GOVERNMENT OF WESTERN AUSTRALIA

METRONET

High Capacity Signalling

In the future, the Perth rail network's ageing signalling system will not meet the demands expected of a modern city's train service. Keeping a growing city moving will require more trains to run more often, with a high standard of reliability, safety and efficiency.

Part of the answer to this lies with a part of the system that is hidden from view but is essential to how the trains operate.

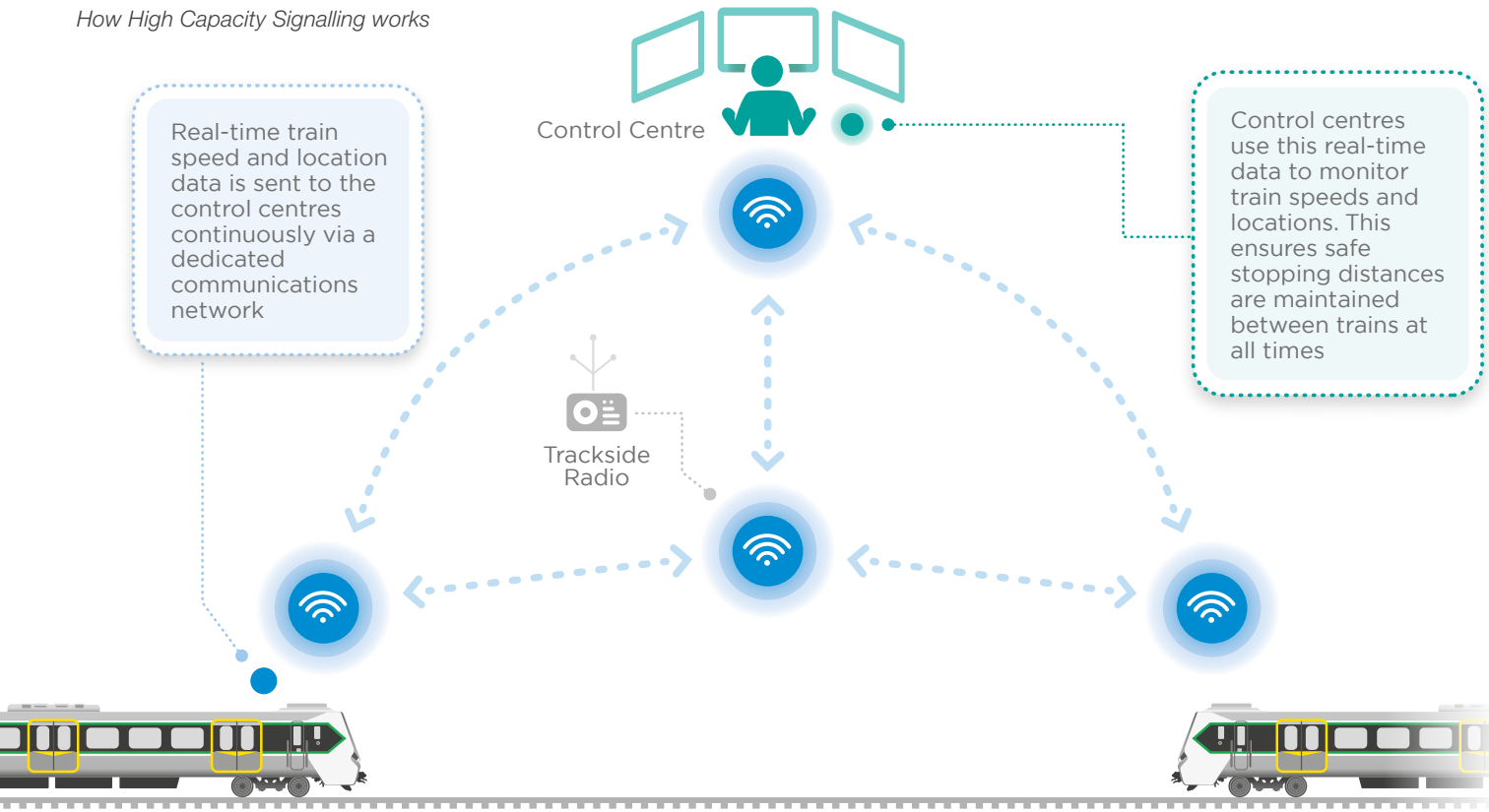
The High Capacity Signalling Project will make better use of the existing rail network by upgrading the existing signalling and control systems, which are nearing the end of their asset lives, to an integrated, Communications-Based Train Control system.

The new Communications-Based Train Control system will give the rail network capacity to run more trains on the existing tracks and see more reliable, safe and punctual train operations.

High Capacity Signalling Benefits

- Allows more trains, more often
- Meets future demand
- Replaces ageing assets
- Improves reliability and safety

How High Capacity Signalling works



Delivery agency: Public Transport Authority

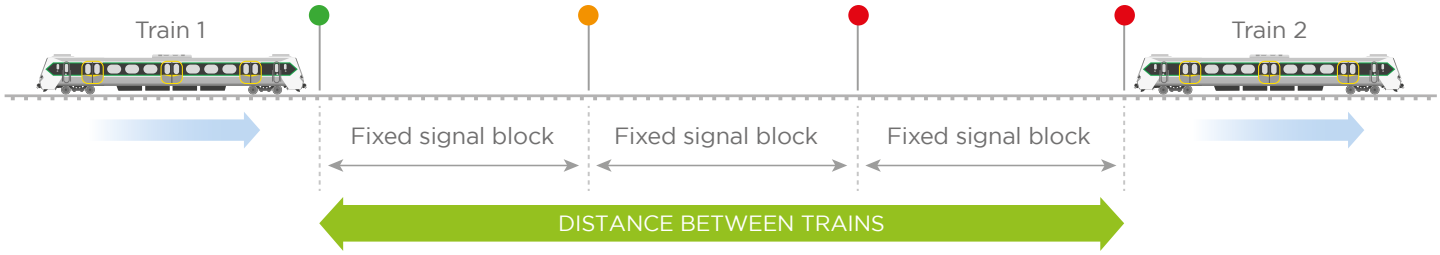
August 2021

What is High Capacity Signalling?

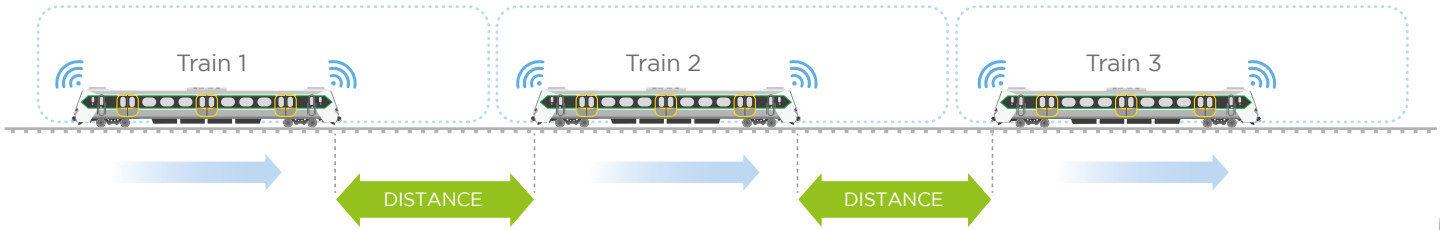
The existing 'fixed block' system uses coloured signals at the start of each fixed block section, with a number of blocks between trains for safe operations, which means more space between trains and therefore less trains on the track at any one time.

Instead High Capacity Signalling is a 'moving block' system that enforces train speed limits to maintain a safe distance between trains.

It does this through devices along the tracks and onboard the train that transmits information back to Train Control. The system creates a protective bubble or block which moves with the trains along the line, with only one train allowed in the bubble and no overlapping of bubbles. By managing train speeds, the system can manage braking distances so trains can always safely stop within their exclusive bubble.



Existing fixed block signalling system



Moving block signalling system

Why do we need it?

Many parts of the existing signalling system are approaching the end of their asset lives and need to be replaced. In addition, the existing system does not have the capacity to enable an increase in rail services to meet predicted future patronage demand. High Capacity Signalling will replace the ageing system with a modern one that will support more trains running more often to meet future demand.

It will also support a move to a 'turn up and go' peak service and improved reliability, quicker recovery times after unplanned disruptions, reduced maintenance costs and improved safety and efficiency.

What's next?

The new signalling system will be delivered in stages to minimise disruption to the operational railway. Based on similar projects undertaken around the world, the project is expected to take about 10 years to complete.

MORE INFORMATION

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