# Scheduling and Train Control Protocols

These protocols will govern the performance of train Scheduling, Train Control and associated Incident Management services by the Scheduling and Train Control Officers in respect of train operations on QR's infrastructure.

## *Definitions*

**Access Co-ordination Plan**: a document developed by Network Access in consultation with the Scheduling and Train Control Officers which details the operational and interface requirements for a specific railway operator and which contains all the information of which the Scheduling and Train Control officers need to be aware for them to perform the train Scheduling, Train Control and associated Incident Management services they are contracted to supply to Network Access. A railway operator's Capacity Entitlement will be defined in their access agreement and provided to the Scheduling & Train Control Officers via their Access Co-ordination Plan.

**Capacity:** the capability of a specified section of rail infrastructure to accommodate train services within a specified time period after providing for QR's reasonable requirements for the exclusive utilisation of that specified section of rail infrastructure for the purposes of performing activities associated with the repair or enhancement of the rail infrastructure, including the operation of work trains.

**Capacity Entitlement**: a railway operator's entitlement under an access agreement to operate a specified number and type of train services over the rail infrastructure within a specified time period and in accordance with specified Scheduling constraints for the purpose of either carrying a specified commodity or providing a specified transport service.

**Daily Train Plan ('DTP')**: collectively, for a particular day, the Train Schedules for all train services operating on QR's infrastructure together with the track possessions and train paths allocated to infrastructure maintenance providers. The MTP will form the basis of the DTP. The MTP may be varied on a daily basis to form the DTP, in accordance with the Capacity Entitlements of railway operators under current access agreements, to meet business requirements, project and maintenance works and/or any other planned or unplanned event which may lead to a requirement for alteration[1].

**Incident**: any rollingstock derailment, rollingstock disablement or breakdown, accident, collision or any other unplanned occurrence on the infrastructure, which causes or could cause:

- injury to any person;
- damage to property;
- environmental harm; or
- a loss to process including a cancellation by QR of any train movement.

**Incident Management**: the reporting, management and investigation of Incidents occurring on or affecting the rail infrastructure.

[1] Such events might include industrial action, force majeure events or Incidents

**Master Train Plan ('MTP')**: collectively, the Train Schedules for all train services contracted to operate on QR's infrastructure from week to week, together with the track possessions and train paths allocated to infrastructure maintenance providers for that same time. Specifically, the MTP will detail:

- the maximum Capacity of the network, based on a train service with the characteristics of the predominant train service operating on the relevant infrastructure;
- the contracted Capacity Entitlements of operators operating on or planning to operate on the relevant infrastructure, including train service paths, pathing determination and railway operator specific requirements;
- maintenance windows / possessions; and
- the available Capacity of the network.

It includes reference to the MTP for the entire QR network as well as for discrete sections of the QR network. The MTP is controlled and managed by Network Access and will be updated as required.

**Out-Of-Course Running:** any occurrence where the movement of a train service differs from the Train Schedule for that train service as provided in the DTP.

**QR's Information Systems:** those systems used by QR for recording the planned and actual performance of train services operating on QR's rail infrastructure, including but not limited to, consist specification, running times and the occurrence and management of Incidents.

**Scheduling**: the process of determining arrival and departure times for train services at the origin, intermediate locations and at the destination of a journey to meet the requirements of individual railway operators and the integration of such times with the other planned and unplanned activities necessary for the management of QR's infrastructure. Scheduling also includes entering these times into QR's Information Systems.

**Scheduling and Train Control Officers**: those QR staff who will provide Train Control and Scheduling services for and on behalf of Network Access.

**Third Party Operator**: means a railway operator other than QR.

**Train Control**: the control of train movements and of all other rollingstock operations in accordance with the DTP, QR's safety management system and other pre-determined procedures and of any activities, including track possessions and other infrastructure maintenance activities, affecting or potentially affecting such train movements or rollingstock operations. In addition, Train Control includes:

- recording train running times in QR's Information Systems;
- reporting Incidents occurring on the infrastructure;
- Scheduling;
- management of Incidents from within the control centre; and
- exchanging information with railway operators.

**Train Schedule**: the arrival and departure times for a particular train service at specified locations as contained in the MTP and / or the DTP and entered into QR's Information Systems.

## *1. Capacity Entitlements*

Network Access is responsible for the analysis, determination and allocation of network Capacity. Network Access will not involve those areas within QR's operating groups, responsible for the commercial arrangements associated with the provision of QR train services, in analysing network Capacity or determining the Capacity Entitlement of a potential or actual Third Party Operator.

## *2. Preparation of the MTP*

The MTP will be prepared as follows:

**2.1** The Group General Manager, Network Access will allocate train paths in the MTP in accordance with the Capacity Entitlements of all railway operators on the network**.**

In allocating train paths, the Group General Manager, Network Access will seek outcomes that both address the requirements of railway operators and achieve the efficient utilisation of network Capacity whilst recognising the needs of infrastructure maintainers.

The Group General Manager, Network Access will seek to optimise the sharing of Capacity on the network and encourage co-operation between railway operators, and between railway operators and Network Access, to improve overall service, and provide overall service patterns and connections which meet the needs of users.

**2.2** To facilitate the effective maintenance, renewal and development of the network, the Group General Manager, Network Access will allocate train paths in the MTP to allow for the provision of maintenance and enhancement of the infrastructure.

**2.3** The Group General Manager, Network Access will provide the MTP to the Scheduling and Train Control Officers who will input the Train Schedule details contained therein in QR's Information Systems.

**2.4** The Group General Manager, Network Access, has the ability to change the MTP to accommodate new and / or additional traffic on the network or agreed variations to Capacity Entitlements of existing railway operators, provided the contracted Capacity Entitlements of other existing railway operators are preserved.

**2.5** In order to optimise the performance of the network for all railway operators, changes to the MTP will be developed in consultation with railway operators and representatives from service providers to Network Access, including Infrastructure Services Group, and the Scheduling and Train Control Officers.

**2.6** The Group General Manager, Network Access, will make the final determination on all changes to the MTP.

**2.7** The Scheduling and Train Control Officers will implement the requirements of the MTP through the DTP on a day-to-day basis in accordance with relevant Access Co-ordination Plans, QR's safety management system and other pre-determined procedures[2].

[2] Such procedures might include QR's environmental management system, and operators' loading requirements and rolling stock plans.

## 3. *Preparation of the DTP*

In developing the DTP the Scheduling and Train Control officers will deviate from the MTP to accommodate:

- variations in the day-to-day business requirements of railway operators in accordance with the terms of their Access Co-ordination Plans;
- infrastructure maintenance and enhancement works on the network; and
- any other planned or unplanned event[3] that may lead to a need to deviate from the MTP.

## 4. *Train Control & Scheduling Protocols*

The following protocols will determine the procedures for:

- preparing the DTP; and
- providing Train Control in accordance with the DTP.

**4.1** Except as provided in:

- a railway operator's Access Co-ordination Plan;
- clause 4.4 with respect to the resolution of conflicts in the event of Out-Of-Course Running; or
- clause 4.5 with respect to Incident Management;

the contracted Capacity Entitlement of a railway operator must be adhered to.

**4.2** The fundamental objective of Train Control will be to achieve on time running for all trains and on time commencement and closure of track possessions. This objective will be considered in the context of the critical objectives of different types of traffic on the network. These critical objectives are as follows:

| | |
|---|---|
| ▪ passenger | to arrive and depart from all stops in accordance with a published timetable |
| ▪ freight and livestock | to achieve scheduled network entry and exit times, and to arrive and depart from any other service delivery locations scheduled |
| ▪ coal and bulk commodities[4] | to achieve their contracted Capacity Entitlement in terms of an overall number of scheduled trains within a nominated period |
| ▪ construction and infrastructure | to perform planned tasks as scheduled |

### 4.3 Train operation and communication practices

In respect of each railway operator on the network, the Scheduling and Train Control Officers will implement the train operation and communication practices provided in each railway operator's Access Co-ordination Plan.

[3] See footnote 1.

[4] Including coal, sugar, minerals, fuel, grain, sugar, acid and fertilizer

### 4.4 Resolution of conflicts in the event of Out-Of-Course Running

**4.4.1** The identity of a railway operator will, of itself, play no part in a decision to alter that railway operator's Train Schedule**.**

**4.4.2** The decision making process for resolving conflicts in the event of Out-Of-Course Running shall be managed in accordance with the Traffic Management Decision Making Matrix in Attachment 1 and the objectives set out in clause 4.2.

### 4.5 Incident Management

Subject to the following, in respect of each railway operator on the network, the Scheduling and Train Control Officers will implement the Incident Management practices provided in each railway operator's Access Co-ordination Plan.

The Scheduling and Train Control Officers may deviate from the contracted Capacity Entitlements of railway operators in the event of an Incident. In such circumstances, the following protocols will apply:

**4.5.1** The identity of a railway operator will, of itself, play no part in a decision to deviate from a railway operator's contracted Capacity Entitlement in the event of an Incident on the network;

**4.5.2** The General Manager Operations, Coal and Mainline Freight Group or the General Manager Metropolitan Freight & Regional Operations, Metropolitan & Regional Services Group or the Manager Operations, Citytrain, Metropolitan and Regional Services Group, whichever is appropriate, may authorise the departure from or suspension of the protocols relating to the resolution of conflicts arising from Out-Of-Course Running (specified in clause 4.4 above), for the purpose of restoring normal operations after the occurrence of an Incident. Such an authorisation may be granted on a case by case basis after consideration of all the relevant facts and where possible, consultation with affected railway operators; and

**4.5.3** Train services should return to normal and the relevant protocols for resolving conflicts that arise from Out-Of-Course Running (specified in clause 4.4 above) should apply as soon as reasonably possible after an Incident.

## *5. Implementation monitoring and reporting*

**5.1** The Manager Network Operations, Network Access will be responsible for implementing these Scheduling and Train Control protocols on behalf of the Group General Manager Network Access, including the development of the MTP and the negotiation and administration of agreements with service providers for the provision of Train Control services to Network Access.

**5.2** The Manager Network Operations, Network Access must be advised of every instance in which a departure from or suspension of the protocols relating to the resolution of conflicts in the event of Out-Of-Course Running occurs. This advice will note the reason for the departure or suspension, whether such was authorised in accordance with clause 4.5, and detail the impact that the departure or suspension had on operator's contracted Capacity Entitlements. Network Access must receive such notification within 24 hours of the departure or suspension.

**5.3** In addition, a weekly report will be produced and forwarded to the Manager Network Operations, Network Access, containing a consolidated list of every instance where a departure from or suspension of the protocols governing the resolution of conflicts arising from Out-Of-Course Running has occurred. This report will note the reason for the departure or suspension, whether such was authorised in accordance with clause 4.5, and detail the impact that the departure or suspension had on operators' contracted Capacity Entitlements.

**5.4** The General Manager Operations, Coal and Mainline Freight Group, the General Manager Metropolitan Freight & Regional Operations, Metropolitan & Regional Services Group and the Manager Operations, Citytrain, Metropolitan & Regional Services Group, will prepare and provide the Manager Network Operations, Network Access with weekly exception reports generated in respect of identified key performance indicators. These key performance indicators will include, in respect of each operator, the:

- Percentage of allocated train paths used;
- Causes of cancelled train paths;
- Number of delays outside of agreed range specified in Capacity Entitlement;
- Causes and extent of delays; and
- Causes and extent of below rail faults (including track, overhead, signals etc).

# TRAFFIC MANAGEMENT DECISION MAKING MATRIX

| | | | **Train A** – Current Status | | |
|---|---|---|---|---|---|
| | | Train A | Train Running "On Time" | Train Running "Ahead" | Train Running "Late" |
| | Train B | Objective | On Time Exit | On Time Exit | 1. Lose no more time<br>2. Make up time<br>3. Hold the gain |
| **Train B** – Current Status | Train Running "On Time" | On Time Exit | Scheduled Cross | A or B<br>Rule 2 | B<br>Rule 3 |
| | Train Running "Ahead" | On Time Exit | A or B<br>Rule 2 | A or B<br>Rule 2 | B<br>Rule 3 |
| | Train Running "Late | 1. Lose no more time<br>2. Make up time<br>3. Hold the gain | A<br>Rule 1 | A<br>Rule 1 | A or B<br>Rule 4 |

Rule 1. Train B may be given priority on condition Train A will still meet "On Time" objective or as otherwise provided for in Note 5.

Rule 2. Both trains must meet their "On Time" objective.

Rule 3. Train A may be given priority on condition Train B will still meet its "On Time" objective or as otherwise provided for in Note 5.

Rule 4. Give priority to the train where performance indicates it will lose least or no more time and even make up time and hold the gain.

Notes: The Traffic Management Decision Making Matrix is used as follows:

1. Train A and Train B are competing for priority in relation to traffic management decision by the Train Control, for example network entry, a cross or pass with another train in single line territory.
2. The controller compares the current "status" or performance of both trains in terms of running "On Time", "Ahead" or "Late".
3. The decision is given to the train and rule indicated at the point of intersection.
4. Passenger trains may be given priority over other trains in contravention of the above rules if specified in the relevant Access Co-ordination Plans.
5. Train running "On Time" may be delayed and preference given to the train running "Late" if it is reasonably expected that the consequences of such action will be less aggregated consequential delays to other trains than otherwise would be the case, provided the second train is running "Late" due to no fault of that train's operator.