



## Providing communications for a vital infrastructure project in a remote location with extreme weather.

### The Challenge

Main Roads WA was in the process of constructing a sealed road to link the inland town of Tom Price with the coastal hub of Karratha, eliminating the hazards of a long stretch of unsealed road. Providing a reliable internet service and communications system during construction in an extremely remote location and extreme weather conditions was essential to the safety and efficiency of the construction process.

### The Solution

Pivotel rapidly rolled out a business nbn™ Satellite Service using its VSAT (Very Small Aperture Terminal) two-way satellite ground station. The system has met all the client's communications needs and exceeded their expectations, proving itself reliable in extreme heat, wind and rain and at a reasonable cost.

“

The main thing we have taken away from this is that the system we are using now will become the only system we will look to use in the future for work sites such as Karratha Tom Price Road Stage 3.

”

- Jarryd Mann  
A/Project Manager  
Karratha Tom Price Road  
Stage 3

## The Technical Challenge

The Pilbara Region of WA has been a hub of the mining industry for many years, yet its remote location has continued to make communications and transport both major challenges for industry and residents.

The upgrade of the Karratha Tom Price Road was seen as vital to improve safety and efficiency for road users and to create social and economic opportunities for the local community and broader Pilbara region.

Main Roads WA required an efficient, reliable and cost-effective communications system for its temporary construction base that could endure extreme heat, wind and rainfall.

“As our project site is located approximately 120 km south of Karratha, there is no existing cellular service within a 100 km radius. As such there is no conventional way to maintain effective comms,” says Acting Project Manager Jarryd Mann.

“Coupled with the temporary nature of the project (6-8 months only) it was difficult trying to establish a cost effective, yet useable communications solution whilst on site... Due to our location, the external equipment had to be to a standard that could endure regular 50+ degree celsius temperatures as well as wind speeds exceeding 70 km/h. Our operational requirements require that we have a comms link at all times, so there was no room for substandard equipment or installation.”

## The Technical Solution

Pivotel was able to rapidly supply a business nbn™ Satellite Service connection using its VSAT technology to the main construction office, which then fed the entire communications system via Wi-Fi.

“The on-site installation and setup was completed in short order and to a very high standard, which has provided us with trouble-free communications ever since,” says Jarryd. “And the service, I may add, is comparable to my FTTN (Fibre To The Node) nbn™ connection I have at my personal residence.” The system has proven itself efficient and reliable in the most extreme weather conditions and has provided a critical communications link throughout the construction process. “Pivotel were excellent with their communication and providing us with updates as to the status of the operation,” says Jarryd.

“The quality of the service provided as an end product is the most pleasing aspect to date. To be able to have comparable communication ability where we are compared to a major hub like Karratha or Port Hedland is simply astounding and definitely far exceeded my expectations. Our staff members on site have found the system very simple to use with no issues whatsoever.”

## About Main Roads WA

Main Roads are responsible for delivering and management of a safe and efficient main road network in Western Australia. The Australian (\$248m) and Western Australian (\$62m)

## The Outcome

For Main Roads WA the experience has proven that a remote location and extreme weather conditions need not be obstacles to effective communications during major projects. “The system Pivotel has provided has been fantastic in allowing us to maintain effective communication without hindering the pace we work at,” says Jarryd.

“The system is still functioning as well today as it was when it was installed. It has endured some pretty horrific weather so far – namely extremely hot temperatures, gale force winds and large amounts of rain.

The service actually provides a better solution, both functionally and financially, than that implemented by our head contractor on site, who have made many comments as to how our system appears to be superior to theirs and for a much-reduced cost than they pay, so it is always nice to hear that your system is envied by others.”

## The Hardware

### business nbn™ Satellite Service

The business nbn™ Satellite Service utilise a VSAT (very small aperture terminal) to transmit and receive data from the nbn™ satellites.

### The VSAT system consists of:

- Outdoor unit: 0.74m antenna with 4W transceiver.
- Indoor unit: Gilat Gemini-e modem designed to enable high-speed enterprise broadband internet services with protocol optimisation, application acceleration, compression and the highest levels of transmission security features.

governments have committed a total of \$310m for the completion of the Karratha-Tom Price Road, Stages 3 and 4.