



High Capacity Signalling Initial Test Site



Next-generation High Capacity Signalling technology will be installed in the Metro Tunnel to deliver more trains, during peak periods. It will first be put through months of rigorous testing on a section of track on the Mernda line, between Epping and South Morang stations, starting in late 2020.

The Metro Tunnel will free up space in the City Loop to run more trains to and from the suburbs by taking our busiest train lines through a new tunnel under the city. That means more trains across Melbourne, with a less crowded and more reliable train network.

What is the Initial Test Site?

Before being installed in the Metro Tunnel, High Capacity Signalling will be tested on a section of the Mernda line between Epping and South Morang stations. This test site will help us fine-tune the operation of the system for use in Melbourne.

Before this testing can start, a lot of work needs to be done – including installation of new trackside equipment along the rail line.

We will also be installing specialised signalling technology on two trains that we will be using for testing starting late 2020.

Why the Mernda line?

A range of locations were considered for the testing site. The Mernda line was chosen because it does not share tracks with regional or freight services and has fewer timetabled night services than other rail lines.

At the end of testing, all of the infrastructure installed by the Metro Tunnel Project for High Capacity Signalling testing will be removed from the Mernda line.

What is High Capacity Signalling?

High Capacity Signalling is a new hi-tech “moving block” signalling system that enables trains to automatically adjust their speed to maintain a safe distance from each other. This replaces the current “fixed block” system, which uses coloured light signals to indicate when it is safe for a train to proceed.

To visualise how High Capacity Signalling works, imagine driving on a freeway. Adaptive cruise control adjusts your vehicle speed according to the distance from the car ahead to help you travel more safely. Under the control of train drivers, High Capacity Signalling works in a similar way by communicating wirelessly between trains and a signal control centre.

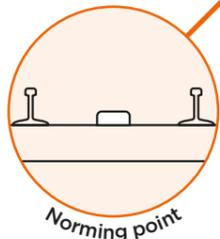
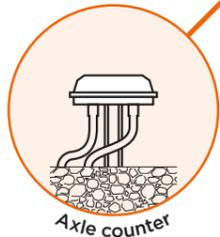
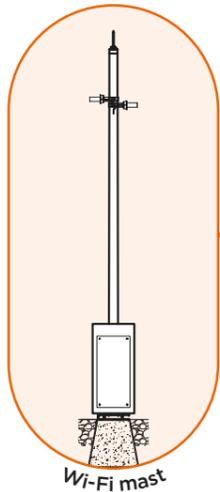
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Changes we are making

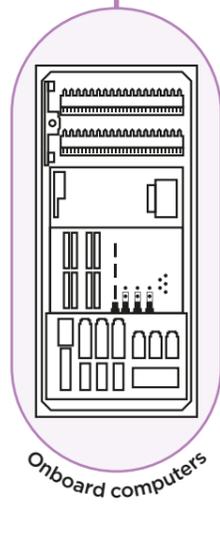
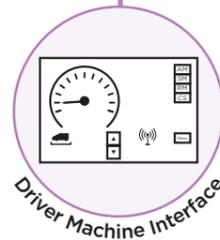
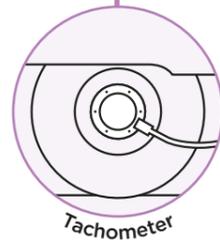
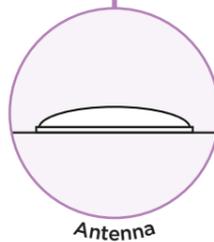
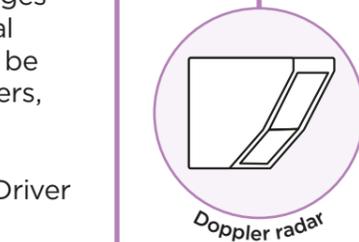
On track

Between Epping and South Morang stations you will notice some new equipment alongside and on the track. These include Wi-Fi masts, axle counters and norming points.



On board

Inside the trains, the changes are much more substantial but less visible. Trains will be fitted with new tachometers, norming point readers, doppler radar antennas, onboard computers and Driver Machine Interfaces.



Track facts

Between Epping and South Morang stations we will be installing:

60,000m
of cable

13 Wi-Fi masts

Wi-Fi masts look like a lamp pole and support the secure Wi-Fi network established to run High Capacity Signalling in Melbourne. Information such as train locations and speed is sent to signal control centres via Wi-Fi in real time, which means more trains can safely run closer together.

29 axle counters

Axle counters count the wheels in and out of a section to determine the direction and location of the train.

56 norming points

A norming point (or balise) is an electronic beacon placed between the rails of a railway. When a train travels over the norming point it sends the exact location to the train. The train then sends its location position to the Central Processing Unit located in the signal control centre.

Tachometers and Doppler radars: Measure train speeds.

Antennas: Connect the trains to the High Capacity Signalling Wi-Fi network.

Driver Machine Interface: The screen that train drivers will use to monitor High Capacity Signalling.

Onboard computers: A cabinet on board the train that houses the software and circuitry needed to operate the train with High Capacity Signalling.

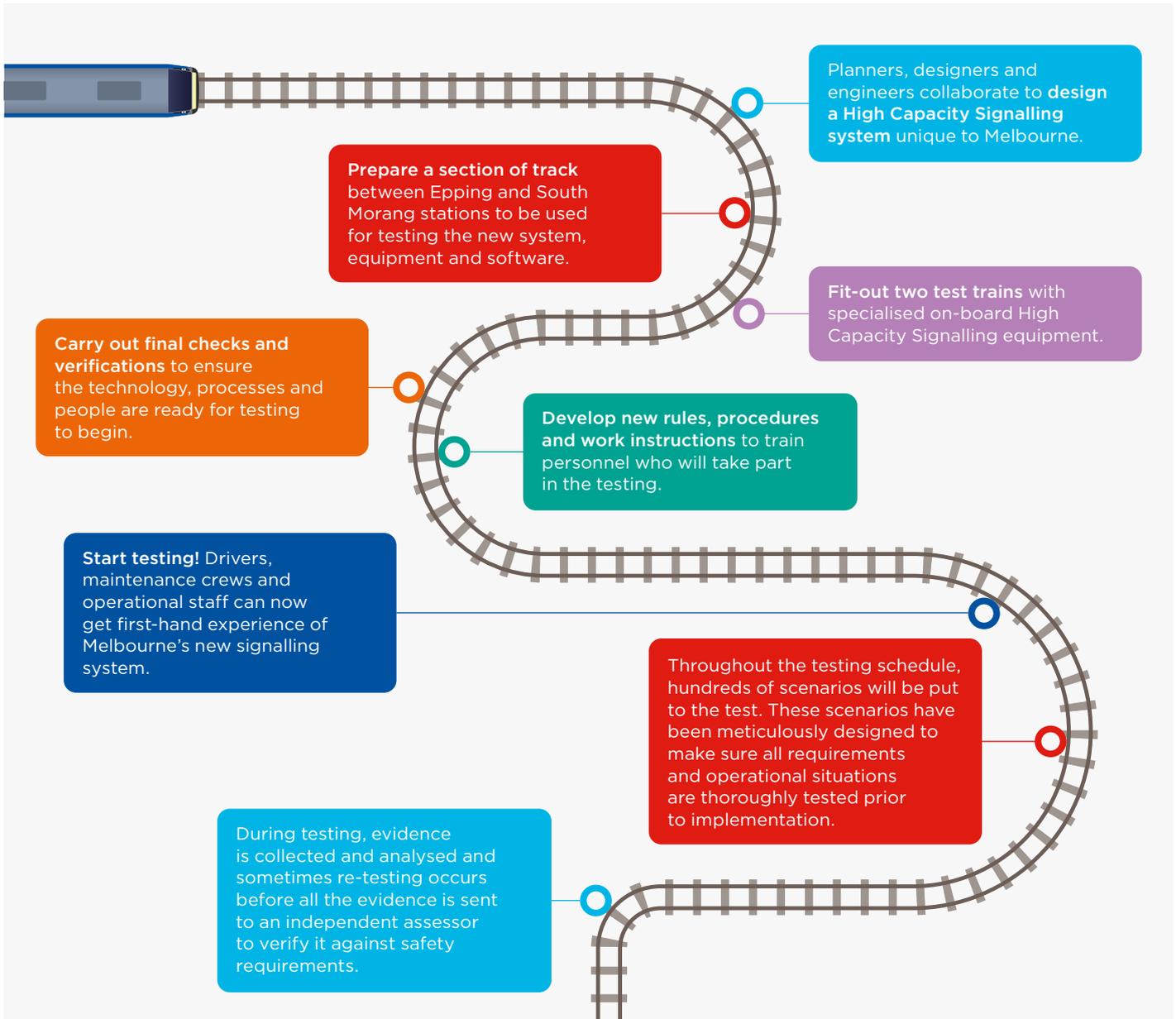
Working together

The equipment on the train communicates with that on the track; relaying information back to the control centre in real time about the location and speed of the train.

Testing on track

In late 2020 we will start testing trains on track with High Capacity Signalling. Before that can happen, a lot of work needs to be done behind the scenes.

Here is a snapshot of what the Metro Tunnel needs to do to start testing High Capacity Signalling.



More information

To find out more about the Metro Tunnel Project:

 metrotunnel.vic.gov.au

 1800 105 105 (24 hours a day, 7 days a week)

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It should be noted that this information is current at the time of printing, however due to unforeseen circumstances, changes may occur. Please visit railprojects.vic.gov.au for the latest updates.