



CLIENT

Rail Services Alliance

LOCATION

Melbourne, Australia

SYSTEMS AND CAPABILITIES

- Automation Engineering, Systems Engineering, V-model
- Application Lifecycle Management tools
- Interface management
- Detailed design – hardware and software
- Factory acceptance testing, site acceptance testing
- Integration of CCTV, security systems and PLCs
- Disaster Recovery System
- Simulation and Training System
- VMWare

TECHNOLOGIES

- WinCC OA
- Siemens S700 PLCs
- Linux OS - Redhat

PROJECT SUMMARY

The Rail Systems Alliance (RSA) is responsible for design, installation, integration and commissioning of control, communications and signalling systems for the Metro Tunnel Project (MTP). RSA will be the first brownfield, high-capacity signalling project to be based on Communications Based Train Control (CBTC), to roll out in Australia. The MTP consists of twin nine-kilometre rail tunnels, five new underground stations and interchanges between Melbourne's existing train and tram networks.

SCOPE OF WORK

Systems Engineering Services

Synertec's principal responsibility as Systems Engineers is to apply the Systems Engineering V-Model and all relevant management plans, thus ensuring the specified system both meets the true needs of the MTP and that it is built as specified.

Synertec engaged design leads across systems and disciplines to define subsystem boundaries and elaborate interface requirements, as well as derive requirements from various inputs including Human Factors, RAM and EMC analyses.

Key achievements include acceptance of requirements specifications for Final Designs and improved change control through systemised tracking of downstream change impacts.

Sunshine Signal Control Centre CMS

The contract involves the design, implementation and commissioning of a new SCADA system, providing operator monitoring and control of the Sunshine Signal Control Centre building equipment. The design scope includes HMI graphic design, alarm management, data structures, system architecture, network architecture, SCADA server configuration and PLC programming. The system integrates PLCs, CCTV (IP video cameras) and security systems, to provide control and monitoring of mechanical, hydraulic, electrical and fire systems and equipment.

The Sunshine CMS additionally serves as a proof-of-concept for the MTP CMS, which will provide operator control and monitoring of the whole new rail line.

Key challenges include delivering to a changing construction program, with dependencies on external civil and infrastructure works, whilst ensuring zero-downtime of critical infrastructure.