

Sydney Harbour Tunnel Upgrade Case Study

Project:

Upgrade AM/FM radio rebroadcast system, providing audio break-in capabilities, compatibility for the future DAB+ digital radio upgrade, and performance monitoring capability in the Sydney Harbour Tunnel, NSW.

Customer:

Trantek MST and the Sydney Harbour Tunnel.

RFI's Role:

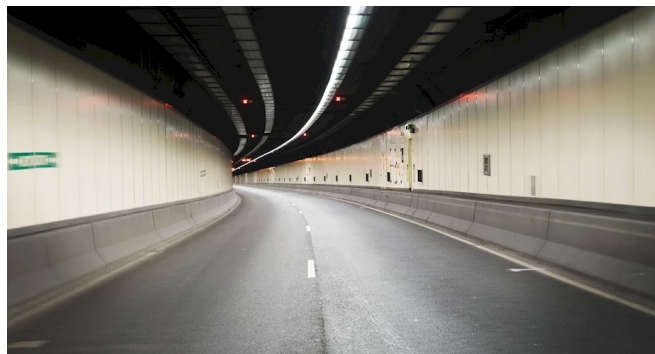
Design and installation of the upgrade to the intelligent transport system.

Job Overview:

Trantek MST selected RFI to provide the rebroadcast system, based on RFI's experience and expertise with this technology. RFI delivered a flexible and feature-rich rebroadcast system, utilising a comprehensive suite of their products and services.

Key Components:

- Rebroadcast AM Repeaters.
- Rebroadcast FM Repeaters.
- Broadband multi-carrier band Couplers.
- The rebroadcast system provides compatibility for the future addition of the rebroadcast of DAB+ digital radio.
- A custom manufactured RF Change-Over Unit was incorporated within the design, enabling switching between the redundant subsystems, either manually or automatically.
- Performance monitoring of the radiating cables at both ends of both tunnels - implemented to continuously monitor the performance of the system and contribute to the switching control of the system redundancy in the event of a system fault condition.
- Fibre optic cable is used to link the equipment items between the various installation locations.



"We chose RFI because of their proven technical, manufacturing, installation and integration capabilities. RFI has proven extremely easy to work with, quickly understanding the technical requirements of Trantek MST's fault resilient architecture and integrating and where necessary manufacturing custom components to achieve a truly satisfying solution." said Trantek MST Managing Director, Mr Lionel Ascone.

"They have provided the Sydney Harbour Tunnel with an upgraded rebroadcast system that has met the customer's operational requirements, whilst also providing a feature-rich capability that allowed us to incorporate it into our fault-resilient intelligent transport control system."

"RFI performed well within the often challenging multi-disciplined environment that exists in a major project, and has delivered their system to the project on-budget – assisting Trantek MST to deliver another successful project to its customers."

Trantek MST was tasked with the design and installation of an upgrade to the Sydney Harbour Tunnel intelligent transport system in NSW, Australia. The Sydney Harbour Tunnel is one of Sydney's primary transport routes, with busy vehicular traffic using the tunnel 24 hours a day, 7 days a week.

The AM/FM radio rebroadcast system is a relatively minor, but vital, component of the overall total intelligent transport system not only to maintain the rebroadcast of AM and FM radio stations within the Tunnel, but also to ensure that vital incident management capabilities can be maintained in the event of a sub-system failure.

An audio break-in capability allows pre-recorded or live audio announcements to be inserted into the AM and FM rebroadcasts to notify drivers of incident information via their car radios.

Trantek MST sought a partner who could design, install and commission the rebroadcast system upgrade as a turnkey sub-contractor.

As well as meeting the stringent operational requirements, Trantek MST needed a partner with the experience to handle the challenges of working on one of Sydney's busiest roadways.

Trantek MST selected RFI to provide the rebroadcast system, based on RFI's experience and expertise with this technology. RFI delivered a flexible and feature-rich rebroadcast system, utilising a comprehensive suite of their products and services, including:

- RF surveys
- System design
- Equipment manufacture
- Integration
- Factory acceptance testing (FAT)
- Installation
- Commissioning
- Site acceptance testing (SAT)
- Coverage testing

Project Management

RFI believes in flexible, responsive and transparent relationships with clients. So during this project, RFI's project manager actively liaised with Trantek MST and Sydney Harbour Tunnel personnel. Working closely with Trantek MST and their customer allowed several unexpected issues that arose during the project to be addressed and resolved with minimal impact to the customer's operations and tunnel motorists.

