



Technical Description

1.1 System Description

The RMT-1 System comprises three functional components that provide an unparalleled facility to for multiple users to monitor and control hundreds of remotely located Oil Wells, compressor stations, pipelines and metering stations from a single central data server via secure corporate Intranet or Internet access worldwide.

System Components:

- Remote Monitoring Terminal (RMT-1)
- Communications Network
- Central SCADA/Communications Server

1.1.1 RMT-1

The Remote Monitoring Terminal (RMT-1), is a multi-function remote location unit that provides the plant interface monitoring and control functions. RMT-1 interfaces to the local plant and provides Monitoring, On-line Real-time Control or Autonomous programmed discrete and continuous control functionality.

With multiple communications options, the RMT-1 is able to utilise the most cost effective telecommunications medium available.

In multi-application locations such as onshore multi-well oilfields, or multiple offshore platform clusters, RMT provides a very low-cost efficient "Cluster" communications option that enables a single central RMT to network up to 20 wells from a single communication link through a secure high speed local area network.

Each RMT-1 Controller Unit provides a local data storage facility to enable low cost interval polling to update central database for long term data trending and analysis. This ensures data is never lost at the well site and high speed update of reporting by exception data.

1.1.2 Communications Network

RMT-1 provides multiple communications interfaces that utilise any standard available facilities and may be configured to provide the most cost effective solution.

Communications Interfaces available:

- Private VSAT Ku-Band Satellite Communications – DAMA/SCPC
- MPDS Inmarsat Public Internet Data Service
- Private Wire/Line of Sight Microwave Digital Radio
- Fibre Optic
- ISDN or PSTN Telephone

For example, a single Private VSAT Ku-Band satellite system can monitor and control multiple geographically dispersed Oil fields, each with a central RMT-1 Cluster than can access up to 20 RMT units using a local area network communications, using Demand Assigned Multiple Access (DAMA) service through a single low cost satellite space segment.

1.1.3 Central Data/Communications Server

At the heart of the RMT System is the Central SCADA and Communications Server. This high integrity data server based on the HP DL380 Server architecture ensures maximum data reliability and user availability. The SCADA server is accessed via the Internet from any world wide location and provides secure access to various levels of functionality up to and including control functionality with pre-assigned password, IP and MAC address restrictions for added security.

Facilities provided by the central SCADA server:

- Public Access INTERNET Access Enabled
- Corporate INTRANET Facility
- Full Colour Graphics
- Operator Control Displays
- Plant Mimic Displays
- Real Time & Historic Trend Display
- Status Displays
- Report Generation & Display
- Alarm Display
- E-mail & SMS Annunciation Alert
- Multiple User Level Password Access (99 Levels)
- Secure Restricted IP & MAC Address Access
- Encoded Data Transfer
- SQL Database Access for Corporate Reporting
- Export Reports, XLS or CSV to users desktop

1.1.4 RMT Facilities

The RMT unit provides the following facilities:

Qty 2 x Modbus Serial RS-232/422 Serial Port – Interface for ESP/VSD, Zenith Data

Qty 16 x Digital Input 24V DC

Qty 6 x Digital Output 24V DC

Qty 4 x Analogue Input 4-20mA

Qty 1 x Ethernet LAN Port