CASE STUDY ›

FIBRE OPTIC SERVICES NORTHCONNEX TUNNEL PROJECT

PROJECT OVERVIEW

NorthConnex is a nine-kilometre tunnel that links the M1 Pacific Motorway at Wahroonga to the Hills M2 Motorway at West Pennant Hills.

SCOPE OF WORK

RSGx were tasked with verification testing of the fibre optic network. Many of the network services are arranged in rings which rely on these device links to be connected correctly in a chain through multiple locations to obtain connectivity.

There are upwards of 757 links on the NorthConnex fibre optic network. Including for example –

- Device level ring (PMCS) has 32 rings with 285 nodes
- TMCS access layer has 22 rings with 314 nodes
- Fire communications system consists of one ring with 63 nodes
- Mobile phone communications system has 32 nodes in a star typology
- Tunnel lighting system has 19 fibre link panels in a ring/bus typology
- HV protection has 14 fibre links
- Various MNCS distribution layer links between the 7 substations
- Radio rebroadcast system has 15 nodes in a star typology

During commissioning phase, this scope became highly complex due unreliable power sources, equipment / devices awaiting installation and requirement of temporary by-passes and fault finding. Other factors like outages and re-patching of fibre optic links had to be coordinated and require swift resolution as to not affect any other ongoing works.

SOLUTION

RSGx's team consisted of five specialized fibre optic engineers who controlled and maintained the fibre optic network whilst performing testing throughout the entire tunnel.

In doing so our team accumulated all fibre optic cable and termination schedules and rearranged the data into a practical format for patching, testing, by-passing and fault finding. This provided the construction team with an end-to-end fibre optic splice schedule for Q/A and completions.

ACHIEVEMENTS TO DATE

The NorthConnex fibre optic network has being fully handed over with RSG contributing to the following:

- All 32 DLR rings patched and commissioned
- All tunnel MNCS Access layer rings patched and commissioned
- All of the fire system ring commissioned
- All Mobile Phone connections patched and end to end tested
- All HV protection has 14 links patched and end to end tested
- All MNCS Distribution layer links between the 7 substations and MCC patched and commissioned

CLIENT

LLBJV
(Lend Lease Bouygues Joint Venture)

SERVICES PROVIDED

INSTALLATION
COMMISSIONING
COMPLETIONS

SCOPE

FIBER OPTIC SERVICES

INDUSTRY

INFRASTRUCTURE

LOCATION

SYDNEY, NEW SOUTH WALES

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