

CASE STUDY

Murray & Roberts

BACKGROUND

Murray & Roberts is South Africa's leading engineering, contracting and construction services company. Due to the nature of their business, Murray & Roberts operates in remote and rugged areas of the country with operations dispersed within all conceivable segments of the construction industry. Having so many sparsely located operations inhibits the use of remedial technologies to fulfill their IT and telecommunications requirements.

T-Systems was appointed as Murray & Roberts' outsourced technology and communication advisor. T-Systems engaged Comsol in order to implement a strategic partnership to fulfill Murray & Roberts' telecommunications requirements for the remote areas where incumbent operators are unable to land their technologies. The services that Comsol would render would have to range from Serial to Metro-Ethernet connectivity and support triple play services.

THE SOLUTION

Comsol built a licensed 200Mbps full duplex redundant microwave ring around Gauteng offering 99.999% link availability. The decision to build the ring utilising licensed RF spectrum was made due to the high levels of RF interference in the ISM band measured in and on the outskirts of Gauteng.

High speed ISM microwave backhaul circuits were deployed to extend MPLS functions to new remote switching/aggregation nodes in semi-rural areas near concentrated activity sites such as Carltonville and Rustenburg/Mooiooi. Metro-Ethernet speed ISM last mile circuits were and are deployed between the aggregation nodes and the end user node. MultiPoint access cells are deployed at large sites with multiple operations.

CHALLENGES

The major challenge facing the deployment of circuits in the remote areas is the vast distance that needs to be covered between the remote nodes and the T-Systems or Murray & Roberts PoP's (Points of Presence). Comsol has, however, through its incumbent High Site contracts and the construction of towers, been able to complete circuits utilising the minimal amount of links possible, resulting in efficient routes offering minimal points of failure.

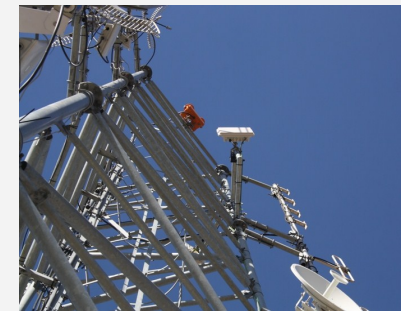
Due to the proliferation of WISP's (Wireless ISP's) in metropolitan areas, it has been challenging to establish circuits offering true QoS within the saturated ISM bands. In these instances Comsol leverages on its IECNS license in order to provide circuits using licensed radio frequency spectrum, thus ensuring a true CIR (Committed Information Rate) service.

CONTACTS

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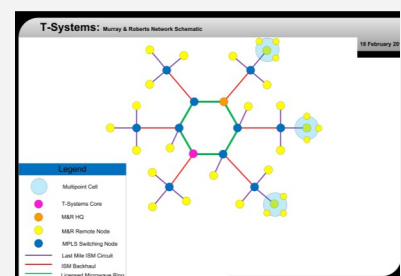
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Motorola integrated radio installation



Motorola PTP 600 integrated RF Microwave radio



Network schematic for the Murray & Roberts installations

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CHIEF BENEFITS OF PROJECT

Entities such as Murray & Roberts were used to receiving second rate communication services when operating in remote areas. Comsol and T-Systems design all circuits uniformly, no matter where they terminate, to offer 99.999% link and system availability. The proliferation of faster and more reliable services deployed by Comsol and T-Systems within the Murray & Roberts environment has allowed them to deploy systems and processes previously only available in head office environments. Remote users are now able to make calls, e-mail, video conference and access their database material off-site.

Due to their success, Murray & Roberts have had to establish site office operations within short notification periods. Their legacy means of communications for newly established operations would be via GPRS/EDGE/3G if reception at the site location was available. Comsol has been able to deploy Metro-Ethernet services to any of their locations requested thus far within 2 weeks, which has increased efficiency and productivity significantly.

Commercial Benefit:

- Comsol sells the communication circuits to T-Systems at a fixed monthly rate under its "Build – Own – Operate" portfolio. This has resulted in predictable budgeting by T-Systems and the Murray & Roberts IT department as they are not subject to Mbps rates which can typically be exorbitant in remote areas such as these.

Enablers:

- IPT: T-Systems deploys an IP PBX gateway at the remote nodes and distributes VoIP handsets to the Murray & Roberts users. This allows the users to make calls via the central IP PBX in Bedfordview, utilising the Comsol supplied communication circuits. Internal On-Net calls within the Murray & Roberts MPLS network are free, resulting in free internal telephonic communications. Breakout calls are made via the central IP PBX in Bedfordview
- Data: Users are able to access their SAP/CRM databases, e-mail and other critical business applications
- Video Conferencing: Users are able to establish video conferences on site, between the site and head quarters as well as contractors located anywhere across the globe

FUTURE GROWTH

The bespoke network has specifically been designed to cater for ad-hoc node additions. Multi-port switches have been deployed at all the High Sites and the backhaul, backbone and last mile links have the ability to be upgraded through the implementation of license keys.

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SUMMARY OF PRODUCTS

- Proxim MP8100
- Proxim QB8100
- Proxim QB11
- Motorola PTP300
- Motorola PTP500
- Motorola PTP600
- MRV FSO (Free Space Optics)
- Dragonwave Horizon Compact



Installed lightning/power surge arrestors