

Petro-chemical Industry Uses Hytera

Hytera TETRA System Serves South Africa Petro-chemical Company

User
Sasol, South Africa

Market segment
Oil & Gas

Project time
2013

Products
17 DIB-500 base stations
4 DMX-500 switching nodes
Automatic vehicle location
TETRA voice and data recorder
Dispatcher

Solution features

- Customer-specific TETRA mobile radio systems at the Sasolburg and Secunda locations
- Robust voice and data communication
- Secured mobile radio connection through redundant system design
- Gateways to the public telephone network.



Background >>

Due to the scarcity of petroleum resources, large coal-to-liquid and gas-to-liquid plants(CTL and GTL) were created in South Africa from the 1950s onwards. The plants are used to produce fuels, as well as to provide basic materials for the chemical industry. The Sasol company is a market leader in this area with two large facilities situated in Sasolburg and Secunda in the Free State of South Africa in the North East of the country. Coal is exploited over a large area and partially highly explosion-prone substances are also processed.

Customer Demands >>

Given the nature of Sasol's activities, it is essential for the maintenance of effective operations that a safe working environment and good monitoring of machines and personnel is provided. Coal mining and processing in Secunda, as well as gas processing in Sasolburg, each consist of a complex sequence of different automated process steps. An error in one of these steps leads to an interruption of the processing chain and, as a result, to potentially enormous losses. A communication system with high voice quality for safe and efficient work is required.





Hytera TETRA Solution >>

Hytera has been working with Sasol from 2006 and Sasol chose to install a Hytera TETRA mobile radio system in 2013. Extensive redundancy was built into the system elements to guarantee trouble free, continuous radio coverage and capacity, even at peak loads. External applications can be easily connected to the TETRA mobile radio system with multifunctional A-CAPI interface. Powerful SCADA (supervisory control and data acquisition) system was provided to transmit the information via SDS using the TETRA infrastructure.

The four DIB-500 base stations at Sasolburg and 13 DIB-500s at Secunda are connected to the two DMX-500 switching nodes at both sites via ring structures. As a result, continuous mobile radio coverage is ensured over the entire 4,000km² company site in Secunda. Both locations feature several base stations that are located outside of the company's sites. This allows the network to reach employees, or the company's own fire crew, who live outside the sites in emergency situations.

Highlights of Solution >>

The mobile radio system at the larger of the two locations, Secunda, shows an enormous operational performance during peak loads: up to 52,000 calls are made every day. In this case, 8,900 subscribers, 800 call groups and 110 fleets are registered in Secunda.

In the process, different call priorities guarantee an effective communication that is tailored to the situation. As the communication demand increased, particularly during the annual maintenance period, Hytera has been continuously expanding and optimising the mobile radio system. A wide variety of different applications supplement the scope of the radio functions provided by the ACCESSNET-T system. Radio calls are recorded and played back using the TETRA voice recorder. For every recorded call, including the group calls, extensive information such as time stamp and subscriber information is stored on the network log.

The user-friendly interface and implemented search function enables users to call up previous connections. The AVL/GIS functions ensure an increased safety at the company site through the localisation of handheld and vehicle radios.



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