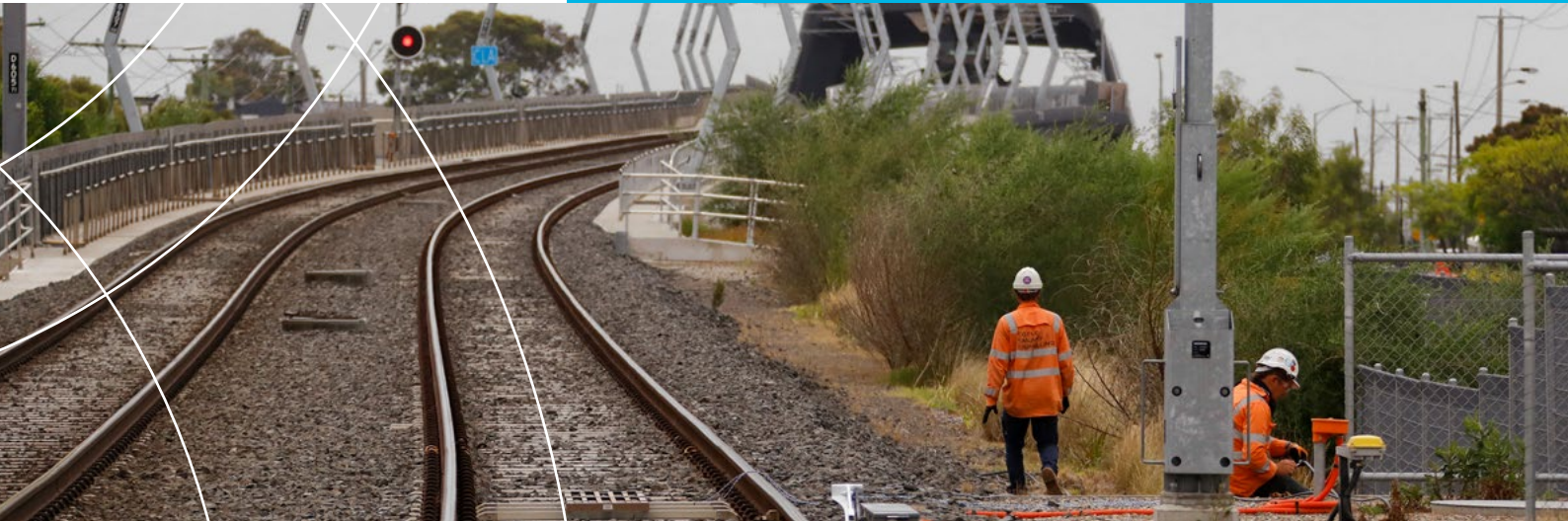




# High Capacity Signalling on the Cranbourne and Pakenham lines



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. Next-generation High Capacity Signalling technology will be installed as part of the project to deliver more trains, more often during peak times.

We are already undertaking works to install the new technology.

The Metro Tunnel, along with other network improvements, will create room for 121,000 passengers every week on the Cranbourne and Pakenham lines during peak periods, that's 45 per cent more peak capacity.

## 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 the train in front.

This replaces the current conventional 'fixed block' system, which uses coloured 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 the vehicle speed according to the distance from the car ahead to help the driver travel more safely.

Under the control of train drivers, High Capacity Signalling works in a similar way by communicating wirelessly between trains and a control centre.

## Cranbourne and Pakenham lines

Passengers on the Cranbourne and Pakenham lines will be some of the first in Melbourne to experience the benefits of High Capacity Signalling.

The technology will be used to deliver more trains, more often and will be installed exclusively on Melbourne's new bigger, more modern trains.

Works are now underway to install critical trackside equipment and signalling technology to enable both lines to migrate on to the new signalling system.

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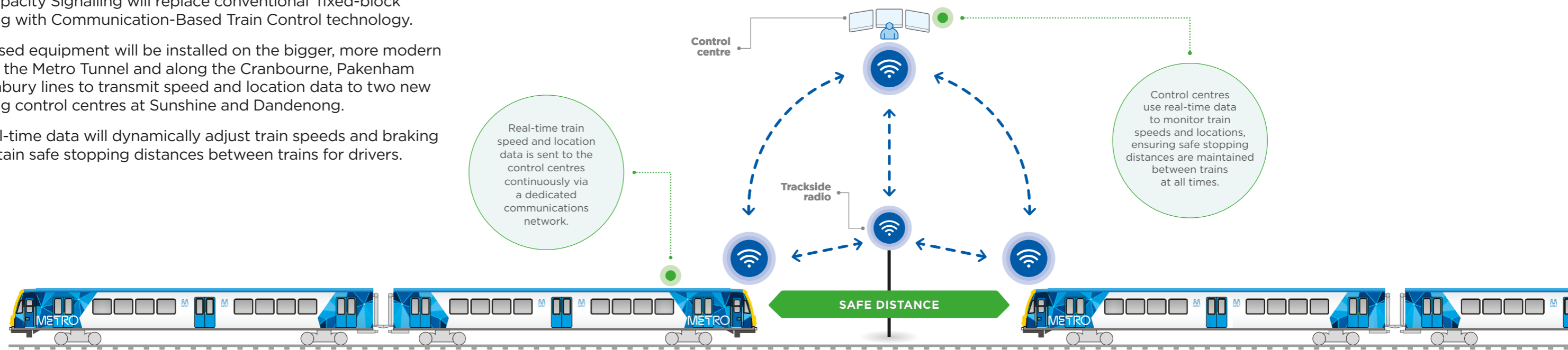
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# How High Capacity Signalling works

High Capacity Signalling will replace conventional 'fixed-block' signalling with Communication-Based Train Control technology.

Specialised equipment will be installed on the bigger, more modern trains in the Metro Tunnel and along the Cranbourne, Pakenham and Sunbury lines to transmit speed and location data to two new signalling control centres at Sunshine and Dandenong.

This real-time data will dynamically adjust train speeds and braking to maintain safe stopping distances between trains for drivers.



## How will High Capacity Signalling benefit passengers?

High Capacity Signalling allows trains to run closer together and delivers more trains, more often.

It means that passengers on the Cranbourne, Pakenham and Sunbury lines will have more travel options and service reliability.

This technology will revolutionise Melbourne's train network as we move towards a reliable 'turn-up-and-go' system similar to other cities such as London, Singapore and Hong Kong.

## Why do we need it?

The advanced signalling technology allows more trains to safely run on the network.

It monitors train movements in real-time, allowing network operators to reduce the impacts of incidents and unexpected delays.

## Upgrading existing signalling

In addition to introducing High Capacity Signalling to the Cranbourne, Pakenham and Sunbury lines, existing signals used along these lines will be updated. Trains that use High Capacity Signalling and those that use conventional signalling – such as freight and regional passenger services – can safely and efficiently operate on the one system.

This means regional passengers and freight services will also benefit from the Metro Tunnel.

## Works now underway

Works to deliver bigger, better trains to the network are already underway.

The installation of world-class signalling and technology began in early 2021 and will continue throughout the year.

Testing will then fine tune the High Capacity Signalling for usage, before it will be rolled out along the Cranbourne, Pakenham and Sunbury lines.

High Capacity Signalling will be installed in stages on the Cranbourne, Pakenham and Sunbury lines



**Legend**

- High Capacity Signalling
- The Metro Tunnel
- Cranbourne, Pakenham and Sunbury lines



### Changes we are making

From late 2020 we began installing new equipment alongside the track and on the track itself.

This includes cabling, relocatable equipment buildings, locations cases, wireless communication masts, axle counters and norming points.

### After the technology is installed

Before Melbourne's new trains can start to use High Capacity Signalling, we need to carry out thorough testing of the technology and how it works on the new trains.

From later this year, and early in 2022, the new trains will be used at night on the line to test the technology.

This will involve running trains without passengers through different scenarios to make sure they are ready for when the Metro Tunnel opens.

You will also see Melbourne's new trains on the Cranbourne and Pakenham lines using the conventional signalling that is used now across Melbourne's metro train network.

High Capacity Signalling will not be used on passenger trains until the Metro Tunnel opens in 2025.

## Who is delivering HCS?


High Capacity Signalling is being delivered by the Rail Systems Alliance, comprising CPB Contractors, Bombardier, Metro Trains Melbourne and Rail Projects Victoria.

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### More information

To find out more about the Metro Tunnel Project and register for future email updates:

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