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## AX-S4 MMS: Access For...MMS

### Description

AX-S4 MMS (pronounced "access for MMS") is an easy to use client that enables access to real-time data in any IEC61850 (UCA<sup>®</sup> 2.0) compatible device for any Windows<sup>™</sup> compatible application supporting either the OLE for Process Control (OPC<sup>™</sup>) or Dynamic Data Exchange (DDE) interfaces. AX-S4 MMS gives you a high-level interface to real-time data that lowers your integration cost by providing you everything you need in a single easy-to-use package. You can even copy and paste hot-links to your data from the MMS Object Explorer directly into your MS-Office<sup>®</sup> applications without any programming.

AX-S4 MMS provides "plug-in" access to Ethernet based devices supporting the IEC61850, UCA2.0, or MMS protocols for any OPC client enabled application, including many popular off-the-shelf Windows based SCADA and HMI products.



### Key Features

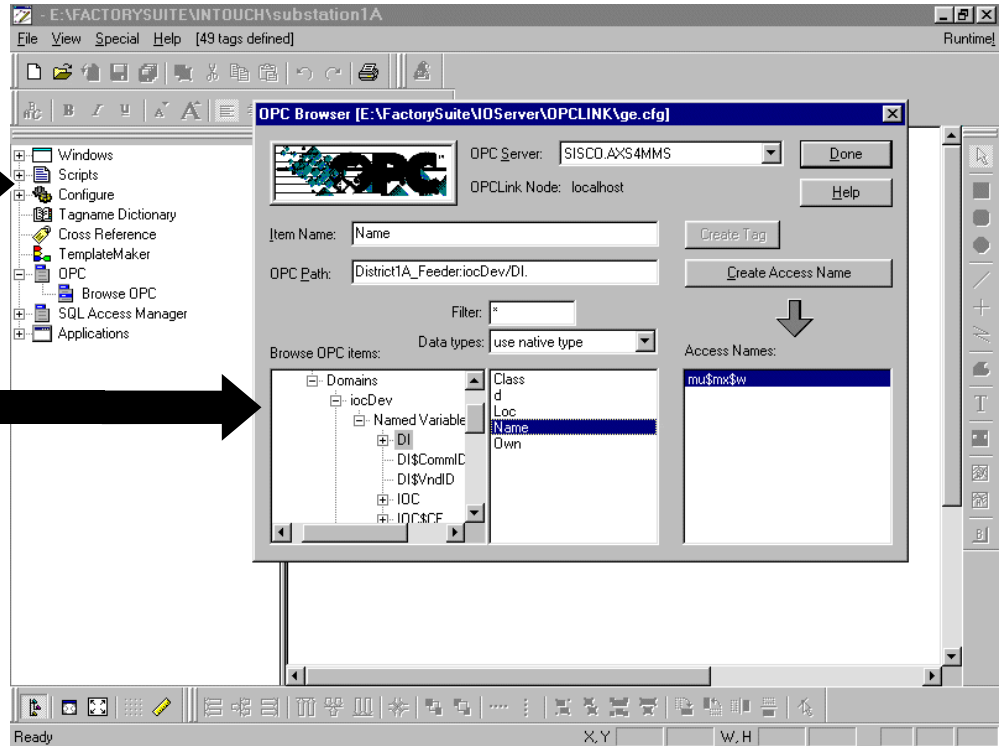
- OPC Server interface supports local and remote OPC client applications including most Windows based SCADA, HMI, historian, and Visual C++<sup>®</sup> applications.
- COM Automation server provided for supporting Visual Basic<sup>®</sup> applications.
- Runs over standard Ethernet adapters supporting ISO/OSI and TCP/IP transport protocols including support for:
  - IEC61850 parts 7-2, 7-3, 7-4, and 8-1 including the Abstract Communication Service Interface (ACSI).
  - UCA2.0 per IEEE TR1550 including GOMSFE and CASM.
  - Manufacturing Message Specification (MMS) devices per ISO9506.
- OPC server interface included for IEC61850 Generic Substation Status Event (GSSE) and Generic Object Oriented Substation Event (GOOSE) messaging.
- Support for unsolicited reporting for both IEC61850, UCA2.0 and generic MMS devices via OPC.
- Supports MMS Variable services via OPC and DDE. MMS Journal, Domain, Program Invocation and File services are supported via DDE interface.
- Provides an interactive MMS Object Explorer for point & click access to network objects.
- Manual configuration of point definitions not needed for most devices. Data point definitions can be extracted directly from the devices simplifying setup and greatly reducing point configuration errors.
- Easy-to-use configuration utility allows for common network addressing setup of SISCO MMS nodes.
- No predetermined limits on the number of data points and up to 1000 devices can be accessed.
- Compatible with many different devices from many vendors including RTUs, relays, meters, and CNCs.

# AX-S4 MMS: OPC Server

The AX-S4 MMS OPC Server works directly with commercially available off-the-shelf applications such as InTouch® (pictured here), Cimplicity®, Fix® or any other OPC enabled client application.

The OPC Browser allows you to select devices and objects to easily configure your application to read and write the selected data.

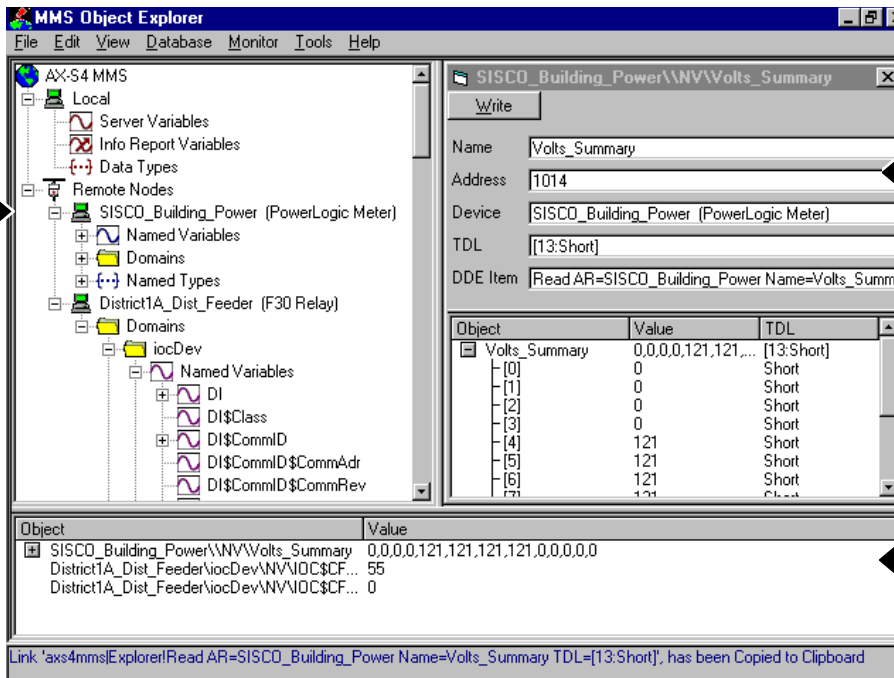
For developers, AX-S4 MMS with OPC brings real-time MMS/IEC61850 data to programs based upon Microsoft's Distributed Component Object Model (DCOM) interface technology.



# AX-S4 MMS Object Explorer

## Object Pane

Shows a tree diagram of Local and Remote Nodes (servers) and all of the MMS/IEC61850 objects defined in these servers. The object definitions are retrieved directly from the device itself. **No local configuration of remote objects is necessary.**



## Detail Pane

Displays and allows you to change the value of a selected MMS or IEC61850 object. Clicking on an object in the Object Pane will show the details of it here.

## Monitor Pane

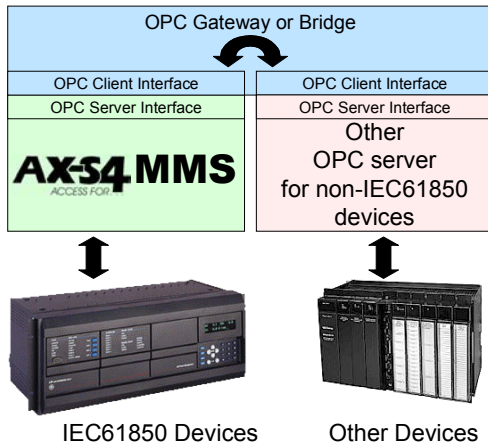
Monitors the values of specific objects. To monitor an object, drag it here from the Object Pane.

## Status Line

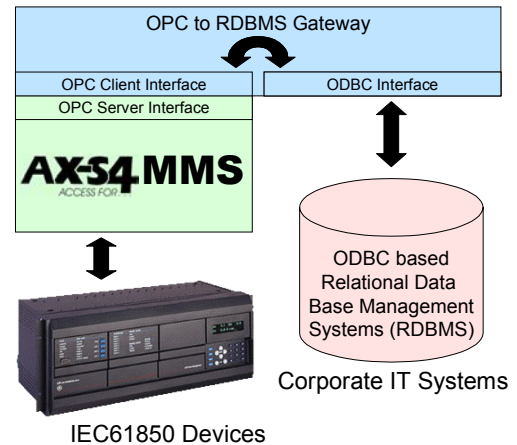
Displays current activity.

# AX-S4 MMS with OPC = Application Flexibility

## Protocol Gateways



## Interface to Databases



Protocol gateways that enable data sharing between devices that support incompatible protocols are easily implemented using off-the-shelf OPC-based products. OPC gateways and bridges are available from several 3<sup>rd</sup> parties that, when used with AX-S4 MMS, enable IEC61850 devices to share data with virtually any system or legacy device that uses a protocol for which an OPC server product exists. Literally hundreds of different protocols are supported. Contact SISCO for more details.

Interfacing data from IEC61850 devices is fast and easy using the AX-S4 MMS OPC interface. Custom interfaces to many different systems can be built **without any programming** using off-the-shelf products. The example above illustrates how data can be extracted from an IEC61850 device and stored in a RDBMS for access throughout your company's corporate IT infrastructure. OPC is available for many different products including historians, enterprise data servers and web portals.

# AX-S4 MMS Object Explorer (Clipboard Function)

The screenshot shows a Microsoft Excel window titled 'Microsoft Excel - AXS4WK4.xls'. It displays two line graphs: 'Total Harmonic Distortion' and 'Building Power Frequency'. Below the graphs is a black box with the text 'Meter Status: Operational'. To the right, the 'Object Explorer' window is open, showing a tree view of objects. A large black arrow points from the 'Object Explorer' to the Excel window. Below the arrow, a table shows the copied data:

Object	Value	TDL
Circuit_Monitor\WVV\Frequency	6000	Short
Circuit_Monitor\WVV\THD_Phase_...	37	

At the bottom of the Object Explorer window, a status bar reads: 'Link "axs4mms\explorer\Read AR=Circuit\_Monitor Name=Frequency"; Copied to Clipboard'.

AX-S4 MMS brings real-time data integration to the desktop for virtually all Windows compatible applications including Microsoft Office® programs.

DDE-Advise "Hot-Links" can be established using the Windows Clipboard **without any programming**. Bring up the object in the MMS Object Explorer and select Edit|Copy. Then, go to your favorite application and select Edit|PasteLink. You now have a hot-link!

# AX-S4 MMS Technical Information

## Other Features

- All configuration and remote point definitions are stored in a Microsoft Access data base (ODBC compatible) for maximum flexibility.
- Reporting tool provided for listing device and object definitions. Use of ODBC allows for even more flexible reporting capability using third-party tools.
- Allows customization of the language and terminology used in the MMS Object Explorer.
- MMS Object Explorer allows for storage and retrieval of predetermined monitor sets.
- File transfer utility is included and is accessible via MMS Object Explorer menus.
- Can be used with 3<sup>rd</sup> party test scripting tools to build a flexible test environment for IEC61850 devices.
- Extensive logging capabilities for troubleshooting.
- Can be run as a Windows service.

## System Specifications:

- Operating System: Windows 98/NT4/2000/XP
- Network Interface: IEEE 802.3 Ethernet Adapter (e.g. 3Com, etc.)
- Network Protocols: TCP/IP or ISO/OSI (SISCO ISO/OSI Stack Included)
- Recommended Mem: ≥256MB RAM, 100MB Disk

## Part Numbers:

- Development License: AXS4MMS-132-095-DEV
- Run-Time Package: AXS4MMS-132-095-PAK

## AX-S4 MMS Development License Includes:

- AX-S4 MMS Software with SISCO ISO/OSI Stack
- Printed and Electronic Documentation
- Sample programs
- Hardware Lock (dongle)
- One year support and maintenance

## AX-S4 MMS Run-Time Package Includes:

- All the above except: 30 days installation support only

## Other SISCO Products:

- **AX-S4 ICCP:** OPC server for the Intercontrol Center Communications Protocol (ICCP) per IEC60870-6 TASE.2.
- **MMS-EASE Lite:** IEC61850 and ICCP-TASE.2 source code for embedded systems.
- **COMTRADE Utility for PI:** Historization of COMTRADE data for the OSIsoft™ PI historian.
- **Utility Integration Bus:** Model driven application integration for utilities using IEC61970/61968 and EPRI CIM.

NOTES: 1) Specifications presented herein are thought to be accurate at the time of publication but are subject to change without notice. 2) All company names, product names, trademarks and registered trademarks are trademarks of their respective companies. 3) AX-S4 MMS is available through SISCO directly and OEMs and distributors worldwide. Contact SISCO for the location of your representative.

4 - Apr 03



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