

Rail Safeworking Procedure

Train Testing Zone (TTZ) for Train Testing and Commissioning Activities for Southwest Corridor (Sydenham to Bankstown)

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1 Introduction

This document outlines the Rail Safeworking Procedure for planning, implementing and managing a Train Testing Zone (TTZ) to oversee Dynamic Train Testing Commissioning (T&C) activities within the Metro Southwest Network (SW) and MTS Network. This procedure will focus on Dynamic Train Testing (DTT) activities from low-speed to high-speed in Restricted Manual Mode (RM), Protected Manual Mode (PM), and Unattended Train Operations (UTO).

This procedure has been developed as per the requirements outlined within the relevant MTS-SMA Operations Protocol for DTT and will detail all the necessary activities to safely conduct Dynamic Train Testing Commissioning such as:

- Planning for a TTZ
- Implementing a TTZ
- Requirement during T&C activities
- Suspending and/or Fulfilling a TTZ
- Train Stabling
- Safety Critical Communication Protocols
- Training and Competency required
- Emergency & Incident Management during DTT
- Roles and Responsibilities for DTT

2 Accredited Parties and Boundary Definitions

As per the MTS-SMA Operations Protocol for DTT document the accredited parties for the applicable stage of dynamic train testing are as follows:

- Sydney Metro is the RIM for rail infrastructure for the Local Possession Authority (LPA) and TTZ during dynamic train testing.
- MTS is the RSO for rolling stock

MTS RIM Area Boundaries

The Rail Infrastructure Manager (RIM) boundary for Metro Trains Sydney (MTS) covers train operations, possession management, and all works within the rail corridor from the hard barrier fence located at approximately 5.440 km (Up & Down MSW at Sydenham) to the end of the terminal line at the Sydney Metro Trains Facility – North (SMTF-N).

The MTS network includes all associated rail infrastructure and yards between Sydney Metro Trains Facility – North (SMTF-N), Sydney Metro Trains Facility – South (SMTF-S), the Eastern Bypass Road, and the shunt necks, extending through to Sydenham Metro Station, including the Sydenham terminations.

SMA RIM Area Boundary

The RIM boundary for Sydney Metro Authority (SMA) begins at the southern side of the hard barrier fence at approximately 5.440 km (Up & Down MSW) and extends to the end of the terminal line at Bankstown Station (18.632 km at the buffer stops). Sydney Metro Local Possession Authority (SMLPA) on the UP/DN Metro Southwest Lines (MSW) between Sydenham Countryside Stop Blocks at approximately 5.565 km and Bankstown Station Cityside Buffer Stop 18.632 km.

Any changes to the RIM Boundary will be revised through the Operations Protocol then advertised via the Safe Notice platform.

Sydney Metro Local Possession Authority - SMLPA

Sydney Metro Local Possession Authority (SMLPA) on the UP/DN Metro Southwest Lines (MSW) between Sydenham Countryside Stop Blocks at 5.565 km (approx.) and Bankstown Station Cityside Buffer Stop 18.632 km.

The TTZ is a safety measure used to ensure the safety of workers during DTT by designating the area for the testing of train and ensuring there is a suitable safety buffer zone between workers and trains. It is a designated area within the SMLPA where all Train Testing Movements are conducted under the control of the Train Coordinator.

Dynamic Train Testing across RIM Boundaries

Dynamic test train operations within the MTS Network, particularly at Sydenham Station, will be managed under the Train Testing Zone (TTZ) Procedure. Although MTS is the Rail Infrastructure Manager (RIM) for the M1 network, the TTZ may be extended into the MTS area under certain conditions. This extension requires a valid MTS Work Access Request, an approved MTS Work on Track Protection arrangement, a Safe Notice where required and agreement between MTS and SMA on safety and operational protocols. This TTZ Procedure outlines the process to ensure all train movements are safe and compliant.

Dynamic Train testing within SW will be managed by the Sydenham to Bankstown Possession Protection Officer (S2B-PPO) and the Train Coordinator, in coordination with a TOCC Traffic Controller (TOCC TC) and/or appointed ATS Engineer. The S2B-PPO will operate from the Possession Protection Officer's Office, while the Train Coordinator and TOCC Traffic Controller and/or ATS Engineer will operate from the Temporary Operations Control Centre (TOCC). Both locations are situated at Campsie. Where DTT activities extend across network boundaries or into the MTS M1 Network, an MTS Possession Protection Officer or an MTS Qualified Protection Officer holding a valid MTS Work on Track Authority must authorise all test train movements within the MTS M1 Network. The Train Coordinator will continue to manage these movements in accordance with the approved test scope.

Depending on the type of testing being undertaken, the Train Coordinator and Traffic Controller may operate from either the TOCC or the Operations Control Centre (OCC).

3 Scope and Purpose

This procedure establishes the requirements for accessing and working within a Train Testing Zone (TTZ), during DTT Stage 1, Stage 2, Stage 3, Stage 3.5, Stage 4 and Stage 5, ensuring safe and controlled operations of the Test Train and associated testing activities.

DTT is broken down into five significant stages as noted below:

- Stage 1: Low-speed DTT in Restricted Manual mode
- Stage 2: Low-speed DTT in Protected Manual and UTO modes
- Stage 3: High-Speed DTT in Protected Manual and UTO modes (Stage 3.5 - including ATC Bypass)
- Stage 4: High-Speed multi train testing
- Stage 5: System Cutover

The purpose of this procedure is to:

- Establish the principles of a TTZ within SMLPA and/or MTS Network to conduct DTT activities
- Permit a Test Train to operate the above the general SMLPA permissible speed of 15km/h when specifically authorised and within a TTZ. As such, test trains may exceed this limit and operate at higher speeds as approved in the relevant Project Safety Reports and Risk Assessments for train movements.
- requires the establishment of a TTZ for Train DTT activities within the Metro Southwest (MSW) SMLPA, the TTZ will be considered a worksite within the SMLPA
- outline the safeworking arrangements for establishing a TTZ with a single test area within the SMLPA and define the operational processes for safely managing the worksite and train testing activities.
- detail the process for effective control and management of the test train movements, which will be authorised by the Train Coordinator, after the S2B-PPO has approved the establishment of the TTZ, located at Campsie.
- Support the train transfer arrangements as outlined within the within the *Transfer of Test Trains MTS Network to SWM Corridor – Marrickville for Dynamic Train Testing - SMCSW-HS-PR-60060*.
- defines the area where work outside the TTZ can or cannot be conducted. Prohibit staff and additional worksites from being present within the Rail Corridor (defined as fence-to-fence or on the Station platform, behind secured and locked Platform Edge Barriers (PEBs), secured and locked End Walkway Doors (EWDs), and secured and locked Temporary Approved Fencing) while a train is in motion.
- Test Train movement control and management may be managed from the MTS Operations Control Centre (OCC) located at Tallawong. This action will be dependent on the specific test cases, and subject to approval of the Project Safety Reports, supporting Risk Assessments, and required DTT Staging.

4 Document Control

Executive Director Health & Safety (SMA) is the accountable person for this procedure. Any amendments to this procedure and appendices must be recorded, and any major revision and / or amendments must be consulted with all the organisation stakeholders that are party to the signatory process of this document, and thereafter approved by the governance management process, before being distributed and implemented.

This procedure must be distributed to the following key personnel:

- Sydney Metro Rail Safety Manager
- MTR staff, including the Head of HSEQ, Rail Safety & Governance Manager, Test Train Supervisor, Rail Operations Manager and Deputy Project Director TSOM.
- MTS staff including Rail Safety & Systems Manager, Head of Operations, Possession Planning Manager, MTS Possession Protection Officer and the Customer Experience and Operation and GM SQRE, and any other key stakeholders as determined by MTS
- S2B Rail Safety Manager and Southwest Possession Protection Officer
- Sigcon Test Engineer and Operations Manager

- Train Testing Personnel, including Train Coordinator, Protection Staff, Test Train Pilot and Train Operator (CJC-T)
- Any other key stakeholders as determined by the RIM (SMA) and RSO (MTS) for DTT.

5 Abbreviations

5.1 Table of Abbreviations

Code	Description
ATS	Automatic Train Supervision (ATS) - a centralised system for loading timetables and for automatically setting routes accordingly.
ATS Engineer	The Automatic Train Supervision (ATS) Engineer is a qualified professional specialising in the design, implementation, and maintenance of ATS systems and their associated subsystems.
Buffer Stops	Made of metal and fixed to rail, use friction to slow down trains, common in passenger and freight terminals.
CBTC	Communication Based Train Control – a continuous, automatic train control system utilising high- resolution train determination, independent from track circuits; continuous high-capacity, bi- directional train to wayside data communications; and train borne and wayside processors supporting the implementation of: • Automatic Train Protection (ATP) • Automatic Train Operations (ATO) and, • Automatic Train Supervision (ATS) functions including • Automatic Train Regulation (ATR).
CJC-T	MTS Customer Journey Coordinator – Trains: (Train Operator).
DDU	Drivers Display Unit
DTT	Dynamic Train Testing
DTT Safe Notice	An authorise Notice for Dynamic Train Testing purposes to give additional advise to that provided in the Network Rules and Network Procedures
EB	Emergency Brake
EEH	Extended Engineering Hours
EMU	Electric Multiple Unit
FTR	Functional Test Report
GAMA	Geographical Automatic Mode Authorisation
HSDT	High-Speed Dynamic Testing
HSEQ	Health, Safety, Environment, & Quality
ITP	Inspection and Test Plan
LSDT	Low-Speed Dynamic Testing (LSDT).
MTR	Mass Transit Railway Corporation
MTS TC	A Qualified Worker who operates an ATS Workstation to authorise and issue Occupancy Authorities and manages rail traffic paths to ensure the safe and efficient transit of rail traffic in the Network. This role includes OCC Traffic Controllers, Depot Traffic Controllers.
TOCC TC	A Qualified Worker who operates an ATS Workstation to authorise and issue Occupancy Authorities and manages rail traffic paths for Dynamic Train Testing to ensure the safe and efficient transit of rail traffic in the Train Testing Zone within the Temporary Control Centre at Campsie.
NOE	Notification of Energisation

Test Train Pilot	Test Train Pilot - A Qualified Worker, who accompanies, directs, and instructs the CJC-Ts on train movement authority. The capability requirement as in Competency Matrix.
PO	Protection Officer - The Qualified Worker responsible for managing the rail safety component of worksite protection.
PM	Protective Manual (PM) Mode: Protected Manual mode of Rolling Stock operation requires a Train Operator to manually control some, or all functions or train operation as follows: The train is manually operated by Qualified Staff following speed limitation indicated on the Train Operators console, with fully Automatic Train Protection available, and Train doors and Platform Screen Doors / Platform Edge Barriers opening may be manually controlled by the Train Operator when authorised by the signalling system, and / or Train doors and Platform Screen Doors / Platform Edge Barriers opening may be manually controlled by the Train Operator (through the trains' door commands) and, Automatic update of journey information in salon.
PTE	Permit to energise
RM	Restricted Manual Mode – Restricted Manual mode of operations allows the train operator to manually control the movement of a train in the forward or reverse direction, with a speed limitation of 25 km/hour. The operation of the train doors and Platform Screen Doors / Platform Edge Barriers is manually controlled by the Train Operator.
Project Safety Report	The purpose of this project safety report is to identify and manage: • The project, system design and sub-system configuration. • The list of authorised trains • V&V report results of system design and subsystem including the CC I&V and FIVP result. • Installation Reports. • T&C Reports. • Analyse all the NOKs from Global V&V report and see if any restriction to be provided due to safety impact. • Include the CR analysis and see if any safety impact for the open CRs. • Restrictions of use. • Conclusion.
RTC	Risk Triggered Commentary – CJC-T's method of communicating their actions and thought Processes to the Pilot so they understand the train is under control
RWAR	Rail Worksite Access Request Form
SM-LPA	Sydney Metro Local Possession Authority
S2B	S2B – Sydney to Bankstown, a project delivery team through a joint venture between John Holland and Laing O'Rourke.
S2B PPO	Sydenham to Bankstown Possession Protection Officer - The Qualified Worker responsible for coordinating the protection of worksites under a Local Possession Authority (LPA) along the MSW lines between Sydenham and Bankstown.
Stop Blocks	Two sleepers, painted white which are fixed to rail as temporary and movable, designed for use during maintenance or construction work. Deployed as needed and removed when the temporary need has passed.
SSJ	Sydenham Station & Junction is the location where the temporary stop blocks are positioned. It marks the accredited boundary between MTS and SMLPA.
SWMS	Safe Work Method Statement
Test Area	A defined area inside the TTZ where train testing can take place with suitable buffer zones either end. All documented in the TZZ Safe Notice
Test Train Movement	Any EMU Train movement inside the SM LPA, train can either be on test or positioning, with inclusion of moving train from MTS Network to S2B Network.
TOCC	Temporary Operations Control Centre, located at Campsie

Train Coordinator	A qualified worker who is responsible for all test train movements withing the TTZ area
TTZ	Train Testing Zone – considered as a worksite across SMLPA and MTS work on Track Authority to enable Trains and Systems testing, consisting of Safe Buffer Zones around the Test Area.
UTO	Unattended Train Operation (UTO) Mode The driverless mode of operation, where trains are automatically controlled by Automatic Train Control with fully Automatic Train Protection.
WAA	Work Activity Advice (Sydney Metro)

6 Train Testing Zone (TTZ)

The TTZ is a safety measure used to ensure the safety of workers by designating an area within either the SMLPA and/or within MTS Network to conduct DTT activities. The purpose of a TTZ is to ensure train testing can be conducted safely. Below are the principles of a TTZ:

- The limits of the TTZ can vary depending on the type of testing to be carried out, however, the limits must be located from defined clearance points such as e.g., station to station, terminal points such as Sydenham Stop Blocks to Bankstown Terminations, PPI's or Points Clearance Signs, etc.
- A **Test Area** must be designated within the TTZ limits. This boundary defines where test train movements are allowed.
- A **Safety Buffer Zone** must be designated between the Test Area and TTZ Limits. This is also referred to as a "Safe Stoppage Area"
- Mandatory signage to be used
- Movement management Train Coordinator
- Worksite permitted and not permitted

6.2 Planning for a TTZ

Applications for implementing a Train Testing Zone (TTZ) must be coordinated through the MTR & SMA Systems Testing and Commissioning committee. This process involves collaboration with the MTR Rail Operations Team and the MTR Rail Safety team to address all Health, Safety, and Environmental (HSE) requirements, as well as Rail Safeworking protocols. The details should be reviewed in the MTR Testing Workshop's Weekly Planning meeting and documented in the Possession and Test Plan Lookahead Schedule spreadsheet.

A SMA Worksite Access Request (WAR) must be submitted to the S2B Possession Planner by the MTR Rail Operations Team T-minus four weeks. Furthermore, a Work Activity Advice (WAA) must also be submitted by MTR to SMA no later than four weeks prior to implementing the Train Testing Zone (TTZ).

If the planned train testing scope requires access to the MTS Network, an MTS Work Access Request (WAR) form must also be submitted to the MTS Possessions Team in accordance with the MTS WAR process.

The work request forms mentioned above must stipulate the following as a minimum requirement:

- track(s) affected by the potential Train Testing Zone (TTZ)
- duration of the Train Testing Zone (TTZ)
- defined Testing Area
- summary of the type of Testing and Commissioning to be carried out.
- any other relevant requirements

To ensure safety requirements are upheld during the implementation and execution of Train/System Testing and Commissioning, the MTR Rail Operations Team will develop a Dynamic Train Testing Safe Notice (DTT Safe Notice), with endorsement by MTS representative and approved by SMA representative. They will also lead the planning activities, which shall include:

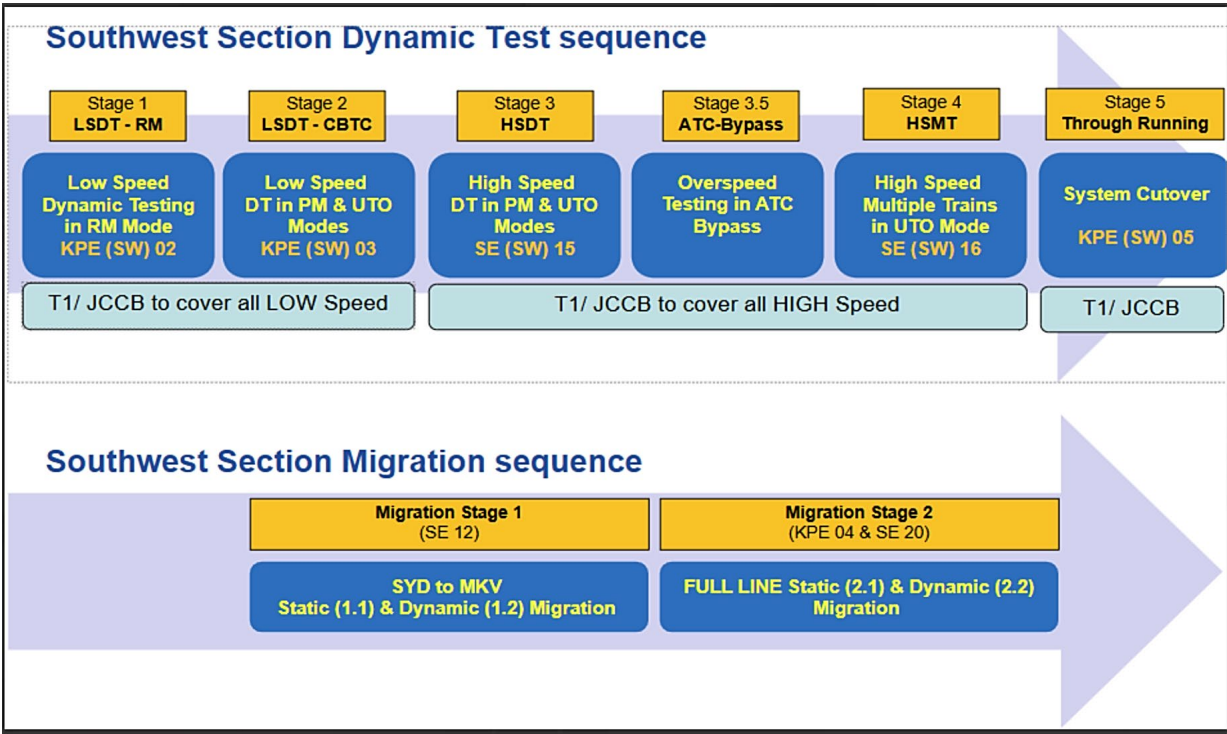
- the limits of the Train Testing Zone (TTZ)
- the Defined Test Area
- Safe Buffer Zone
- dates and times the TTZ will be introduced.
- the Worksite Protection arrangements for both the test area and the TTZ
- overrun Marker Light locations.
- Trackside signage
- Any exceptions to the TTZ and Train Transfer procedures

The DTT Safe Notice must be reviewed S2B Rail Safety Manager / Possession Manager, endorsed by MTR and MTS Rail Safety teams and then approved by SMA Rail Safety representative. Once approved by SMA, the Safe Notice will be released by the MTS Safety team to all relevant parties involved in the DTT activities and S2B Project.

6.3 Dynamic Train Testing (DTT) Stages

DTT is delivered in five stages, with two CBTC Migration Stages overlaid across them. Each stage will undergo an assurance process through MTR and MTS Tier 2 CCBs. Three of these stages are considered Significant and will require additional assurance gateways via MTS Tier 1.

As DTT progresses, RIM and RSO arrangements may be subject to change. Any such changes will be detailed in an MTS/SMA Operations Protocol and communicated via the DTT Safe Notice. Where the changes are significant relevant supporting procedures will be updated accordingly. Below diagram outlines high level DTT Stages:



A designated worksite for train testing purposes will be exclusively established (TTZ) within an SM-LPA or MTS Work on Track Authority within MTS Network (where required). The limits of the TTZ can vary depending on the type of testing to be carried out, however, the limits must be located from defined clearance points such as e.g., station to station, terminal points such as Sydenham Stop Blocks to Bankstown Terminations, PPI's or Points Clearance Signs, etc. The defined clearance points utilised as TTZ limits will be outlined with the DTT Safe Notice.

When conducting DTT within SM Network, the TTZ must be established within SMLPA prior to the commencement of any Testing and Commissioning train movements, including before the initiation of Train Transfer between the MTS Network and the SMLPA (or vice versa).

Access to the TTZ is only permitted to personnel who hold the competencies as noted within the MTR Southwest Testing & Commissioning Matrix (SMCSW-RS-RG-60148) (Section 14.7). Exceptions will be made during Emergency and Incident Management.

The MTR Supervisor, Test Train Pilot, or Protection Officer for DTT will ensure personnel are competent and qualified via the MTA RIW systems. The MTR & SMA Rail Safety Team will conduct DTT assurance and verification.

Access to TTZ is restricted to DTT activities only. General access or egress outside of DTT activities to a TTZ is not allowed. Work on Track Access Permits outside of DTT activities should not be granted within TTZ limits. All access points to TTZ must remain closed or fenced off for the duration of DTT activities.

Worksites outside of Rail Corridor

The TTZ limit is defined above and for clarity, are limits from one clearance point to another such as e.g., station to station, terminal points such as Sydenham Stop Blocks to Bankstown Terminations, PPI's or Points Clearance Signs, etc.

Rail Corridor is defined as from fence-line to fence-line, or if there are no fences, everywhere within 15 metres of the outer rails. Station Platform where there is a PEB is not considered a Rail Corridor. No other work is to be approved in the rail corridor whilst TTZ is in place.

Note: Where work is being conducted outside of Rail Corridor, the work must be assessed that it does not have a credible potential to encroach within the Rail Corridor.

Competency & Qualification

All staff required to operate and manage the Test Train must hold the required competencies.

Only individuals and rolling stock directly involved in the operation of the test train movement will be permitted access to the designated Train Testing Zone (TTZ) area.

If the need to work or conduct Train Testing and Commissioning within the MTS Network an MTS – Work Access Request (WAR) must be submitted and approved according to the MTS WAR process. MTR / S2B must attend the MTS Possession Coordination Meetings.

MTS Possession Coordination / Possession meetings take place on a weekly basis chaired by the relevant Possession Planner or delegate where all Rail Safeworking requirements will be discussed with all relevant parties as part of standard possession planning meetings.

During these meetings, the following will be discussed:

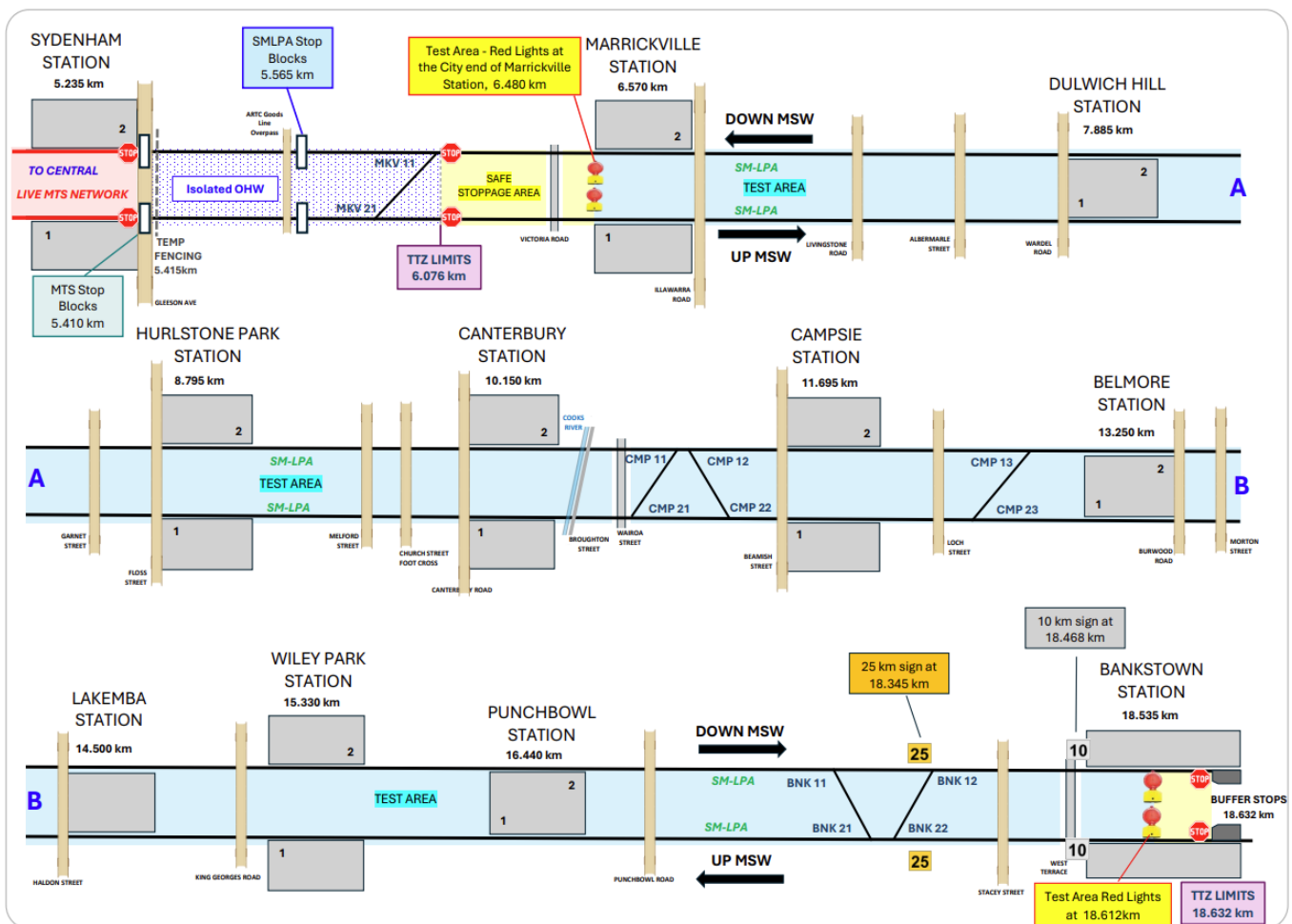
- any changes in classifications of the sections and implementation of a Train Testing Zone (TTZ) within the MTS Network
- any planned rolling stock movements from within sections, or transit between sections of the SMLPA and MTS Work on Track Authority (vice versa).

- any changes to proposed access points of the track.
- clashes or conflicts in scope of work.

A DTT Safe Notice will be issued to highlight the TTZ extension from the SMLPA into the MTS Work on Track Authority. This notice will define the TTZ boundaries and outline all protection requirements, including Safe Buffer Zones and the mandated Test Train Speeds – as per Project Safety Reports.

6.5 Example Diagram of TTZ Overlay on the SMLPA

The example below outlines the basic principles of the TTZ between the Sydenham stop blocks and Bankstown Buffer Stops including the Test Area and Safe Buffer Zone.



6.6 Staff NOT permitted within the UTO Boundary fence lines during TTZ

No staff will be allowed in the corridor (fence-to-fence / PSD considered a fence) while the train is moving. Additionally, any staff or worksites conducted outside the UTO Boundary fence line must be carefully managed to ensure it does not pose a risk of obstructing the area beyond the UTO fence and into the Danger Zone.

Measures must be in place to prevent materials, equipment, or personnel from encroaching into the Danger Zone.

6.7 Diagram of UTO Boundary Fence Line – Southwest Rail Corridor



6.8 Working on Station Platforms during TTZ

Station platforms are deemed to be outside the boundaries of the Rail Corridor - Train Testing Zone (TTZ), provided that the Platform Edge Barrier (PEBs), End Walkway Door (EWDs), and Approved Temporary Fencing are securely closed and locked, and light barriers are installed at PSDs designated for emergency egress for the Train Testing Team.

Construction work on station platforms is permitted during TTZ operations under the following conditions:

- Platform Screen Doors are closed and secured.
- A comprehensive risk assessment has been completed and approved by Senior Management.
- A work access request has been approved for the activities as per S2B Possession Planning Manual.
- The Possession Protection Officer (PPO) has authorised the activity.
- A qualified Protection Officer has conducted a thorough risk assessment.
- A physical hard barrier is established outside SADS and the Danger Zone.
- There is no potential for intrusion into the Danger Zone.

6.9 Samples of physical hard barriers for Platform working

Light Barrier

For very light-duty work
on station platform for
Train Emergency Egress
purposes

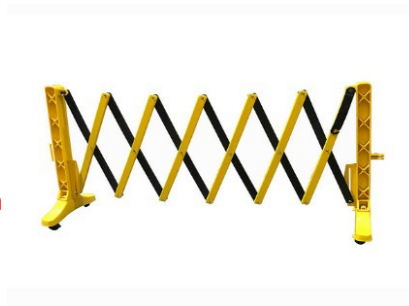
**Not to be used up against
live train testing corridor**



Lightweight Plastic Expanding Barrier

For light-duty work and station
platform use platform for Train
Emergency Egress purposes

**Not to be placed in front of open
Platform Screen Doors (PEB)
while Test Trains are operating**



The use of demarcation tape is strictly prohibited under all
circumstances.



6.10 DTT Safe Notices

DTT Safe Notices are important documents that provide information on Test Area & TTZ limits, safe practices, and procedures for workers. Safe Notices outline in detail the variation from the normal method of Safeworking and the methodology of how the associated risks are mitigated.

These notices must be issued prior to the intention to implement a Train Testing Zone (TTZ).

If there are any new or bespoke instructions outside of this procedure, they will also be included.

The DTT Safe Notice must be released in a timely manner before the intended test dates, to allow the staff involved in the test sufficient time for familiarisation.

These DTT Safe Notices will be reviewed and endorsed by MTS, approved and produced by SMA, using the information provided by the MTR Rail Operations Team. Below requirements for issuing Safe Notice to affected stakeholders:

- SMA to issue the approved Safe Notice to MTR, MTS & S2B
- MTR, MTS & S2B to cascade the Safe Notice to affected stakeholders

The DTT Safe Notice must be issued to all personnel mentioned in this procedure and relevant staff required to follow the instructions outlined in the Safe Notice.

The Safe Buffer Zone must be established at each end of the TTZ. The TTZ Exclusion Zone shall include both Up and Down Metro Southwest (MSW). The Test Area must be clearly defined and start / finish at the end of a station, with a safety overlap to the next station if applicable.

Any testing required outside of these limitations will require special protection arrangements that will need to be agreed between MTR, S2B, MTS and SMA then advertised in the DTT Safe Notice.

All train testing and shunting movements within a Train Testing Zone (TTZ) are to be planned/ scheduled, through possession planning meetings overseen by the MTR Rail Operations Manager.

The S2B-PPO is responsible for arranging and removing all TTZ and LPA protection, including stop blocks and RIM separation temporary fencing arrangements in the SW section. If the TTZ crosses into the MTS network, the MTS PPO is responsible for these tasks in the NW and CSW network.

The review and endorsement of DTT Safe Notices must be carried out by
MTS and DTT Safe Notice's must be approved by SMA.

6.11 Test Train Preparation

ALSTOM shall provide a fully commissioned and certified Train to undertake train testing and will be prepared by an ALSTOM Technician in accordance with the ALSTOM Preparation (T&C) procedure. There should be no outstanding faults present on the train.

Once the train preparation has been completed, the Test Train Pilot and the CJC-T shall conduct an external train inspection alongside ALSTOM's technician.

In addition to normal checks, the Test Train Pilot must ensure that the 2 x wheel chocks have been removed from the track and stored in the train and the Alstom technician subsequently records in the rolling stock pre-test checklist.

In addition to normal operation the CJC-T is to ensure the front window is clear of dirt, the wipers work, and the PA is functional. All parties must ensure all testing equipment is safe and secured to prevent slip, trip, or fall hazards.

7 Implementing the TTZ between both MTS LPA and SMA LPA

7.1 General Requirements prior to the commencement of Testing

All rail safety workers involved in the Testing and Commissioning activities must be briefed about the testing procedures and operational safety and hold a thorough understanding of the Testing and Commissioning requirements.

The Train Test PO must ensure that the Test Train Pilot and CJC-T are aware of the SMLPA / MTS Work on Track Authority limits and TTZ limits before any train movements take place. The test train Pilot ensures that the CJC-T understands the limits of every train movement they authorise, and the locations of any Possession Limit Marker boards (Stop Boards), Speed Boards and Overrun Marker Lights.

The Supervisor ensures all personnel wear the appropriate PPE for the train environment.

MTR Train Testing Supervisor is to prepare a Pre-Start Briefing including instructions:

Where the TTZ is adjacent to the MTS Work on Track Authority there are additional protection arrangements at the boundary. The S2B PPO must ensure that all Stop Blocks, and additional protection arrangements are removed after the MTS Work on Track Authority is obtained by the Protection Officer assigned to the worksite.

- Ensuring the train crew are aware of the activities to be conducted.
- Ensuring all train occupants have been briefed appropriately and have signed the Prestart Brief and all required documentation.
- Brief about the MTR Stop Work Authority
- Ensuring all hazards have been identified during the pre-work brief and made safe.
- Ensuring all required documentation is on the train with a minimum of one copy in each cab for the train crew.

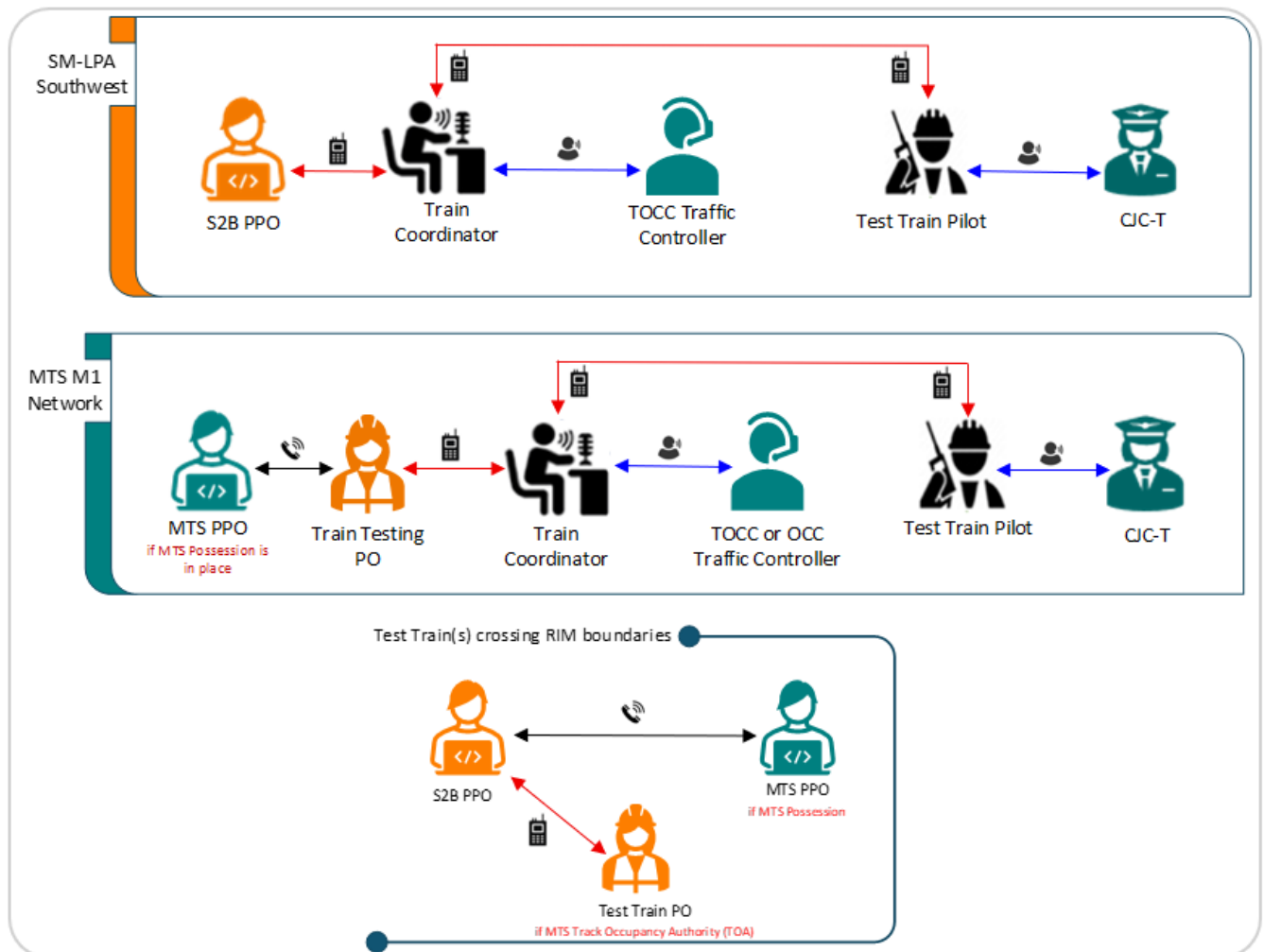
7.2 Removing and Re-instating Temporary Stop Blocks and associated equipment at Sydenham

For the Train Testing to be conducted between the SMLPA and MTS Work on Track Authority, the Temporary Stop Blocks and associated equipment at Sydenham must be removed and re-instated as outlined in this procedure.

When the MTS and SM LPA's have been implemented and the protection arrangements have been provided, the Train Testing Protection Officer must then allow workgroups to enter the track to remove the Temporary Stop Blocks and Possession Limit Boards Countryside of Sydenham Platforms in readiness for the test train to transition from the SW Network to MTS CSW Network and vice-versa for Train Testing.

Once the Train Testing has been completed and the Test Train secured, the S2B-PPO in consultation with the MTS PPO must authorise the Train Testing Protection Officer to allow workgroups to enter the track to reinstate the Temporary Stop Blocks and associated equipment.

7.3 Command and control when performing Dynamic Train Testing across RIM Boundaries



7.4 TTZ - Trackside signage:

Rail track signage is critical in ensuring the clear demarcation for the end limits of the TTZ and its Test Area limits for a visual indication to the CJC-T and Test Train Pilot. The CJC-T and Test Train Pilot must be informed of the location of the trackside signage implemented for the TTZ. This must be provided to all workers during the Pre-Start brief including:

- Location of the trackside signage
- Purpose of the trackside signage
- Expected actions to take when the trackside signage is observed.

Below signages will be positioned to conduct DTT:

- 25 kph speed board will be positioned on stanchions 18+345 km Up MSW Line and 18+345 km Down MSW line.
- 10 kph speed board will be positioned on Location Marker Boards, BNK-1303 at 18.463 km Up MSW Line and BNK-1304 at 18.468 km Down MSW line.
- Flashing Red Overrun Marker Light will indicate the end of the test area 20m after the stopping point of the platform to ensure they can be sighted clearly.
- Stop Boards (possession limit boards with red light): Will also be positioned at the end of the TTZ limits.

The track side signages are to remind the CJC-T & Test Train Pilot that they are reaching the end of the testing area. The following information regarding the location of notice boards will form part of the Safe Notice. The Safe Notice must also be issued on paper to the Test Train Pilot and the CJC-T for reference purposes throughout the testing. All boards must be placed in position prior to testing or train movements commencing.

The location of required track side signages must form part of the pre-test briefing between the Test Train Pilot and the CJC-T.



25 kph speed sign
Installed at the
approach to the 10
kph speed sign,



10 kph speed sign
Installed at the
approach to the
TTZ end limits,



Flashing Red
Overrun Marker
Light marking the
end of Test Area



Possession Limit
Marker Board (Stop
Board) marking the
end of TTZ

Note: CJC-Ts should provide Risk triggered commentary (Aspect Calling) on approaching any track side signage to ensure the Test Train Pilot is aware they have identified them. If the CJC-T fails to communicate that they have observed the warning board the Test Train Pilot must check to see if the CJC-T is aware of their presence.

In addition to the track side signage station names will be positioned on the approach side of the station in a clearly visible location for SW Stations. This is to ensure the CJC-T and Test Train Pilot maintain situational awareness regarding their current location inside the Test Area and TTZ boundaries/limits.

7.5 Handover of signalling control from the OCC to the TOCC

Given the requirements to book out part of the MTS Traffic Controller's ATS in order to conduct Train Testing between SMLPA and MTS Network, the S2B-PPO and Traffic Controller within TOCC Campsie (TOCC TC) must receive the MTS Infrastructure Booking Authority (MTS IBA) MRF 003 Form.

The ALSTOM Engineer responsible for booking out and booking into use the ATS system within OCC must complete the IBA form and provide a copy to the MTS Engineering Controller (EC). The MTS EC will then provide a copy to the MTS TC and Manager Network Control.

The S2B-PPO must use the MTS IBA provided by the Engineering Controller from OCC as part of the Infrastructure Booking Authority (Southwest IBA) to gain assurance that the TC within TOCC has the control of the MTS Network for the purpose of commencing Train Testing between the two networks.

Refer to MTS IBA Procedure (MPR704 - Using Infrastructure Booking Authorities and the MTS IBA Form – MRF 003 - Infrastructure Booking Authority (IBA))

7.6 Exceedance of authority during testing

Prior to ATP being proven, there exists an increased risk of the following occurrences during testing:

- A test train exceeds the limit of the CBTC test area,
- A PPI signal being inadvertently passed at stop,
- Exceed the limit of a Movement Authority, or
- Over-speeding event.

A train passing a signal at Stop or exceeding a Movement Authority while performing a test step as prescribed in a test script is not considered to be a reportable occurrence as long as the overrun does not exceed the limits of the TTZ area.

To protect against any adverse event resulting from a test overrun, the ATS Controller must ensure route integrity is in place prior to authorising the test to commence.

Note: this is a term used to ensure the route is set and any points are locked in normal, in the event of an overrun.

Where an authorised speed or Movement Authority has been exceeded, the CJC-T must bring the train to a stand immediately using the Emergency Brake and the Pilot must report the occurrence immediately to the Train Coordinator or MTS PPO /S2B-PPO and Test Coordinator.

The Pilot must supervise all authorised speed and Movement Authority compliance and act in the event the CJC-T does not attempt to control the train correctly by stopping the train immediately if necessary.

After conducting a comprehensive Risk Assessment, The Test Coordinator, Supervisor and Alstom Technicians / Train Coordinator must liaise to determine if it is safe to continue testing.

A train passing a signal at stop or exceeding a movement authority outside of a prescribed test movement is a reportable occurrence.

7.7 Authorising trains to enter the TTZ from the MTS Network

Transfer of Test Trains from MTS Network to SW Network and return must be completed as per the *Transfer of Test Trains MTS Network to SWM Corridor – Marrickville for Dynamic Train Testing - SMCSW-HS-PR-60060*.

7.8 Infrastructure Booking Authority (IBA) for DTT

To enable DTT within SW, the Infrastructure Booking Authority Procedure must be followed. Refer to the IBA Procedure: *S2B IBA Procedure - SMCSWSSJ-JHL-WSS-PC-PRO-000001*

7.9 Authorising trains to enter the TTZ from the MTS Network

Prior to authorising a test train to enter the TTZ, the Sydenham to Bankstown Possession Protection Officer (S2B-PPO) must obtain an assurance that all required infrastructure and systems are certified and are ready to be used to allow a train movement from Sydenham Sydney Metro Train Facility – South (SMTF-S) into the TTZ to commence train testing.

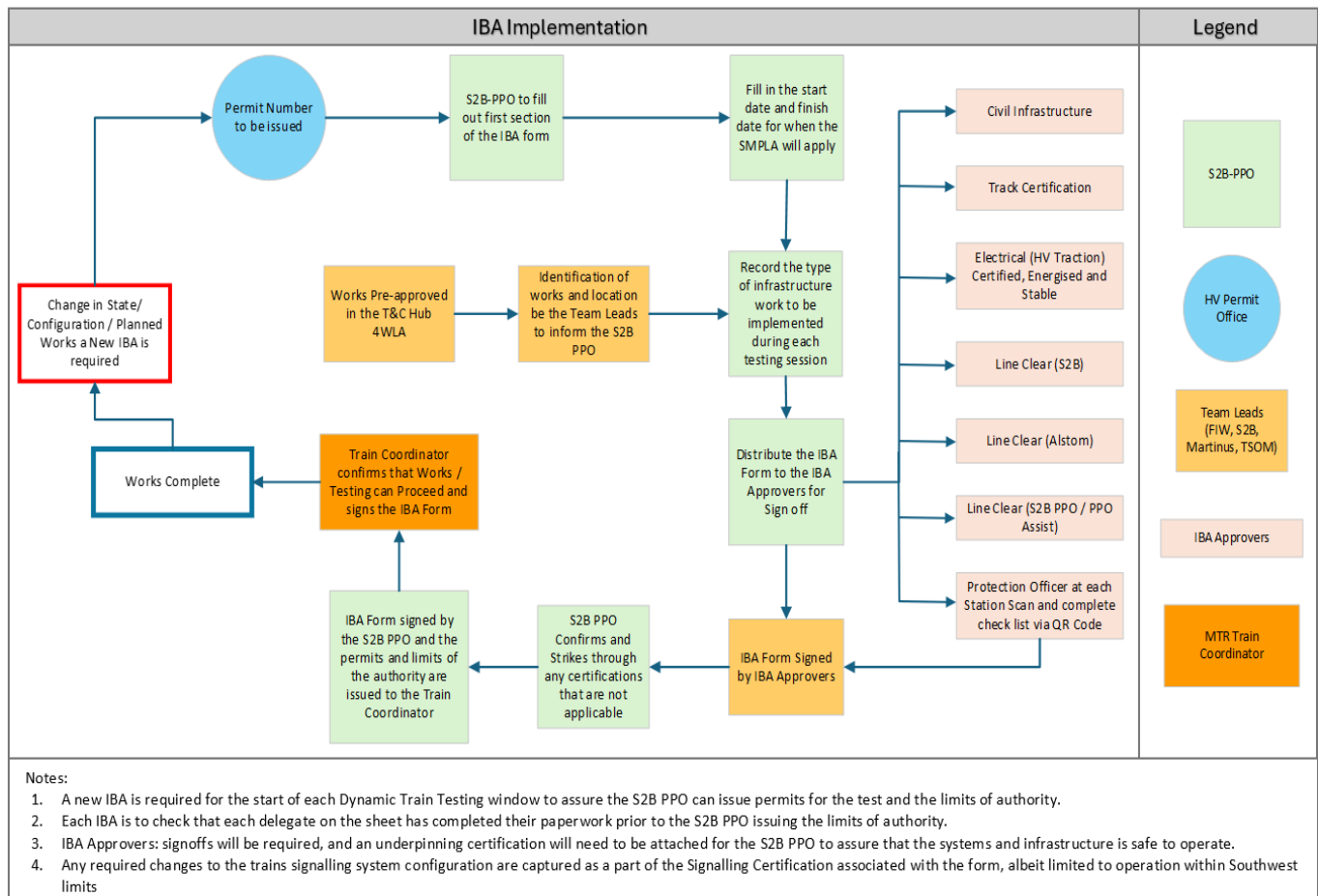
The S2B IBA form will assure the S2B-PPO of which infrastructure is booked in, and which is booked out and the applicable certified status of that infrastructure during a test.

The S2B IBA will also provide Constraints / Operational Limitations for each of the System / Infrastructure to support the S2B IBA.

This approved set of certifications outlined in the S2B IBA will provide the assurance that the S2B-PPO requires to set the limits of authority and establish the TTZ in conjunction with the MTS PPO for train testing.

- The S2B-PPO must follow the S2B IBA Procedure prior to establishing a TTZ between the CSW and SW Networks.
- The S2B-PPO must also receive the MTS IBA as an assurance for the following:
- Stop Blocks and associated equipment have been removed and secured within SSJ junction.
- The MTS Traffic Controller's ATS is handed over to TOCC TC within the Temporary Operations Control Centre as required to support tests planned.

7.10 IBA Implementation Flow Chart



7.11 Operation of trains within the TTZ

Once the TTZ is established and permission has been obtained for the test train to enter the TTZ, the authority required for the test train to move within the limits of the TTZ is authorised by the Train Coordinator.

Note:

Only one test train per track will be permitted within the TTZ at any given time, until the Project Safety Report, supporting risk assessments, and the uplift of DTT Stages have been approved.

In the event of a train failure, a second train may be authorised to enter the same track for the sole purpose of recovering the failed train.

Access to track for the purpose of conducting DTT Activities must be risk assessed and approved SWMS must be followed. Controls noted and not limited to the following:

- Confirmation that the train is stationary and will not move Train Pantograph must be lowered before test personnel entering the rail corridor
- Test Crews are to be countered on and off on a roll call register when entering and leaving the rail corridor
- Any other safety controls as noted within SWMS and Safe Notice. 

7.12 Stopping a train in an emergency

If anyone involved in testing needs to stop the test train immediately the radio call is **“EMERGENCY – EMERGENCY – EMERGENCY.”** In the event of hearing such a communication the Pilot must ensure the CJC-T places the brake handle to the emergency brake position or strikes the emergency plunger.

7.13 Stopping a train in a non-emergency scenario:

If anyone involved in testing requires a test movement to be stopped for other reasons than an emergency the radio call is **“STOP – STOP – STOP.”** The pilot should inform the CJC-T to bring the train to a controlled stop.

7.14 Accessing the track in TTZ

In the event of Emergency during Dynamic Train Testing:

The S2B-PPO must inform the Train Coordinator that testing, and all train movements need to cease. The Train Coordinator must instruct the Test Train Pilot to come to a complete stand and secure test train immediately within the TTZ and confirm when this is completed. Testing and train movements are now suspended,

- The Train Coordinator has confirmed with the Test Train Pilot that the Test Train is stationary, the park brakes are applied, and the pantographs have been lowered. The Test Train will not re-energise or move until authority is provided by the S2B-PPO,
- S2B-PPO can only then grant track access,
- The Protection Officer (PO) must gain approval for the use of the track access point from the S2B-PPO prior to supervising the work group in accessing the tracks within the Train Testing Zone (TTZ), and
- The Protection Officer must keep the S2B-PPO informed of progress.

7.15 Authorising trains to depart the TTZ.

Prior to departing the TTZ, the Train Coordinator must obtain approval from S2B and MTS PPOs and or the MTS Traffic Controller to authorise the test train to depart the TTZ.

7.16 Management of worksites adjacent to the TTZ in the SW Network

Due to ongoing construction works on Southwest station platforms, the Station works must be separated from the Train Testing Zone.

No construction works are permitted within the UTO fence lines.

However, limited works involving SWM signalling, control, and communication systems may be carried out during DTT, provided they are supported by approved comprehensive risk assessments and do not impact the functionality or movement of test trains (this includes both installation and testing activities).

Any test train movements which pass through a station platform, requires the platform construction worksite to have a physical hard barrier to ensure that no personnel can come into contact with the test train. Light Barrier delineation as shown in section 5.7 will be erected on all platforms without obstructing the Platform Edge Barrier (PEB) emergency egress doors in case there is an emergency evacuation of the test train.

The Protection Officer or Delegate role is to protect rail workers from being struck by test train by managing any unauthorised person from entering the Rail Corridor within the limits of the TTZ while it is enforced.

The following requirements must be met for stations within the TTZ:

- Signage must be regularly used on Station demarcation physical barrier and all Station rail access doors to indicate a Train Testing Zone (TTZ) area.
- PO must be provided at each station platform, while DTT is enforced.
- Signage displaying Emergency Evacuation / Exit Zones as well.
- Wherever possible doors must be locked, key security maintained.
- The TTZ and Train Testing Area should not be directly accessible from a station platform.
- The TTZ limits must include both MSW SMLPA Lines, i.e., all limits within UP/DN MSW SMLPA
- The roles and responsibilities of the S2B PO remains as per the TTZ Procedure.

8 Requirements during testing

Below are high level requirements during DTT. The detailed requirements for each test will be contained within the applicable Test Procedure and SWMS.

Before each test, the Test Engineer in charge should clearly communicate and brief the test team about the test details, including how and when the CJC-T should react if a test fails.

The Test Train Pilot must follow and relay instructions to the CJC-T and/or onboard testing personnel for all train movements given to them by the Trains Coordinator.

The CJC-T and onboard testing personnel must follow all instructions given to them by the Test Train Pilot. The S2B-PPO and Train Coordinator are responsible for ensuring the train is worked in accordance with Network Rules and Procedures, and Safe Notice

No other workers are permitted in the vicinity of the driver consol. Alstom to create a 3-meter zone and place tape on the floor and no staff are to enter this area except in case of emergency.

If computers are to be connected to the train, they are not to be placed on the dashboard while the train is in motion.

Any exceptions to this procedure must be approved in writing by the MTR T&C Manager.

Below are key requirements for DTT:

- S2B PPO confirm RIM Boundary protections are in place
- S2B PPO Review and approve the IBA as per the IBA Procedure and issues the TTZ
- S2B PPO responds to and manages the Incident and Emergency when notified as per the S2B Incident & Emergency response plan and the S2B Possession Management Plan. This is further outlined below within the Incident Management flow chart
- A flashing red light should be placed at the end of the Test Area & Emergency Brake (EB) Zone as a visual indication.
- A Safe Buffer Zone should be established in case the train exceeds the authorised limit. (Note: that in some test cases, the train in RM (ATC Bypass) may exceed the Test Area (after consultation with all parties and a risk assessment has been conducted).
- A Communication Protocol between personnel conducting Dynamic Train Testing and managing the SMLPA should be established and adhered to.
- The CJC-T or Train Pilot should activate the Emergency Brake (EB) to stop the train if the Test Area limit of authority is exceeded.
- The CJC-T or Train Pilot should activate the EB when overspeed is observed.
- The CJC-T or Train Pilot should activate the EB to stop the train if it exceeds the test area and passes the Flashing Red Light (EB Zone).
- The CJC-T or Train Pilot should activate the EB to stop the train if unauthorized motion is detected.

During testing, train movements must be conducted within the designated Test Area, which is located within a Train Testing Zone (TTZ). To maintain safety, a Safe Buffer Zone is established at the end of the Test Area within the TTZ.

Continuous monitoring of physical hard barriers is required, and testing should be halted if the state of the physical hard barriers becomes unacceptable or compromised. In addition to the CJC-T, a Competent Test Train Pilot is present on board to monitor the train's location and movement. The CJC-T or Train Pilot is responsible for activating the Emergency Brake (EB) when the train passes the EB zone.

Prior to commencing testing and commissioning, a pre-start brief is conducted to establish communication protocols, with the use of MTR Tetra Radio being the primary method during Testing and Commissioning (T&C) activities. Safety Critical Communication protocols are defined, and roles and responsibilities are clearly outlined.

As part of the TTZ start-up process before any dynamic testing session begins, Red Flashing Light Overrun Markers, Possession Limit - Stop Marker Boards and Stop Blocks must be in place as per the details listed in the TTZ Safe Notice.

8.1 Conducting Testing within the MTS Network

During Train Testing within MTS Network, the following must be implemented to prevent passengers from entering the Test Train at interchange stations such as Sydenham:

- Where possible, schedule tests involving PSD opening at Sydenham during times outside MTS Trains passenger service hours (Cross-check Test Possessions slots against MTS service hours)
- Minimise PEB opening on platform during Test Train running (Minimise overlap time; limit PSD opening to door-set at train cab doorway)
- Plastic mesh with signage across train doorway for doors to be opened during testing (other than cab doorways used for test team access / egress)
- Signage on PEB panels: "Testing in Progress / Do Not Board!" or similar wording
- Signage at Sydenham indicating Train Testing in Progress
- Presence of Protection Officer at Sydenham and Bankstown, to oversee PSD opening / platform interface, to help prevent station users boarding Test Train
- Messages on Passenger Information Display Screens (PIDS) such as "Testing in Progress / Do Not Board" or similar wording

When it comes to the safety and reliability of trains and systems, rigorous testing is essential. To ensure that systems and trains are effectively integrating, or significant modifications meet the highest standards, conducting train testing in protective mode is an integral part of the process.

This approach allows engineers and technicians to simulate real-world scenarios and thoroughly evaluate train and system performance and safety.

By proactively identifying and addressing any potential issues, train and systems testing in protective mode aims to enhance passenger safety and optimize the efficiency of Computer Based Train Control operations. In addition, prior to each test event the Alstom on-board Engineer must brief the Pilot and CJC-T of the details of the test being undertaken and what should be the actions of the CJC-T in the event of a test failure or exceedance of test limits.

9 Stabling Trains following the completion of Testing activities.

9.1 Stabling Test Train(s) within the Southwest Corridor

Upon completion of testing, the train must be stabled within the Train Test Zone (TTZ) at a predetermined Southwest station, as agreed upon by the S2B-PPO and the Train Coordinator. Once the train is positioned at this location, it must be securely stabled.

The S2B-PPO must also ensure that worksite protection is established, preventing any other rail traffic from approaching or encroaching upon the stabled and secured test train. This is critical to maintaining a safe work environment during the stabling period.

Hi Rail Movement

S2B with consultation with MTR can coordinate and manage hi-rail movements around a stabled train/s.

9.2 Stabling at SMTF-S

Once testing is completed and the train is positioned at the end of the Sydenham test area - within the TTZ, the Train Coordinator must coordinate with the S2B-PPO, TOCC TC, and MTS TC to confirm that the Overhead Wiring (OHW) is correctly energized. Upon confirmation, the S2B-PPO will arrange for the removal of the applicable Test Area Stop boards, SMPLA and interface limit Stop Blocks, and any temporary fencing.

Once it has been verified that all necessary stop boards and Stop Blocks have been removed, the SMTF-South Train Controller will authorise the Test Train Pilot to advance the train to the designated end of the applicable road as directed by MTS Operations.

When the train arrives at the specified stabling road, the Pilot must inform the S2B-PPO of the train's exact location. The S2B-PPO will then arrange for the protection measures at Sydenham to be restored.

- For planning purposes, when stabling test trains within SMTF-S, the test train shall only be stabled according to the directions provided by MTS TC Operations. The following procedures must be followed:
- The Pilot must obtain the necessary authority from the Train Coordinator and MTS TC before accessing the track.
- The Pilot is also responsible for placing two 'wheel chocks' on either side of the leading wheel, under the control of the CJC-T control desk, if directed by MTS SMTF-South Train Controller.
- ALSTOM Technical Engineers are responsible for performing all tasks required to stable the test train.
- The SMTF-S TC will ensure that ALSTOM staff are adequately protected during all operations related to the stabling of the train.

Test Train Personnel must oblige to MTS Network Rules and MTS Network Procedures when accessing, working within and egressing SMTF-S.

10 Suspending the Train Testing Zone (TTZ)

The TTZ may be suspended under specific circumstances, either for emergency/incident situations that require immediate access to the rail corridor or for planned work activities. Any suspension of the TTZ must be agreed upon by both the S2B-PPO and the Train Coordinator. Before the TTZ can be suspended, all test trains operating within the TTZ must be confirmed as fully stopped, shut down, and with pantographs lowered. The Train Coordinator must then verify the status of the trains and confirm to the S2B PPO that the TTZ is safe to access. Once these conditions are met, the S2B PPO can formally suspend the TTZ, permitting access for emergency services or authorised work crews depending on the nature of the suspension.

During the suspension, any person entering the rail corridor must be accompanied by a Qualified Protection Officer (PO), who is responsible for conducting and maintaining a head count of all personnel within the zone. Re-establishing the TTZ requires the S2B PPO to ensure that all personnel are clear of the rail corridor, that UTO gates and station Platform Edge Barriers (PEBs) have been properly secured and locked, and that no equipment has been left behind within the rail corridor. These safety confirmations must be provided to the S2B PPO by the Qualified PO on site.

Following these checks, the S2B PPO must determine whether a new Infrastructure Booking-out Authority (IBA) is required. If no new IBA is needed, the S2B PPO consults with the Train Coordinator and proceeds to re-establish the TTZ. However, if a new IBA is deemed necessary, the S2B PPO must follow the S2B IBA procedure in full before the TTZ can be reinstated. Additionally, the S2B PPO and the Train Coordinator must collaboratively assess whether a Test Train Line Clear is required prior to resuming test train operations, and if so, determine the appropriate train speed for the section. This process ensures that the suspension and re-establishment of the TTZ are managed safely.

11 Fulfilling the TTZ

Once the Test Lead or Engineer, in collaboration with the Train Supervisor, has determined that the Dynamic Train Testing is complete for the designated time period, the Train Supervisor must promptly notify the Train Coordinator. Upon receiving this notification, the Train Coordinator is responsible for organising and confirming the stabling location of the test train(s) with the S2B PPO. After this coordination, the Train Coordinator gives instructions to the Test Pilot to proceed.

The Test Pilot then ensures that the test train(s) are properly stabled at the designated location, with the pantographs lowered, the train(s) fully shut down, and the wheels chocked.

The Test Pilot also confirms that all necessary protections are in place, and that all personnel involved in the Dynamic Testing have safely exited the corridor.

The S2B-PPO and the Train Coordinator are required to meticulously record all details pertaining to the stabling of the train(s), the specific arrangements made for train protection, and the exact time when the Train Test Zone (TTZ) was fulfilled. These records must be documented in a permanent and secure form to ensure accuracy, traceability, and compliance with operational protocols.

Before fulfilling the TTZ, the following conditions must be met:

- Train Keyed out and Pantographs lowered.
- Train Protected with Stop Boards
- Wheels of Train Chocked (2 x Wheel Chocks as per section 5.2 – Train Preparation)
- train testing must be completed, and the test train has stabled.
- all associated protection arrangements e.g., Flashing Red Overrun Marker Lights are removed.
- all workers and equipment are clear of the rail corridor.

When these conditions have been met, the Train Coordinator will contact the S2B-PPO and the MTS PPO to advise that the TTZ has been fulfilled.

12 Safety critical communications protocols

12.1 General requirements

Safety is of utmost importance in this process, all safety-critical communication must be conducted using either recorded phones or MTR-issued recorded Tetra Radios.

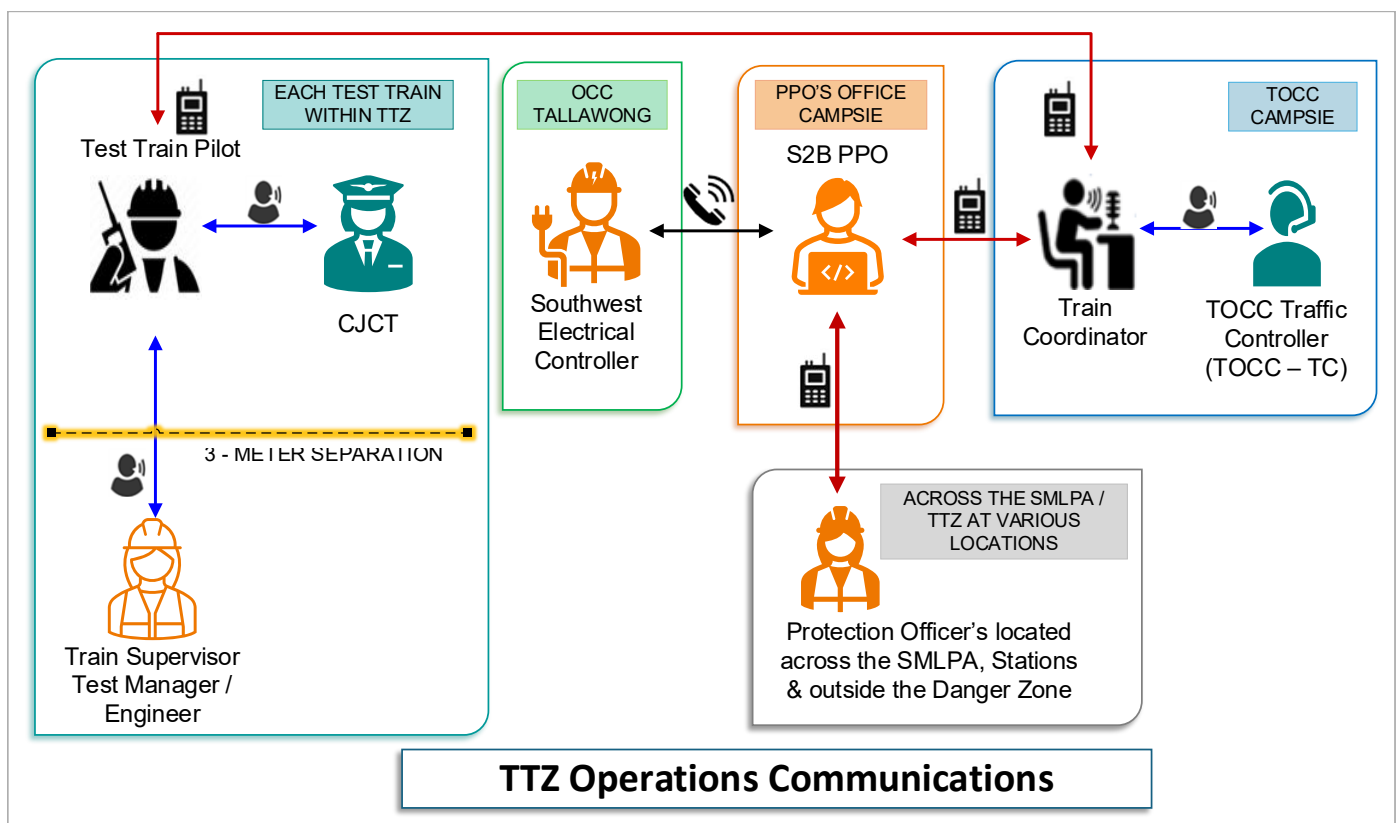
The following roles: S2B-PPO, Train Coordinator, and Test Train Pilots, must use MTR-issued Tetra Radios to communicate within the Rail Operations Group Chat (Radio Channel). This channel is officially designated as a Safeworking channel for Dynamic Train Testing operations.

In the event of a Tetra Radio system failure, safety-critical communications must be conducted via recorded phones to ensure continued compliance and traceability.

For Train Test Engineers and Train Supervisors, all Tetra Radio communications must occur within the DT Group Chats using MTR-issued devices.

Any non-safety-critical communication related to Train Testing and Commissioning within the MTS network must be conducted through non-Safeworking designated Group Chats on MTR-issued Tetra Radios, such as the “Construction” group chat.

The principals of Safety Critical Communications outlined in the MTS Rule ‘MGE 204 Network Communications’ and MTS Network Procedure ‘MPR 721 Spoken and written communication’ remains apart from exceptions below:



The following items should also be briefed prior to each testing session to all involved in the pre- brief:

Communications between the Test Train Pilot and CJC-T

All communications between the Test Train Pilot and CJC-T regarding the movement of the test train must follow Safety Critical Communication protocols and as outlined in the TTZ Procedure. No change is proposed for the Train Testing between SW and MTS Network.

Communication between the Testing Engineers and Technicians.

Unless there is an issue identified or if the test activity requires an interaction, Test Engineers / Technician must restrain from communicating to the Test Train Pilot and CJC-T while the test train is in motion during Testing and Commissioning, or train shunting / transition activities. The communication protocols between Testing Engineers and Technicians on the Test Train remains the same as per the current TTZ Procedure. No changes have been made to this arrangement.

12.2 Emergency Communication

The communication methods provided to enable the initiation and coordination of withdrawal of a test train.

Emergency channel: The use of this channel will allow the person broadcasting to override all other channels on the system.

12.3 TTZ Communication Protocols

Temporary Operation Control Centre (TOCC)

The Temporary Operations Control Centre (TOCC) is located at Campsie for the purpose of Southwest Train Testing during TTZ. Whilst testing outside of Southwest network, an MTS Work on Track authority will be established. During full line possessions the train control will be executed from the OCC in Tallawong. Due to the nature of these testing arrangements the S2B-PPO, Trains Coordinator and the Testing Traffic Controller will be positioned together in the TOCC Campsie

Sydenham to Bankstown Possession Protection Officer's Office (S2B PPO Office)

The Sydenham to Bankstown Possession Protection Officer's Office (S2B PPO Office) is located at Campsie next to the TOCC.

Operation Control Centre (OCC)

During Dynamic Train Testing where an MTS IBA is issued for testing requirements within the MTS M1 Network, control of train movements will be led by the Train Coordinator supported by MTS Traffic Controllers who is situated within OCC, with instructions outlined in the relevant DTT Safe Notice.

During this period, the MTS Traffic Controller must:

- Notify the Train Coordinator of any safety-critical alarms observed on the MTS Network.
- Use the designated Dynamic Train Testing Tetra radio channel to maintain communication with the Train Coordinator.
- Coordinate with the MTS PPO to establish and implement the MTS Local Possession Authority (LPA), or MTS Qualified PO to establish an MTS Track Occupancy Authority (TOA) along with any other required arrangements to support DTT activities affecting the M1 Network, in accordance with the relevant RSRs.

MTS TC is also required to communicate with the MTS PPO for the purposes of establishing and fulfilling (as per relevant RSR's) the MTS Local Possession Authority or MTS Qualified PO for the purposes of establishing and fulfilling (as per relevant RSR's) the MTS Track Occupancy Authority and any required arrangements for the purpose of DTT activities impacting M1 Network

MTS Possession Protection Officer (MTS PPO) or MTS Protection Officer (MTS PO)

MTS PPO will be located within the PPO Office at SMTF-N. The PPO is responsible for communicating with the OCC TC, S2B-PPO) for the purpose of the Train Testing.

Where an MTS Possession is in place i.e., Engineering or Weekend Possession, the MTS PPO will manage the communication protocols as the current MTS Rail Safety Rules and Procedures.

In instances where an MTS Work Track Authority, such as an MTS TOA, is in place, the MTS-qualified Protection Officer will be stationed at the MTS worksite. The Protection Officer will also be responsible for communication.

Using Hand-held Portable Radios

Hand portable radios are to be issued for the purposes of safety critical communication for Train Testing.

There are two configurations for Tetra Radio Group Chats operating on the same frequency across the entire MTS Network and Southwest alignment.

These Tetra Radio Group Chats are divided into two categories:

1. MTS-issued Tetra Radios: Configured for MTS Network Operation Channels
2. MTR-issued Tetra Radios: Configured for Trains Testing and Commissioning Channels, including a Construction Channel.

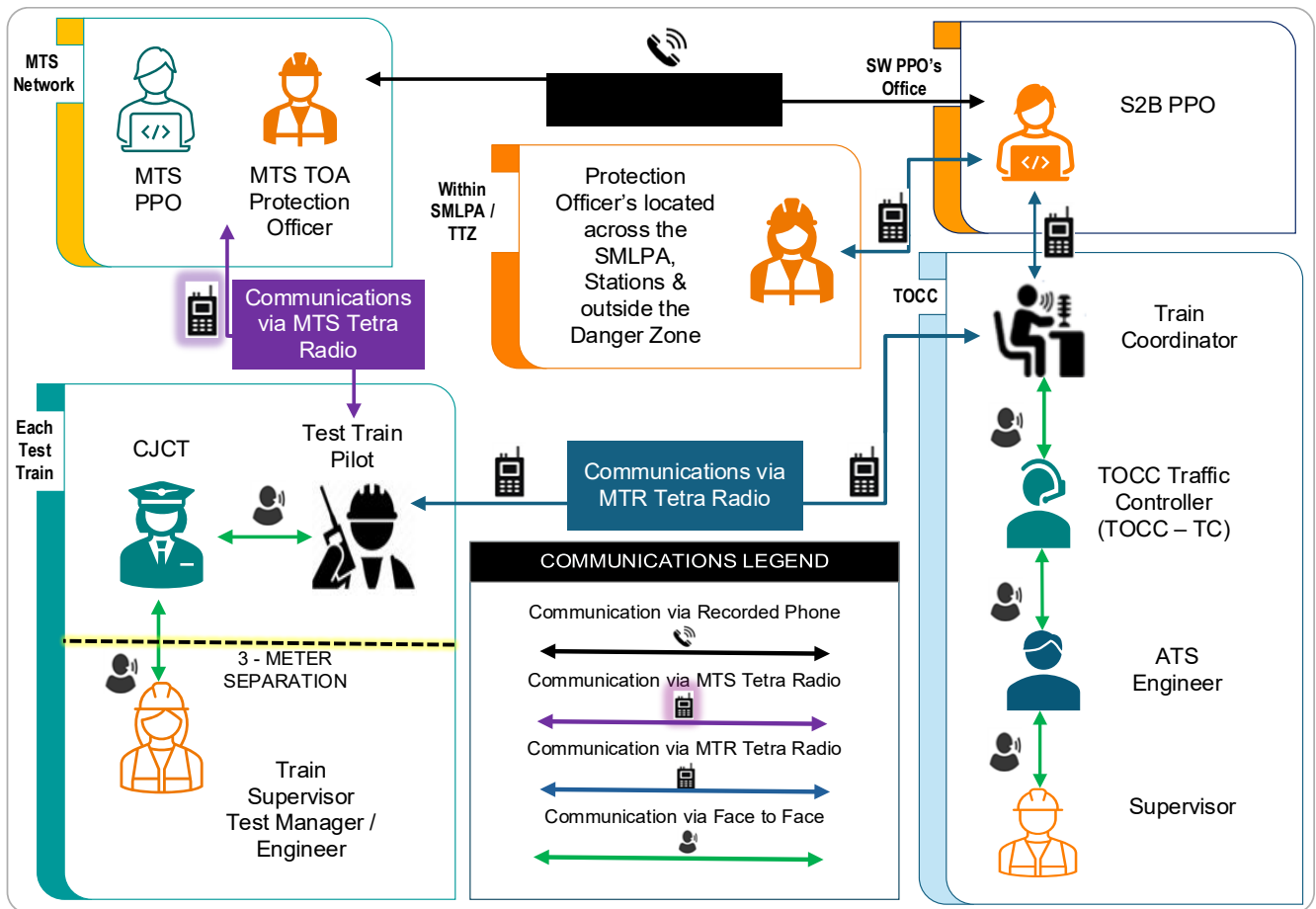
It is important to note that an MTS-issued Tetra Radio cannot communicate with an MTR-issued Tetra Radio, and vice versa.

Rail safeworking personnel requiring communication with staff at various locations, including the Operational Control Centre, MTS Possessions Office at Tallawong, and the Temporary Operational Control Centre at Campsie, MUST carry both an MTS-issued and an MTR-issued radio.

To meet the Interconnecting TTZ requirements, specific Tetra Radio Group Chats have been designated as follows:

- a) MTS-issued radio – Group Chat: “MQP”
- b) MTR-issued radio – Group Chat: “Rail Operations”

12.4 Safety Critical Communication Flow Chart for the TTZ with ATS – CBTC



12.5 Incident & Emergency Management

Train testing incident management refers to the procedures and practices put in place to manage and respond to incidents that may occur during the train testing phase within the SMLPA. The Incident Management Flowchart in Section 16, appendix D outlines the protocols to follow in the event of an incident during train testing in the SM-LPA.

In order to effectively manage an incident, it is important that the Train Coordinator is aware of the train location and movements during the train testing phase. There shall be a clear line of communication between the Train Coordinator and the Test Train Pilot.

Incidents within the MTS Network will be managed consistently with the requirements of the MTS Incident Management Procedure. Incidents within the SW area will be managed as per the S2B Incident Emergency and Crisis Management Plan.

If a fault occurs with the Overhead Wiring (OHW) once it is energised in the Southwest, the S2B Protection Officer (S2B-PPO) must immediately contact to the Southwest Electrical Controller using the designated contact number provided for the Southwest Electrical controller.

Emergency Response Plans

The S2B Incident Emergency and Crisis Management Plan outlines the procedure and process during an incident and/or emergency. In the event of an emergency on the train, the Test Train Pilot is to report the emergency to the S2B-PPO and follow instructions when on the Southwest SM-LPA.

The Emergency Response Plan is in accordance with S2B Incident Emergency and Crisis Management Plan as mentioned below:

SMCSWSW8-JHL-WBK-HS-PLN-000006 S2B Incident Emergency and Crisis Management

During train transfer, if the emergency occurs within MTS Network; the MTS Incident and Emergency Plan must be followed.

The Emergency Response Plan with MTS Network:

- MTS-CSF-PL-35117 - Emergency Management Plan
- MTS-CSF-PL-35116 - Incident Management Plan

12.6 Incident and Emergency Contacts

INCIDENT AND EMERGENCY CONTACTS		
Name	Title	Contact Number
S2B Possession Protection Office Day Shift Night Shift (All Incidents)	S2B-PPO	S2B PPO1: 0458 901 670 S2B PPO2: 0482 472 423
MTS Possession Protection Officer (All Incidents within MTS LPA)	MTS PPO	9854 4552
Joel Blackett (All Incidents)	Senior Manager Rail Safety. Sydney Metro Authority (SMA)	0400 046 940
Alex Chang (Critical Incidents)	Head of HSEQ & Sustainability (MTR)	0423 825 028
MTS Manager Network Control (Incidents with MTS Network)	MTS MNC	02 9854 4888
Jeff Gordon (All Electrical Incidents)	MTS Electrical Network Manager	0437 574 675
Bruno Marques Belloff (All Incidents)	WHS/Rail Safety Operations Manager (MTS)	0429 224 432
Dave Paton (Critical Incidents)	Rail Safety Manager (S2B)	0438 905 293
Vishal Singh (Critical Incidents)	MTS Rail Safety & Systems Manager – Safety, Quality, Risk, Environment & People	0409 840 816
Emmanual Manolis (All Testing & Commissioning Incidents)	Rail Operations Manager (MTR)	0413 846 970
(Issues related to CJC-T Train Crew)	MTS Manager of Network Control	02 9854 4888
ONRSR (Notifiable Occurrence Reporting) 1800 430 888 (24hrs/7 days) SafeWork NSW 131050	SMA & MTS Safety Teams	SMA & MTS On Call Safety Representative (As per Safe Notice)

12.7 First Aid

Rail safety workers who are appointed to be a First Aider must hold a Certificate of Competence in HLTAID003 Provide First Aid (or higher) issued by a Registered Training Organisation. The Trains Coordinator is to ensure that there is an appointed First Aid Officer on the Test Train. A First Aid Kit must be located on the train, known and easily accessible. If anyone falls ill and requires first aid the Train Coordinator and S2B-PPO must be informed immediately.

12.8 CJC-T and Pilot resources

It is expected that there will be 2 rostered CJC-Ts per train and only 1 Test Train Pilot.

To enable future training of CJC-T resources, a CJC-T in development will be allowed access to the test train to gain exposure for route knowledge / route familiarisation and the testing environment.

These trainee CJC-T's will have to have undergone the relevant inductions and not distract the CJC-T or Test Train Pilot whilst undertaking their duties.

Fatigue and hygiene breaks shall be scheduled during Train Testing for the CJC-T and Test Train Pilot as outlined below:

- Minute break every 2 hours testing.
- 30 Minute lunch break every 5 hours testing.

12.9 1500v OHW Switching Program

Switching programs will be managed and conducted under MTS Electrical Safety Rules NWRLOTS-NRT-SWD-SF-FRW-726001. The process for the Electrical Switching to allow for the train testing between CSW and MTS Network will be conducted as per the process outlined in the "Rail Safeworking Procedure, Transfer of Test Trains. Sydenham SMTF-S to SW Corridor - Marrickville)

13 Roles and Responsibilities

The document outlines the specific roles that each individual is responsible for, as well as the tasks and activities that they are expected to complete. It also provides clarity on the reporting relationships and communication channels within the team.

All on-train testing personnel and persons required to attend site in the CSW network must have completed all required worksite inductions and hold the competencies required to complete Train Testing prior to commencing work applicable to their role. The required inductions and competencies are outlined in MTR Effective Safety Critical Communication - A-HS-PR-60079

13.1 Table: – Testing & Commissioning Roles & Responsibilities

Organisation/ Title	Roles & Responsibilities	Location/Res ponsible Organisation
MTR WHS/Rail Safety Operations Manager	WHS/Rail Safety Operations Manager is responsible for: - ensuring that all safety protocols and regulatory requirements are followed during the train testing and commissioning process. - providing investigation support and collecting evidence to support rail occurrences investigation. - arranging post incident Drug and Alcohol Testing and to provide result and outcome to SMA (RIM) & MTS (RSO) nominated representatives	MTR
MTR WHS/ Rail Safety Advisor	MTR WHS/Rail Safety Advisors play a crucial role in ensuring the safety of rail operations and is responsible for: - conducting safety audits and inspections. - providing input into the planning of work in the rail corridor. - investigating railway occurrences as directed by MTS or S2B - conducting risk assessments to identify potential hazards and risks for Train Testing. They must also develop and implement controls to mitigate identified risks. - monitoring safety performance on the railway system and identifying opportunities for safety improvement and eliminate / mitigate safety risks. - coaching and mentoring supervisors and rail safety workers on safety conversations, critical risk reviews and workplace inspections - providing safety advice to management and employees on all matters related to this document. - delivering Toolbox talks on topical safety matters. - recording and submitting Testing Report via MTR Safe System. - monitoring fatigue risk management controls and ensuring that they are effectively deployed. - Acting as the Possession Manager or the Rail Incident Coordinator	MTR
MTS Rail Safety Advisor	MTS Rail Safety Advisor will be responsible for: - conduct safety audits and inspections with MTR Rail Safety Advisor - investigating Rail Safety Occurrences as directed by MTS Safety & Systems Manager - reporting and updating Intelex (MTS Reporting System) regarding Safety Incidents - reporting Safety Occurrence to SafeWork and ONRSR - assisting with Safety Share and Lessons Learnt	MTS

MTR Rail Operations Manager	The Rail Operations Manager is responsible for: - determining the strategy for the Train Testing Zones (TTZ), - coordinating Train Testing Rail movements, and proactively - managing any potential challenges that may surface during the train testing and commissioning phase. Either directly or through a designated representative - assuming the role of supervising the Rail Safety and the overall operational aspects handled by the Trains Coordinator, - ensuring a secure and efficient Train Testing and Commissioning. - rostering and resource planning - scheduling for high-risk inspections & critical risk reviews - organising and requesting access requests for Train Testing - managing Train Passes - compiling Train Testing Commissioning checklist and recording outcomes in MTR Safe system - managing visitors - providing SME support for Safety Risk Management of TTZ - providing support to incident / Emergency Management - undertaking SWMS review	MTR
MTR Engineer	Responsible for planning, executing, and reporting dynamic train testing activities as part of the Testing and Commissioning phase. - Conducts and over-see's dynamic testing of trains for CBTC and UTO systems during the Testing and Commissioning phase. - Validates train-to-wayside and onboard system integration to ensure correct functionality. - Verifies system performance, safety, and reliability against design and operational requirements. - Executes test procedures including functional, performance, and safety-related tests. - Records and analyses test data to identify issues and support troubleshooting. - Works closely with engineering, operations, and safety teams to ensure successful testing outcomes. - Ensures compliance with contractual, regulatory, and technical standards. - Supports documentation for system certification and final handover. - Adheres to safety protocols and risk mitigation strategies during dynamic operations.	MTR
Alstom T&C Manager	Alstom T&C Manager for CBTC or RS is responsible for: - Responsible for scheduling and planning of works - Overall escalation for CBTC and/or RS Lead Testers	ALSTOM

	Responsible to report and escalate to Project Stakeholders	
ALSTOM Lead Tester	The Automatic Lead Tester is responsible for: - Responsible for Alstom T&C team - Responsible for delivering and executing Test activity to approved Test Procedure - Responsible for uplifting test activities to follow test procedure (e.g. Increase of speed) - Responsible for troubleshooting and fault finding of failed test - Responsible for liaising with responsible Alstom Discipline Head for relevant Engineering for pass or failed test - Responsible for implementation of testing restrictions or controls delegated from Alstom Engineering and/or Alstom Safety to T&C - Alstom point of contact for Train Supervisor and Train Pilot - Responsible for asset and system handback to Integrator and operator as required - Reports into Alstom T&C Manager	ALSTOM
ALSTOM ATS Engineer	The Automatic Train Supervision (ATS) Engineer is responsible for: - ensuring safe test environment of automatic train control system - removing GAMA to protect the ends of the TTZ test area. - providing assurances that the Signalling Control Systems are operational across the MTS M1 Network - conducting test scenarios for both ATS and ATC systems in coordination with the Test engineer/s - installing and integrating of ATS systems - conducting testing and commissioning activities to ensure the proper functioning of the system. - troubleshooting of ATS systems.	ALSTOM
MTR Rolling Stock Engineer	The MTR Rolling Stock Engineer is responsible for: - ensuring that the trains are effectively maintained after commissioning. - supporting the Testing & Commissioning Manager to develop a maintenance plan and schedule to ensure the trains are kept in good working condition. - acting as the Site Supervisor to ensure all Train Testing activities are undertaken as planned and scheduled.	MTR
MTR Train Testing Supervisor	The MTR Train Testing Supervisor is responsible for: - overseeing and managing the testing of trains - Conducting pre-work Briefing and Toolbox Box talks - managing testing schedules to ensure trains are tested regularly and in accordance with industry standards. - supervising testing teams either from on train or the	Located within the Test Train <u>3m behind CJC-T and Test Train Pilot</u>

	• S2B PPO Office • ensuring testing equipment is maintained and calibrated properly to ensure accurate testing results. • analysing testing data to identify trends and areas for improvement in the testing process. • communicating testing results to management and other stakeholders to ensure that they are aware of the testing status and any issues that arise. • ensuring that all testing documentation, including reports and logs are accurate and up to date. • recording and submitting Train Testing Report via MTR Safe System • delivering Toolbox – Train Testing & record outcome in MTR Safe System	
MTR Train Coordinator	The MTR Train Coordinator is a qualified safe worker and is responsible for: • implementing the Trains Testing Zone (TTZ) from the Southwest Possession Protection Officer (S2B-PPO) in conjunction with the Metro Trains Sydney (MTS PPO) when testing across Boundaries and across SM-LPA / MTS Work on Track Authority. • receiving the safe implementation of a Trains Testing Zone (TTZ) from the S2B-PPO and confirms 'Line Clear' in the handover documentation (IBA permit form) before commencing testing and checking the correct status of the OHW. • controlling of all testing movements inside the TTZ, • ensuring that no movement authority given exceeds the limits of the testing area inside the TTZ. • liaising with S2B-PPO when the train is required to enter or leave the TTZ area and transition to the SW-LPA area. • communicating with other on-field trains testing and commissioning staff, project managers, and other stakeholders to ensure that all testing and commissioning activities are being conducted safely, effectively, and efficiently.	Located within Campsie TOCC.
Traffic Controller in TOCC (TC-TOCC)	The TC-TOCC is responsible for: • conducting test scenarios for both ATS and ATC systems in coordination with Test Engineer/s • maintaining accurate records of Test Train operations and any alarms or incidents • responding promptly to any incidents or intrusions occurring within the TTZ • checking for the removal of GAMA control to protect the ends of the Test Area in the TTZ • controlling the movement of trains as instructed by the Train Coordinator • Use of ATS to stop all test trains in the event of an emergency	Located within Campsie TOCC.

	liaising with MTS TC for any Safety Critical alarms or Emergencies within the MTS M1 Network	
MTS Manager Network Control (MNC)	MNC is responsible for: - liaising with MTR SW Possession Manager regarding Category A or B Railway occurrences as the RSO and/or any occurrence potential to impact MTS Network Operations. - coordinating with both the MTS PPO and S2B-PPO regarding incidents within the TTZ. - Managing any incidents in the CSW network during testing in collaboration with the MTS PPO, S2B-PPO and the testing Train Coordinator	Located within the Operations Control Centre (OCC), Talla wong.
MTS Rail Safety & Systems Manager	MTS Rail Safety & Systems Manager is responsible for: - review and endorse the Safe Notice for Dynamic Train Testing (DTT) - reporting railway occurrences to ONRSR and SafeWork NSW as the RSO - liaise with ONRSR for notifiable occurrence. - leading Category A & B railway investigations as the RSO - provide support to SMA for safety investigations for notifiable occurrences. - undertaking Ad-hoc audits and inspection on the Test Train activities. - providing Safety Support to MTR Train Testing Team	MTS
SMA Rail Safety Manager	SMA Rail Safety Manager is responsible for: - review and approve the Safe Notice for Dynamic Train Testing (DTT) - reporting railway occurrences to ONRSR and SafeWork NSW - liaise with ONRSR for notifiable occurrence. - leading Category A & B railway investigations. - undertaking Ad-hoc audits and inspection on the Test Train activities. - providing Safety Support to MTR Train Testing Team	SMA
MTS Engineering Controller (EC)	The Engineering Controller is responsible for: - controlling and monitoring the Power Control and engineering sub- systems. - ensuring that the power system and the required sub-systems for train operations are available, stable, reliable, and functioning at all times within MTS Electrical Network. Any system issues that may impact train testing is reported to the MTS TC immediately.	Located within the Operations Control Centre (OCC), Talla wong.
S2B Possession Manager	Southwest (S2B) Possession Manager receives all requests for work, puts into Possession Scope and Resource Sheet and is responsible for: ensuring that all possession work for TTZ is carried out safely and in compliance with relevant regulations and guidelines.	S2B

	- identifying potential hazards, implementing appropriate safety measures. - communicating TTZ possession plans and updates to stakeholders. - managing any issues, problems or conflicts that arise during TTZ possession work. - maintaining accurate TTZ documentation and reporting on possession work - identifying conflicts between requested work - reviewing Safeworking arrangements with S2B-PPO or suitably qualified Safeworking delegate and assigning Job Number.	
Southwest Possession Protection Officer (S2B-PPO)	The S2B-PPO is responsible for: - organising and executing the SMLPA possession - setting up all possession limits and marker boards in the SW area and grants the Train Testing Zone (TTZ) to the Train Coordinator as per the Rail Safety Movement Plan (RSMP) - liaising with the MTS PPO to ensure that the MTS IBA has been issued for the TTZ area. - ensuring 'Line Clear' within SW before granting the TTZ to the Train Coordinator via the S2B IBA Permit Form. - ensuring the OHW isolation and energisation processes are followed and checked before all movements in and out of the TTZ area. - managing the POs to ensure that possession arrangements are set up correctly and do not disrupt adjacent rail services. - implementing safe working procedures, including the use of worksite protection, warning signs etc. - monitoring the SMLPA and TTZ testing area to ensure that all workers are following safe working procedures and that no unauthorised personnel are present in the area. - preparing and responding to emergencies in the SMLPA. - obtaining the assurances from the Qualified Worker that the points have been clipped and set for the train movement. - maintaining accurate records of all rail possessions, including the duration of the possession, the work carried out, and any safety incidents or near-misses. - Authorising train movements in the SMLPA area. - sharing crucial information safeworking protocols with the MTS PPO	Located within the S2B PPO Office, Campsie.
Fixed Worksite Protection Officer	The Worksite Protection Officer role is to protect rail workers from being struck by test train and is responsible for: - managing any unauthorised person from entering the Rail Corridor or within the limits of the TTZ while it is in operation. - communicating with the S2B-PPO and workers working within the fixed worksite outside of the TTZ on the Bankstown Line platforms to ensure the safety of workers who are working within the barricaded fixed worksite.	Southwest

	- monitoring the work zone - ensuring that all workers in the work zone are wearing appropriate personal protective equipment (PPE) such as hard hats, safety vests, and hearing protection. - reporting any safety hazards or concerns regarding Rail Safety to the S2B-PPO. - understand the rail safety regulations and be able to work effectively as part of a team to minimise the risk of accidents and injuries.	
MTS Protection Officer (MTS PO)	The MTS PO is responsible for: - understanding and executing the worksite arrangement of the work on track protection arrangements. - communicating with the MTS PPO / TC - placing worksite protection for the MTS LPA or MTS TOA	MTS Network
Trains Testing Protection Officer	The Trains Testing Protection Officer (TT-PO) is responsible for: - reporting to the S2B-PPO, MTS PPO, MTS TC, and the Trains Coordinator. - conducting safety assessments in compliance with Sydney Metro Rail Operating Procedures, including SM-LPA Rules and Procedures, as well as MTS Rules and Procedures. - adhering to the instructions outlined in this procedure, and the Safe Notice issued for the TTZ. - following instructions from the S2B-PPO and MTS PPO regarding the placement of SM-LPA, TTZ protection arrangements and marker boards (may be placed by Delegate) - ensuring the deployment of TTZ worksite protection in SW (UP/DN Southwest Lines), as well as Overrun Marker Lights on the MSW Up and Down Main Lines. - Safeguarding workers from Rail Traffic (or delegate to Station PO), ensuring their ability to carry out work activities safely and effectively within the worksite. - briefing workers on various aspects of the worksites, including: - locations of safe places. - protection arrangements in place. - safety measures being employed. - extent of the area under protection. - any changes to protection arrangements. - setup, clipping, and securing of points for intended rail traffic movement. - ensuring the safe passage of train movements.	Roaming across the TTZ area
Test Train Pilot	The Test Train Pilot is responsible for: - following all safety critical instructions given to them regarding the safe control of train movements inside the SMLPA by the S2B-PPO, or the Train Coordinator inside the TTZ - relaying all safety critical instructions regarding the movement of the test train to the CJC-T.	Located within the Test Train adjacent to the CJC- T at the operator's

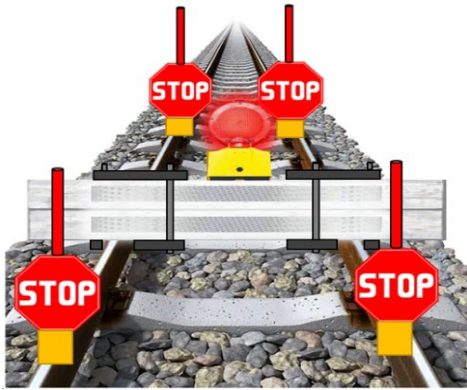
	• following all safety procedures and notices regarding the safe movement of test trains. • maintaining effective communications with all testing personnel to ensure that all tasks are completed safely and efficiently. • ensuring the safety of all personnel on the test train • having and maintaining the required route knowledge for the safe operation of the test train within the limits of the SMLPA and MTS LPA for the TTZ limits • ensuring that the radio system is operative and functioning as intended. • communicating the location of the train on arrival at stations or terminating points to all outside of the train on the MTR Tetra Radio. • ensure that the CJC-T follows through on all safety critical directions and commands and if this is not undertaken, to immediately	console.
MTS Customer Journey Coordinator – Trains (CJC- T)	The CJC-T is responsible for: • following the instructions provided from the Test Train Pilot • operating test trains to ensure that they comply with safety procedures during train testing operations. • having and maintaining the required route knowledge for the safe operation of the test train within the limits of the SMLPA and MTS LPA for the TTZ limits • reporting any train defects, incidents, or emergencies to the pilot	Located within the Test Train at the operator’s console.
MTS Traffic Controller (MTS TC)	The MTS Traffic Controller (MTS TC) is responsible for: • notifying the Testing TC in the TOCC of any Safety Critical Alarms or emergencies in the Northwest/ City, Southwest network via the MTR Tetra Radio immediately • supporting the Manager Network Control in managing any incidents in the NW network during testing in collaboration with the MTS PPO, S2B-PPO and the testing TC in the TOCC • endorsing parts of the MTS IBA for removing and reinstating the CBTC Signalling Control Systems • implementing the MTS LPA with the MTS PPO • monitoring TOCC MIMIC screen (if available) or monitor MTR Train testing TETRA radio. • executing System Checks After Completing the Baseline Rollback Process	Located within the Operations Control Centre (OCC), Tallawong.
Electrical Controller - SCLW	The Electrical Controller - SW is responsible for: • acting as the interim delegated electrical or supervisor operator during testing and commissioning phase, including switching operator/controller and permit officer for HV, 400V AC interface and 1500V DC. This includes. • controlling the power supply to ensure safety and integrity of the SW network.	SCLW Located within Operations Control Centre

	- switching the traction supply when required for operational reasons. - monitoring, regulating, and checking the power supply across the SW network. - switching the power supply off when required - managing maintenance work on interface systems connecting the power supply systems - reporting faults and conduct tests. - authorising proposed maintenance work - handling alarms and power system failures - handling power supply equipment failures - providing technical advice to CC/TC if power system operation would affect plant or human safety. - logging the sequence of events in the daily logbook - completing the shift summary in case of equipment faults - issuing safety documents, i.e., Switching Programs.	(OCC), Tallawong.
MTS Possession Protection Officer (MTS PPO)	The MTS PPO is responsible for: - organising and the execution of the MTS LPA possession - coordinating protection of worksites under an MTS Local Possession Authority. - maintaining accurate records of MTS possessions, including the duration of the possession, the work carried out, and any safety incidents or near- misses. - ensuring compliance with the MTS IBA process and coordinating with S2B PPO before implementing the TTZ. - placing worksite protection for the MTS LPA - authorising test train movements within the MTS LPA to and from the S2B-PPO - preventing unauthorised personnel from accessing the TTZ area. - sharing crucial information safeworking protocols with the S2B-PPO - monitoring the MTS LPA and testing area to ensure that all workers are following safe working procedures and that no unauthorised personnel are present in the area. - preparing and respond to emergencies in the MTS LPA area.	MTS
Customer Operations Lead (COL)	MTS COL responsible for: attending serious incidents within the NW/CSW network as directed by the Manager Network Control within OCC. assuming control of incident site as per MTS Incident command and control structure. They are referred to as “First Responders” as MTS Incident and Emergency Management Plan	MTS Network
Rail Labourer	Rail Labourers are responsible for:	MTS/SW

	Removing and replacing the stop block located between the MTS Network and the SMLPA as directed by the Train Testing Protection Officer.	Network
Visitors on Test Train	The following requirements for visitors on the Test Train: - complete all required inductions unless a waiver is issued - Hold a MTR Rail Safeworking Card unless a waiver is issued - Must follow the instruction of the Train Testing supervisor - Must remain behind the designated area and not interfere with Train Testing activities - Must wear the required PPE required for DTT activities - Must complete the MTR TTZ Visitors form Note: SMA is responsible for approving any requests for visitors on the Test Train. This includes reviewing the number of visitors permitted to be on the Test Train and the waivers required.	SMA

14 Appendixes

14.1 On Track Protection

Temporary Stop Block		Stop Block consists of 2 x Timber Sleepers – Painted White With white. Laid horizontally across the railheads and fixed by 2 x threaded M20 rodding bolted through rail fishplates. Battery operated Steady Red Light placed on Stop Block with STOP sign situated on the approach side of the Stop Block
Possession Limit Board		In addition to being utilised at the Portals and Temporary Stop Blocks: Used to indicate the end of the TTZ boundary. Placed over the Railhead and secured by wingnut to Rail web includes Led, flashing light day and night
End of Test Area Signage		The Flashing Red Light is positioned trackside at the end of the Test Area 20m off the stopping point at the specified platform.

14.2 Use of Mobile Phones during Trains Testing and Commissioning



Limited use of Mobile Phones during Trains Testing and Commissioning



This notice provides detailed guidelines for mobile phone usage by various personnel during test train operations. Here's a brief summary of the key points:

General Rule

- **Mobile phone usage is limited** during test train motion, except in emergencies.
Head of HSEQ & Sustainability

Specific Guidelines

Train Test Pilots and CJCTs

- Restricted from using mobile phones during safety-critical tasks (e.g., piloting, operating).
- Allowed to use mobile phones only when the train is stationary and after completing necessary safety communications.

Testing Engineers / Technicians

- May use mobile phones to support test activities but must not interfere with critical communication between the Train Test Pilot and CJCT.
- Limited to work-related communication (calls, texts, emails, WhatsApp).
- Must get approval for photography, ensuring the flash is disabled.

Test Crew

- Must not have mobile phones to avoid distractions.

Test Train Witnesses and Visitors

- Can use mobile phones but must stay at least one carriage away from Train Test Pilots and CJCTs when the train is in motion or at a stand.
- Photography requires approval, and the flash must be off.



Sign Off	Name	Position	Date
Developed by	Emmanuel Manolis	Rail Operations Manager	25/01/2025
Approved by	Alex Chang	Head of HSEQ & Sustainability	25/01/2025

A-HS-GU-60042

14.3 S2B Worksite Access Request Form



WORK ACCESS REQUEST FORM

Requests must be submitted to the following email address			
Possessionlogistics@jhlorjv.com.au			
REQUESTOR DETAILS			
Name of Person Requesting Access		Company	
Contact Email		Contact Number	
DETAILS OF INTENDED WORKS			
Date of Intended works		Working Hours	
Start Date	End Date	Daily Start Time	Daily Finish Time
Shift Type	☐ Day Shift Only	☐ Night Shift Only	☐ Continuous
Other Networks Affected (if applicable)			
Are the works to be undertaken during project TTZ periods?	☐ Yes* ☐ No	If Yes - What are the proposed controls (No TSOM works allowed during TTZ)	
Are works to be undertaken that have potential to impact the TTZ/DTT?	☐ Yes* ☐ No	If yes - are Detailed risk assessments, methodologies, ENAR and Approved SWMS attached? Is ENAR Required? If yes it must be submitted with this WAR.	
Any Infrastructure Booking/ Recertification Required (Track, OHW, HV Systems, Clearance & Temp Works)	☐ Yes* ☐ No (If in Doubt - Note Yes)	If Yes - What are the proposed works and What is the handback certification method	
Are works to be undertaken under LIVE OHW?	☐ Yes* ☐ No (If in Doubt - Note Yes)	If Yes - Project Manager Sign Off is Required in: Section 2 - Approvals	
LOCATION OF WORKS			
Track/s Affected		To	From
Approximate Worksite Kilometres			
Proposed Starting / Access Location			
SCOPE OF WORKS			
Brief Description of Works	Approx. crew size	Plant Machinery/Rolling stock to be used. (On track and off-track plant)	
Any exclusion zones required? (Provide details of location, track and expected times of exclusion zone)			

Any electrical isolations required? <i>(Provide details of location, track and expected times of isolations)</i>			
Supervisor Name / Shift 1		Contact Number	
Supervisor Name / Shift 2		Contact Number	
Supervisor Name / Shift 3		Contact Number	
Supervisor Name / Shift 4		Contact Number	
Supervisor Name / Shift 5		Contact Number	
End of Access Responsible Person <i>(This person will be responsible to confirm that works are completed, plant and equipment is clear and the conditions of this access request have been met)</i>		Contact Number	
SECTION 2 - APPROVALS			
WORK UNDER LIVE OVERHEAD WIRE APPROVAL			
Approved or rejected		Date	
Rejection Comments <i>(If applicable)</i>			
Project Manager Name		Project Manager Signature	
OFFICE USE ONLY S2B			
Approved or rejected		Date	
Rejection Comments <i>(If applicable)</i>			
Approved by: <i>(Print Name and Sign)</i>		Allocated Job Number	
		WAR Number	

14.4 Trains Testing and Commissioning Checklist

	ITEM
1.	(For SW Trains prior to handover) Is the Rolling Stock movement waiver available and is the key personal aware of the applicable controls?
2.	Are all workers wearing their PPE in accordance with SWMS requirements?
3.	Has everyone signed on and understood the SWMS?
4.	Is the emergency evacuation plan understood?
5.	Has the P.O conducted a clear and un-ambiguous pre-work briefing and have all Train Testing and Commissioning tasks been understood?
6.	Has the P.O given the team the opportunity to ask questions?
7.	Do all workers have their RIW card & have they completed their MIRS & ESR-2 & assigned to their RIW qualifications profile? (P.O to check during sign on brief)
8.	Have the roles & responsibilities, including supervision, been clearly stated, and agreed during the pre-start brief?
9.	Have workers been briefed on the applicable Safe Notice? Does the P.O, Train Pilot & CJC-T have a copy of it if available?
10.	Has the Track been inspected if required? <i>i.e.: Rd Test Track at SMTF-N Yard</i>
11.	Did the CJC-T receive a brief to only take instructions from the Train Pilot
12.	Has the Train Pilot & CJC-T's Mobile Phone been confirmed switched off or switched to silent mode?
13.	Has it been briefed that only the CJC-T & Train Pilot on-board the required Train Set is to be in the vicinity of the Train Attendant Console while the train is moving?
14.	Are there any defects of the train to report during inspection by the Alstom Engineer / Technician? Has the Train Pilot walked the train to confirm chocks are removed?
15.	Was it observed that the CJC-T only took instructions from the Train Pilot during testing?
16.	Is the CJC-T and Train Pilot using aspect calling effectively through the communication assigned and used with each other during testing?
17.	Has the CJC-T Followed instructions from the Train Pilot about: - Train movement requirements - Instructed Speed and Train Operation from the TO / Pilot

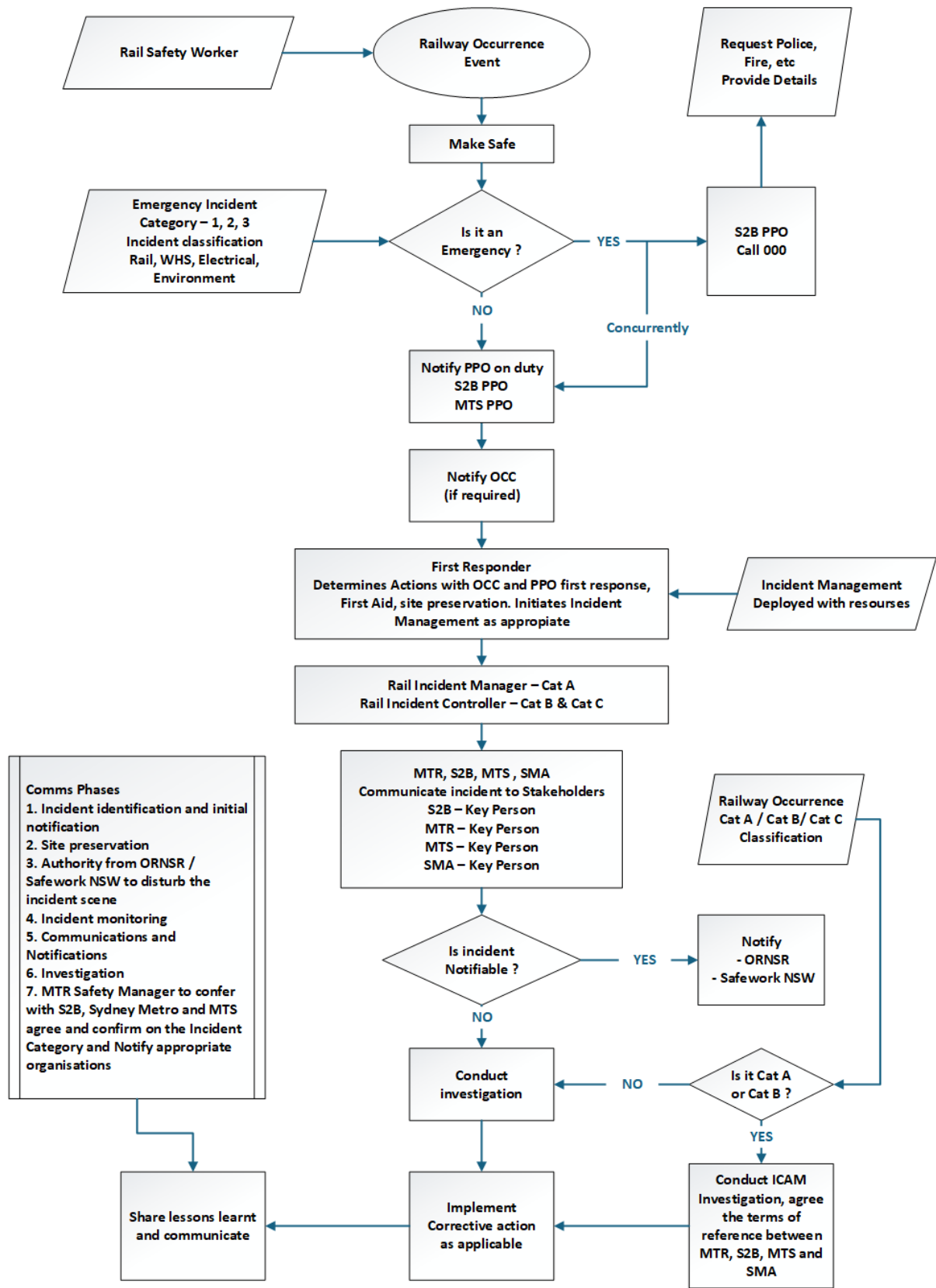
18.	Has the CJC-T and Train Pilot proceeded through the following? • PPI set at STOP without authority. • Stop Board • Dock Marker Board • Worksite limits (Worksite Marker Boards) • Exclusion zone
19.	If required, the only communications regarding Train Pilot & Testing Engineer are to be conducted either. a) While the train is stationary (preferred), or b) Over the 2-way Radio, or c) Prior to the Test been conducted a face-to-face comms brief discussion to be done for clear comms.

14.5 Incident Management Plan – City & Southwest (CSW).

Incident Management within SW will be managed as per the following:

- Incident Management Plan - SMCSWTS2-MTR-CSW- PM-PLN-000296.

14.6 Dynamic Train Testing Southwest - Incident Management Flow Chart



SMCSW-RS-FM-60149

14.7 Southwest Testing & Commissioning Matrix

[illegible]

15 MTR Test job role, MTR - Southwest Dynamic Train Testing

The **MTR Test Train Pass** is an official form of identification issued to individuals involved in Train Testing activities. Possession of this pass is a mandatory requirement for anyone conducting work related to Train Testing. Issued by the MTR Training Team and recognised by the project, the pass ensures that all personnel engaged in Train Testing possess the necessary competencies, skills, knowledge, experience, and required inductions to perform testing activities safely and effectively.

Application and Validation Process

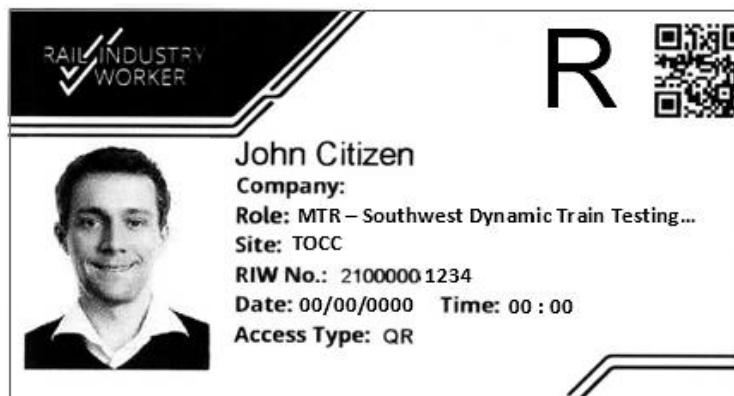
The MTR Platinum Test Train Pass can be obtained through an application link provided by the MTR Training Team. Before the pass is uploaded to an individual's Rail Industry Worker (RIW) profile, the applicant must undergo a validation check to confirm completion of all required inductions and competencies relevant to the Southwest project. Additionally, applicants must hold a valid medical assessment and an MTA RIW Card. Please allow up to seventy-two (72) hours for the MTR Training Team to verify all inductions and competencies.

Pass Validity and Compliance

The MTR Platinum Test Train Pass has an expiry date and must be renewed before it expires. It is the responsibility of the Rail Safety Worker to ensure their pass remains valid and up to date.

Scanning at the RIW Kiosk within TOCC is mandatory. Upon successful validation of competencies, the individual will be issued an RIW sticker, which must be worn visibly at all times during Dynamic Train Testing.

The Train Coordinator and MTR Train Supervisor reserve the right to deny participation in Train Testing activities to any Rail Safety Worker who does not meet the required standards.



15.1 Southwest Dynamic Train Testing RIW Job Role Inductions and Qualifications

The following Inductions and Qualifications are required to hold a valid RIW Job Role for Southwest Dynamic Train Testing.



Southwest Inductions - Dynamic Train Testing – MTR RSW Card

RIW Requirements			
- Valid Category 1, 2 or 3 Medical signed by an Authorised Health Professional (AHP). A list of AHP's can be found on the Rail Industry Worker site https://www.riw.net.au/authorised-health-professionals/#find-an-ahp - Construction Induction (White Card) (34845), or (24099), or (24624), or (24100), or (24101), or (30092), or (24102), or (24103) or Certificate Work safely in the Construction Industry GROUP (69915 or 69916). - Statement of Attainment – TLIF2080, or TLIF0020, or TFLIP208A, or TLIF2080B, or TLIF2080C Safely Access Rail Corridor or Qualified Statement of Attainment TLIF2080 – Safely Access Rail Corridor			
RIW Job Roles	RIW E- Learning	Additional Requirements	
- Around the Track Personnel - MTS – Qualified Worker - TfNSW – Operator - ARTC – Operator - ARTC – Electrical Compliance - TfNSW – SM – (Role Specific or SSJ) **TBA by S2B)	- MTR HSEQ Induction EL142 - MTS – Metro Introduction to Rail Safety (MIRS) EL151 and MTS – Electrical Safety Awareness (MESA) EL152 - MTS Network Induction (EL175) - MTR – SW Dynamic Train Testing Induction (EL199) or SW TTZ F2F Training - Sydney Metro Orientation Training (SMOT) 82009a All e-learnings can be accessed on the workers RIW e – learning Portal	Certificate of Competency (COC) or Statement of Competency (SOC) to be emailed to Sonal Arekar - riw.admin@mtraustralia.com.au	
Station	Requirements	Inductions	Site Contact
Port Botany to Campsie (ARTC)	- RIW Job Role - ARTC Operator And Electrical Safety Compliance - RISI - Statement of Attainment - Medical (CAT 3/ 2/ 1) and Drug and Alcohol Test	- ARTC National Contractor Induction ** - ARTC Electrical Safety Induction * - ARTC Corridor Access Induction - Port Botany to Campsie ** https://artc.csod.com/Login/render.aspx?id=defaultclic – Induction link (Click on Sign up now) and complete the above 3 inductions. - Upload the copy of the certificates on RIW under the *National Competencies and **Network-Based Competencies. (competencies as mentioned above with Asterisk) - No Face-to-Face Induction Required.	In case you are not able to login or sign-up contact Phone 07 3185 3940
SSJ induction Transition by S2B - Current requirement			
(S2B) – Sydenham to Bankstown	RIW job role - S2B – Sydenham to Bankstown	LOR - S2B Project Site Induction (EL195)	Site enquiries - dafydd.evans@jhlrv.com.au
Previous Requirement – Still in use till complete transition happens			
SSJ (Pegasus)	- Completion of Workforce Development Survey (WDIP) on this https://form.iotform.co/71760564774869 - Create Pegasus Profile. Complete the ID check (Depends on Australian or Overseas Documents. If it is Australian, then Driver License and Medicare Card required. If Overseas Document, then 100 points (Refer attached Document RSW-Manual-ID-Check-Process) documents must be attested by JP (Justice of Peace) mandatory requirement). - Pay Pegasus Subscription. - Upload White Card, SMOT, Driver license, Pegasus Consent Form (Refer attached Document Pegasus_CAAF_20190628), Medical (CAT 3/ 2/ 1), RISI or Safely Access Rail Corridor, Workforce	- Add site on Pegasus Profile - Laing O'Rourke – SSJ, Sydney Metro – Project, Transport for NSW Site - Then add Roles under Manage Roles - TfNSW - Sydney Metro - Sydenham Station and Junction (SSJ) Project, TfNSW - Sydney Metro – job specific role (e.g. Project Engineer), TfNSW – Operator, Around the Track Personnel - RSW National. - Upload all the competencies as required under roles. - Select the Course Selector and Submit. - No Face-to-Face Induction Required.	Site enquiries - ssj_inductions@jhlrv.com.au

Testing personnel must comply with any updated rules and procedures contained in documents marked 'Latest' as their revision.

16 Reference Documents

#	Document Reference Number	Title
1.	SMCSW-RS-PR-60022 version 3	Introducing a Train Testing Zone (TTZ) Southwest Corridor for Train Testing and Commissioning Activities for DTT Stage 1 (Limited)
2.	SMCSW-HS-PR-60060 revision B.	Transfer of Test Trains MTS Network to SWM Corridor – Marrickville for DTT Stage 1 (Limited) - SMCSW-HS-PR-60060 revision B.
3.	SMCSWTS2-MTR-CSW-TC-MAN-026626. Rev 05	Temporary Control Centre (TOCC) Testing and Commissioning Ops & Coms Procedure – Rev 05
4.	SMCSW-RS-RG-60148	Southwest Testing & Commissioning Matrix
5.	A-HS-PR-60079	MTR Effective Safety Critical Communication
6.	A-HS-FM-00678	MTR Incident Management Responsibility Matrix
7.	SMCSW-RS-FM-60149	MTR DTT Southwest - Incident management flow chart
8.	A-HS-GU-60042	Limited use of Mobile Phones during Trains Testing and Commissioning
9.	Alstom BLIM000020176_EN1_Coupling	Operation Manual Rescue Operation
10.	Alstom EHS-WMS-005	Rail Vehicle Movement Procedure
11.	Alstom 0000168033 _Rev 7	Train movement checklist
12.	MTS SWD-OP-MAN-720121-C-ROM	Rail Operations Manual
13.	SMCSWSW8-JHL-WBK-HS-PLN-000006	S2B Bankstown Incident Emergency and Crisis Management Plan
14.	SMCSWSW8-JHL-WBK-HS-PLN-000004	S2B Sydenham to Bankstown – SWM3 Security Management Plan
15.	SMCSWSSJ-JHL-WSS-PC-PLN-000125	S2B – JHLORJV Possession Management Plan
16.	SMCSW-RS-RG-60148	Testing & Commissioning Competency Matrix
17.	SM-24-00066434	Project Site Card Access Requirements procedure
18.	Infrastructure Booking Authority (City) MTR-ARS-PR-71207	Sydney Metro Infrastructure Booking Authority (City IBA)
19.	NWRLOTS-NRT-SWD-SF-FRW-726001	MTS Electrical Safety Rules

20.	SM-18-00058353	Sydney Metro Rail Operating Conditions Procedure
21.	SM-18-00058177	Sydney Metro Rail Operating Conditions Standard
22.	SM-24-00230239	Sydney Metro Minimum Rolling Stock Requirements Standard for Infrastructure / Construction Vehicles (Southwest Section)
23.	SM-20-00046300	Sydney Metro Rolling Stock Acceptance Procedure
24.	MTS MPR 721	Spoken and written communication
25.	MTS MRF 003	Infrastructure Booking Authority Form
26.	MTS MWT 312	Infrastructure Booking Authority
27.	MTS MWT 302	Local Possession Authority
28.	MTS MPR 700	Using a Local Possession Authority

Rail Safeworking Procedure. Train Testing Zone TTZ for Testing and Commissioning Activities within the Southwest Corridor. SMCSW-RS-PR-60022 version 4

Final Audit Report

2025-06-12

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"Rail Safeworking Procedure. Train Testing Zone TTZ for Testing and Commissioning Activities within the Southwest Corridor. SMCSW-RS-PR-60022 version 4" History

-  Document created by Sarah Murray (sarah.murray@metrotrains-sydney.com.au)
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