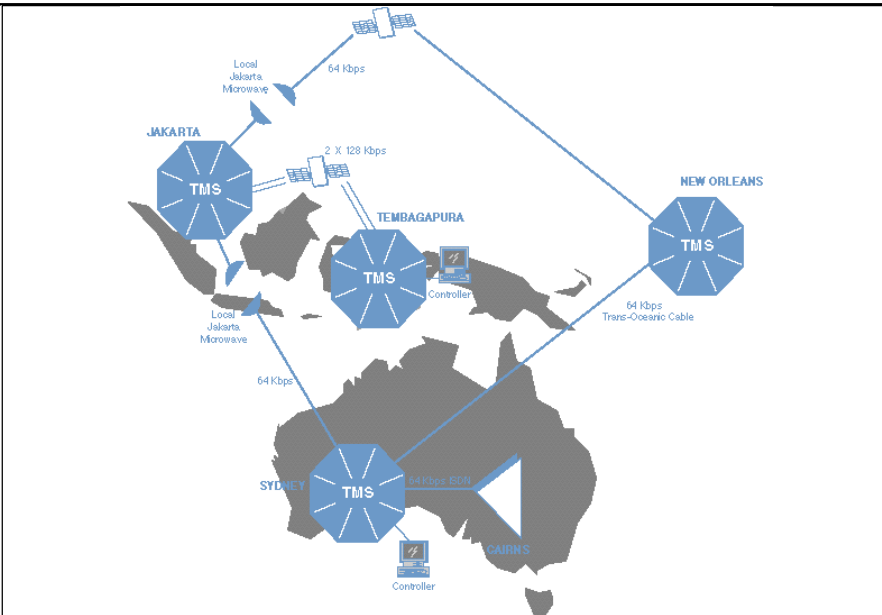# CUSTOMER PROFILE

Freeport McMoRan/Multinational

OVERVIEW

For the last 25 years Freeport McMoRan, a $1.6 billion global natural resource company, has been working with the country of Indonesia through its mining subsidiary, Freeport Indonesia. The country was determined to develop large mining interests after large reserves of copper and gold were discovered in the late 1980s. Because of this momentous event, Freeport McMoRan became one of the world's largest producers of copper ore. Freeport McMoRan is headquartered in New Orleans, with a corporate office in Jakarta, Indonesia. Purchasing offices are located in Singapore and Cairns, Australia. The mine and its operations center are located in the remote Irian Jaya region of Indonesia. In order for this diverse organization to succeed in its goals, a cohesive communications network was a fundamental requirement.

CUSTOMER'S CHALLENGE

D.D. Scarabin, Superintendent of Communications Systems, stated the issue aptly when he said: "Reliability and a high level of quality were, of course, major objectives, since the mine resides in some of the most rugged territory on Earth. To reach Tembagapura, a single 102 kilometer road was built from the swamps on the south of the island up into the Jayawidiaya mountains, where a town of 12,000 inhabitants is located. Although the telecommunications infrastructure is improving, existing digital services in Indonesia are limited and quite expensive. We had to create a solution that would maximize the effectiveness of available bandwidth. Network facilities were considered based upon their ability to produce optimal trunk bandwidth usefulness. New tariffs had to be established, negotiated, and approved."

Freeport Indonesia also has a limited number of communications specialists. Therefore, support from others was a crucial ingredient to a successful multinational network. There were three major objectives driving the network:

1. Provide voice (including fax) interconnection among existing PBX systems
2. Serve as a backbone for TCP/IP data internetworking
3. Allow for future plans designed around video and new data applications

GENERAL DATACOMM'S SOLUTION

Once the communications needs were determined, Freeport Indonesia contracted with Telstra, formerly OTC, the Australian overseas carrier. Through the Customer Planning Group, Telstra gathered considerable information and comparative quotes for bandwidth management systems to provide the new

$1.6 billion multinational natural resource company with locations in USA, Indonesia, and Australia

Mining operations in remote areas of Irian Jaya, Indonesia

Main objectives: High levels of reliability and quality

Diverse carrier services using microwave, satellite, and submarine cable

Compressed voice with fax and data access for TCP/IP internetworking

Close cooperation between General DataComm and its Indonesian and Australian distributors, as well as Australian carrier, Telstra

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backbone network. Freeport's existing network was based on the General DataComm Minimux, but this did not mean automatic selection for the planned upgrade and expansion. Quotes were solicited, and once the process was complete, General DataComm was again selected as Freeport McMoRan's communications partner. The selection was based upon earlier evaluations, favorable experience with the Minimuxes, and a decision to deploy General DataComm's Transport Management System (TMS) at Freeport's main sulfur mine in off-shore Louisiana.

The network topology was planned around the remoteness of some locations and the available transmission methods. These would vary by location. Communications from Tembagapura to Jakarta would be through two satellite uplinks at 128 Kbps. Connection back to New Orleans headquarters from Jakarta required a combination of local microwave to a satellite uplink site, all at 64 Kbps.

Network operations would be supplied by Telstra at its Sydney location. This meant that two aggregates, one back to the mine operations hub in Jakarta, and the other to headquarters in New Orleans, were required. TMS Controllers would reside in Tembagapura and the Telstra operations center in Sydney.

The Jakarta to Sydney link was another combination aggregate similar to the connection back to New Orleans. Only this time, the local microwave provides a path to a submarine cable linking Australia and Indonesia at 64 Kbps. The connection that closed the loopback to headquarters in New Orleans was a trans-Pacific cable providing 64 Kbps of bandwidth. The final link in the initial network was a 64 Kbps ISDN-provided service between Telstra operations in Sydney and Freeport's purchasing office in Cairns.

The network topology was a delta-based design with tail connections to Tembagapura from Jakarta, and Cairns from Sydney. There was to be a total of four TMS and one MEGAMUX Plus. Since aggregate bandwidth was at a premium, the main legs and connection to Cairns were to be 64 Kbps. Given this constraint, to fulfill the objective of fax over voice, the choice was to use the VLBRV cards at 9.6/4.8 Kbps. This would leave room for the TCP/IP sub-network, which was a major application requirement.

Implementation of the network was managed by General DataComm's International Program Management team from the Multinational Programs Department. Close cooperation with Indonesian and Australian distributors, as well as Telstra, provided an implementation and training plan that accomplished a complicated multinational install. The project was completed on time with a minimum of setbacks, fulfilling the customer's expectations.

CUSTOMER BENEFIT

General DataComm has provided Freeport McMoRan a network with great reliability and flexibility. With the TMS network now in place, Freeport has alternate routing based on the delta design for its backbone. Unlike the Minimuxes, the TMS systems provide easy configuration and on-line diagnostics through controllers located thousands of miles apart. Real-time trouble isolation now allows for quick response to problems that may impede smooth communications.

Since the network has been installed, Freeport McMoRan has realized significant cost savings, while gaining support for applications not before available. The GDC solution also allows for the future expansion that Freeport is seeking. The purchasing office in Singapore has recently been added to the Jakarta hub, and additional cards have been acquired in further support of the Irian Jaya mine operations. Eventually, value added services such as videoconferencing will someday further enhance one of Freeport's important assets and provide for added savings not yet realized.

General DataComm