Transtel

VIZNET in Telecommunication

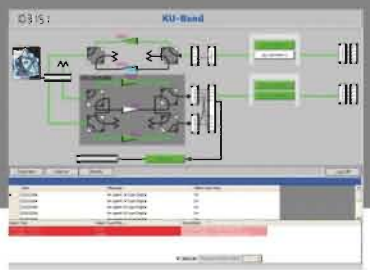
VIZNET delivers a Satellite Earth Station Monitoring Solution

The Challenge

To use Adroit as the Human Machine Interface (HMI) in a satellite base-station monitoring application - a non-traditional market for an industrial SCADA. The main challenge of the project was understanding the unique requirements of the industry and developing the protocol drivers to talk to the monitoring equipment. Instead of PLC's, modems, amplifiers, tracking equipment were the controllers of the process. Once this was achieved Adroit's object-oriented architecture allowed the application to be developed with relative ease.

The Solution

The solution was a standard VIZNET User Interface that was retrieving real-time and historical data from an Adroit Agent Server. All modems, LNA's (low noise amplifier), SSPA's (solid state power amplifier) and tracking systems where integrated to with custom written reusable interface drivers. All future expansion requirements were taken into consideration during initial design.



Private Telecommunications Network (PTN) operator, Transtel, is amongst the largest in the Southern Hemisphere, and its satellite network encompasses the transmission of data, voice and bank services locally and abroad. Keeping abreast of new trends and remaining on the cutting edge of technology is important to maintaining a stable reliable network. "The operator had an existing teleport that had to be upgraded as the tracking system and other equipment became obsolete," says Mike Stevenson, proposal manager for earth station systems supply company Comscience. The company was awarded the tender to replace and upgrade the satellite dishes and ensure effective monitoring of the Ku and C-Band satellite antenna dishes. These satellite antennas transmit data for Transtel throughout sub-Saharan Africa. Although Comscience considered implementing an international specialized monitoring system it was decided the local support and development capability of the Adroit Technologies company would ensure a happy customer. VIZNET was chosen as the user interface of choice due to the fact that in future a web enabled client would be required. VIZNET is developed using the .NET framework. The Services Oriented Architecture (SOA) ensures scalability and interoperability.

Data security and protection is achieved through encryption and compression combined with a security model integrated with MS Active Directory. Integration with Visual Studio allows more advanced users complete flexibility and freedom when developing integrated applications. All future requirements could be easily accommodated on the flexible open platform.

The Adroit Agent Server was used to monitor and control the C-Band and KU-Band RF (Radio Frequency) of. The SCADA controls part of the hub, SSPA (Solid State Power Amplifier) system, uplink power control, up and down converters, and the LNA switch (Low Noise Amplifier). It also controls the antenna's tracking system, keeping the narrow beams focused on the satellite to ensure robust and reliable communications. Monitoring functionality includes the ability to monitor and retrieve system up-time in order to check reliability, communications performance graphs, event logs and also alarm logs. For example the Adroit SCADA monitors RF output power of the SSPA which is displayed in a graph for the operators to monitor.

"Transtel needed software to monitor the RS system. In addition, Adroit also agreed to write the necessary drivers to communicate to the interface hardware along with the graphical user interface (GUI) development. The system is up and has been running very, very well. The stability of the product and local support of Adroit has justified our decision and we are pleased with the outcome of the project." - Jacobus "Proffie" Groenewald, chief engineering technician for Transtel

VIZNET Information Portal

Data Management, SCADA, HMI & Industrial Communication

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