



OpenTrack Training Program

The course is divided into 3 segments, see the Course Outline for more detail.

Segment 1	Monday
Segment 2	Tuesday Morning
Segment 3	Tuesday Afternoon to Friday

Time	Monday	Tuesday	Wednesday	Thursday	Friday
0900 - 1030	<ul style="list-style-type: none"> - Development of Railways in UK and USA with emphasis on Signalling and Safeworking concepts. - Early history – driven by the market demands of the industrial revolution - Role of military command and safety systems - Tokens and timetables - Recognising the fallibility of humans - Modern system developments 	<ul style="list-style-type: none"> - Current Safeworking Practice in Australia and New Zealand (Part 1) - Ordinary Staff (Token) - Electric Staff (Token) - Staff and Ticket - Train Order/ Track Warrant - Rail Vehicle Detection (Track Circuit and Axle Counter) 	<ul style="list-style-type: none"> - OTTM 2 – Version Control - OTTM 3 – Elements of OpenTrack Infrastructure - Importance of version control in simulation analysis - Awareness of what is material in determining the extent of detail covered in the OpenTrack input phase 	<ul style="list-style-type: none"> - OTTM 5 – OpenTrack Signalling – Hands On - Absolute and Permissive Signals and OpenTrack equivalents - Virtual Signals - Performance signals - Stopping commands etc. 	<ul style="list-style-type: none"> - OTTM 9 – Advanced Courses and Timetables – Joining and Splitting Trains – Creating regular interval timetables – Hands on - Creating a scenario for combining two trains and splitting a train into two components that continue their journey
1030 – 1100	Morning Break	Morning Break	Morning Break	Morning Break	Morning Break

1100 - 1230	<ul style="list-style-type: none"> - Railway Physics – The laws of physics as applied to railway operations and as used by OpenTrack - Basics of force, mass, acceleration, energy, power, velocity, speed, friction & gravity - Comparative advantages for rail of steel wheel to steel rail operations 	<ul style="list-style-type: none"> - Current Safeworking Practice in Australia and New Zealand (Part 2) - CTC - ARTC ATMS - ETCS - Level Crossings (includes predictor type) 	<ul style="list-style-type: none"> - OTTM 4 – Constructing the OpenTrack Infrastructure – Track (Part 1) Hands On - OpenTrack Preferences - Line Speeds - Track and Line names - The double vertex - Vertex Inspector - Edge elements 	<ul style="list-style-type: none"> - OTTM 6 – Routes, Paths and Itineraries – Hands On - Determination of an OpenTrack Route - Entry into Occupied Block - Low Speed areas, Overlaps, shunting limits etc. 	<ul style="list-style-type: none"> - Simulation Exercises and operational analysis – Hands On - More advanced simulation and exercises in performance analysis - Train Diagrams - Message analysis
1230 - 1300	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break
1300 – 1430	<ul style="list-style-type: none"> - Rolling Stock Basics - Characteristics of Diesel Electric and Electric traction - Tractive Effort Curves - Hotel Power - AC V DC Traction motors 	<ul style="list-style-type: none"> - OTTM 1 - An Introduction to OpenTrack - Operational principles of OpenTrack Software - Purpose and application deployment of the OpenTrack Rail Network Simulator 	<ul style="list-style-type: none"> - OTTM 4 – Constructing the OpenTrack Infrastructure – Track (Part 2) Hands On - Connector elements - Station vertices - Power areas 	<ul style="list-style-type: none"> - OTTM 7 – Rolling Stock – Engines and Trains - Hands On - Engine Data input requirements - Train composition, as individual wagons or as combined trailing load 	<ul style="list-style-type: none"> - Simulation Exercises and operational analysis – Hands On - Single line performance with ‘follow on operations’
1430 – 1500	Afternoon Break	Afternoon Break	Afternoon Break	Afternoon Break	Afternoon Break
1500 – 1630	<ul style="list-style-type: none"> - Australian Rail Operations – including sources of information, Curve & Gradient Diagrams - Access providers, - TOC information sources - Railway topography, differences between steam era and modern era alignment 	<ul style="list-style-type: none"> - OTTM 1A – Structure of OpenTrack software - Software structure and advantages of combined data base and continuous calculation <p>(OTTM1 may extend into 1500 session)</p>	<ul style="list-style-type: none"> - OTTM 4 – Constructing the OpenTrack Infrastructure – Track (Part 3) Hands On - Manual and electronic data transfer - Use of Excel 	<ul style="list-style-type: none"> - OTTM 8 – Courses and Timetables – Simple Simulation Hands On - Establishing the course and timetable requirements for a single train run - Making a simple point to point single line multiple train timetable 	<ul style="list-style-type: none"> - Revision - Q & A - Help Desk contact details - Wrap Up

Course Location: Plateway Pty Ltd Conference Room at Unit 6, 3 Sutherland Street, Clyde NSW (approximately 100m from Clyde Station).

The last train in time for the 0900 start arrives at Clyde at 08:42. The train departs Wynyard at 08:07 P3, Town Hall at 08:11 P2 and Central at 08:15 P18.

Trains depart Clyde for the City at 15 minute intervals on the quarter hour at the completion of the course day.