

Design, Supply, Installation & Commission of AM Broadcast Station

Client: United Nations Development Programme
Location: Malakal, Palau
Scope: Design, Supply, Installation and Commission of AM broadcast station

Brief:

The United Nations Development Programme (UNDP) is a global organization that works to eradicate poverty and improve the living standards of people worldwide. The Division of Media and Information Services (DMIS) is a division within the UNDP that focuses on providing information and communication services to UNDP offices worldwide. In 2020, UNDP contracted Jaggard to undertake the design, supply, installation, and commissioning of a replacement AM radio service to provide coverage for Palau and its surrounding islands to give enhanced disaster awareness.

Scope of Works (SOW):

The project involved the design, supply, installation, and commissioning comprising of:

45-meter high, 1200mm triangular face mast radiator complete with guy line and base insulators to withstand hurricanes.

The mast painted to FAA aviation standards.

A buried copper earth mat with security fence.

Antenna tuning unit (ATU) with feeder and data cabling + a comprehensive grounding system to the AM and FM transmission.

An airconditioned Tx shelter with sun canopy including an emergency equipped studio room.

Nautel 5kw AM Transmission system with Program Input Equipment rack with supplementary passive and active Studio Program Input Equipment.

Studio-To-Transmitter link installed with a high-performance 5Ghz Giga-link for remote access.

FM antenna system complete to suit the existing 1KW Transmitter.

Remote monitoring for remote control.

Sweep Test measurement for STL, AM, and FM Antenna systems and RF Field Strength measurements



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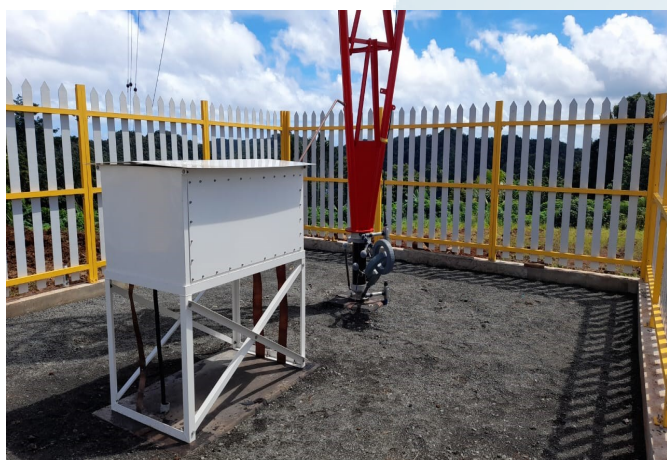
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Constraints:

The safety of the public, installation crew, and client was paramount while maneuverability was constrained. The tower was installed on a hilltop in and amongst casava farmers, only after negotiations with the Right of Way and compensation for local farmers we were able to undertake the works.

The Government of Palau over the past years, has correctly, introduced mandatory regulations on all construction works where soil erosion leads to water pollution. This required the temporary installation silt traps throughout the earth mat system.

Covid also caused unforeseen logistical problems to both materials and installation, however through careful planning however these delays were mitigated.



Result:

Jaggard's engineering team designed and fabricated the AM broadcasting system.

Jaggard oversaw UAE fabrication of both the mast structure, the equipment and ATU shelter all of which were shipped from the UAE to Palau.

Since site construction, the island has endured some strong hurricanes, no damage has been reported.

The initial goal of the project was to cover the entire archipelago of Palau which covers approx. 600 km radius. But after the RF field strength measurement and series of reports received, it is confirmed that the medium wave signal is reaching up to Northern Thailand in the northwest (approx. 4200 km) and as far as New Zealand in the southeast (approx. 6000 km).



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