Comprehensive Software Solution for the Management of Complex Oceanographic and Meta Data

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Data Management System (DMS)

An essential element of managing any monitoring network is the ability to command and control system components when needed. The AXYS DMS software is designed to facilitate WatchMan500™ station configuration and the control of data collection and processing for the WatchMan500™ Network Solution.

Using AXYS DMS you can:

- manage your communications
- configure & manage the buoy or station
- collect and store data to a DBMS
- have data disseminated

Data display software: SmartWeb™ and SmartView™
The DMS Suite gives you the power to manage your network of stations

**TELEMETRY**
- Iridium
- Inmarsat D
- GPRS/CDMA TCP/IP
- VHF
- Serial
- GOES
- Inmarsat C

**DISPLAY**

**DMS**
- **ACQUIRE**
  - Receive
- **ANALYZE**
- **STORE**
  - Text
  - Database
  - Full Power RDBMS
- **ALERT**
  - Voltage Alarms
  - WatchCircle
  - Inactivity
- **BROADCAST**
  - RAW Data
  - Processed data
- **DIAGNOSE**
  - Troubleshoot
  - Fix without field trip
- **CONFIGURE**
  - Change settings
  - Change messaging

**SmartView™**
- Desktop application
SmartView is used to display, graph, map, and export data collected by DMS and view station configuration information.

**SmartWeb™**
- Desktop browser
- Mobile browser
Linked to one or many DMS databases, SmartWeb allows users to access their data anytime, anywhere through an intuitive web-based interface.

**FIELD SUPPORT**
- Check operation/diagnose
- Reconfigure
The DMS software will operate on any PC or Server (minimal requirements by today’s standards):
- operating Windows OS ≥ XP or Windows Server ≥ 2003,
- 2GHz dual core CPU,
- >2GB RAM and hard drive capacity >100GB,
- an Ethernet port and serial IO as required.

The DMS components include:
- DMS Service,
- DMS User Interface,
- Microsoft SQL Server Relational Database Management System (RDBMS),
- SmartView desktop viewing software,
- SmartWeb web-based viewing software. SmartWeb can be installed on a laptop or installed and distributed on a corporate network across different servers and user computers allowing for a flexible and scalable solution.
The **DMS Service** is a Windows service that controls: communications (telemetry), data collection, data processing into a Database Management System (Microsoft SQL Server) and/or ASCII text files and data dissemination to other systems. The benefit of running as Windows service is the freedom for the user not to be logged in to the computer which is running the DMS.

On installation of the DMS application, a public domain **Microsoft SQL Server Relational Database Management System (RDBMS)** is installed on the host PC or Server. This is fully functional, but has a limitation in the number of stations/data that can be accepted.
USER Interface GUI
The DMS supports standard communications:
• TCP Server; TCP Client;
• Email (POP3, SMTP, IMAP);
• Serial; Modem Dialup;
• FTP;
• As well as custom interfaces direct to Inmarsat M2M, Inmarsat IsatDataPro, and GOES.
These communications make it possible to support telemetry options like: VHF/UHF Radios, CDMA Modems, GPRS Modems, Inmarsat C, Iridium, Inmarsat M2M, Inmarsat IsatDataPro, Wi-Fi, Bluetooth, GOES, and GlobalStar.
All accessed and configured from the User Interface
The WatchMan500 Station Configuration features are managed via the DMS User Interface. This application gives users complete control over the operation of a WatchMan500 station including:

- device handler (sensor) configuration,
- system sampling regime,
- data message formats and contents,
- onboard data logging
- and system diagnostics.
Systems will come with a variety of default message formats, but specific configurations can be built easily by selecting any parameters that have been mapped in the station configuration parameter.
Action Scripts and Notifications

Action Scripts are lists of commands that cause the WatchMan500™ to perform one or more tasks. Several device handlers use Action Scripts to respond to certain events. The most common of the action scripts are built from the Notifications selection. As well custom Action Scripts can be built and executed.
The DMS provides two methods to distribute received data to other systems.

- **Message Broadcasting.** Message Broadcasting will only disseminate valid data messages.

- **Communications Relay.** Communications Relay will disseminate, in real time, all data, regardless of content.
Data can be viewed:

- Graphically
- Tabular
- Exported to CSC, SML, Excel
- May require “Plug-ins’
Flexible and Scalable
Summary

- Total Station Management
  - Configuration
  - Messaging
  - Firmware upload
  - Two way communication
- Ability to handle complex high band width data sets
- Flexible and expandable
- Full data management and display tool set.
Questions