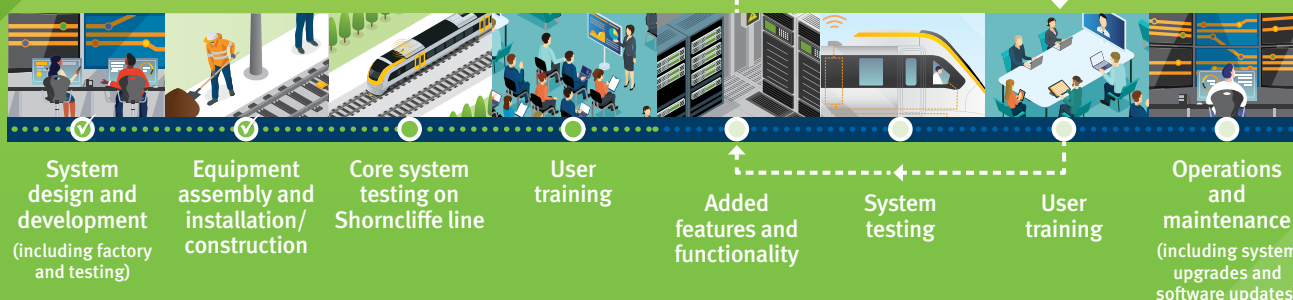
ETCS testing includes:

1 Testing each part of the system separately. The design is confirmed and the installation is checked.

2 Bringing together each part to ensure they integrate correctly and perform as expected.

3 Testing the whole system using detailed test cases. From here, it's test after test so the system is put through a range of scenarios to prove its performance.

4 Validating the complete system against strict safety and operational requirements so it's safe, reliable, and ready for operation.

5 Training Queensland Rail staff in its use and putting the system's ongoing reliability through its paces.

This process is repeated as new features and functionality are added.

WHERE ARE WE AT IN THE JOURNEY?

We are here

System design and development
(including factory and testing)

Equipment assembly and installation/ construction

Core system testing on Shorncliffe line

User training

Added features and functionality

System testing

User training

Operations and maintenance
(including system upgrades and software updates)

What happens during a track closure?

Test trains run along the Shorncliffe line between Bindha and Shorncliffe stations to test the ongoing reliability of the system, collect performance data of ETCS-fitted trains, and for Queensland Rail staff training.

Why can't trains run during testing and training?

For some testing and training to be completed safely and efficiently, passenger trains cannot run on the Shorncliffe line between Northgate and Shorncliffe stations.

During this early training phase, passenger services do not operate while staff are trained to manage a range of operational scenarios, including unexpected issues.
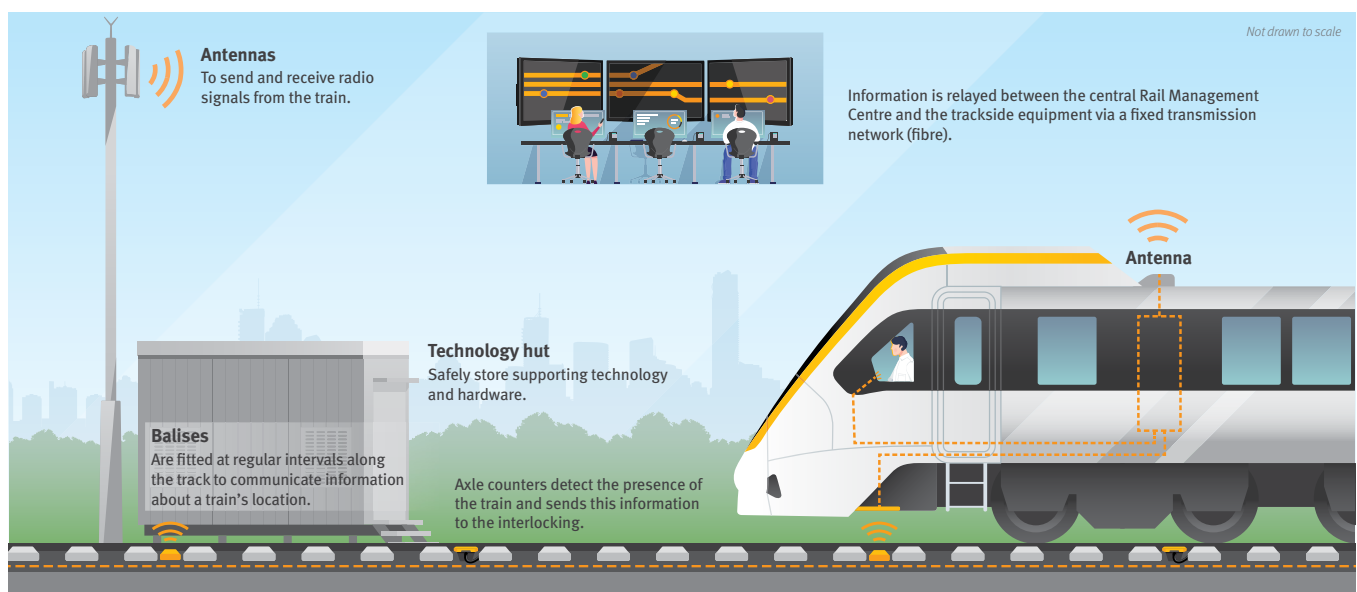
What it means for customers who travel on the Shorncliffe line

In conjunction with weeknight closures, extended weekday closures on the Shorncliffe line will be needed throughout 2025 and into 2026.

We will aim to carry out testing at night where possible to reduce disruption, but extended weekday track closures are needed to complete certain testing activities.

We understand extended track closures are an inconvenience and appreciate your patience as we undertake these critical works. We will continue to keep the community updated ahead of planned testing and training activities.

What is ETCS?

Not drawn to scale

Antennas
To send and receive radio signals from the train.

Information is relayed between the central Rail Management Centre and the trackside equipment via a fixed transmission network (fibre).

Antenna

Technology hut
Safely store supporting technology and hardware.

Balises
Are fitted at regular intervals along the track to communicate information about a train's location.

Axle counters detect the presence of the train and sends this information to the interlocking.

ETCS is an advanced digital signalling system. It's made up of a data radio system and fixed fibre transmission network that continuously relays information between the ETCS equipment trackside, on board trains and in the Rail Management Centre. With this flow of data, we know the position, speed, and direction of each train.

This means trains can safely run closer together – helping to increase their frequency for customers.

ETCS plays an important part in the future of our rail network, delivering increased safety, capacity, efficiency and reliability for a sustainable transport network.

Subscribe to receive updates

Scan this QR code to learn more about ETCS. You can also keep up to date with ETCS works on the Shorncliffe line by subscribing to updates at the bottom of the page.