



Course 160
Engineer Role:
The Meter Data
Unification
System (MDUS)
SAP to
PNPSCADA
interface

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Recommendation:

- You should have experience with SAP (<http://go.sap.com/>)
- It would be beneficial to have experience with SAP for Utilities (is_u)
- You should have done the AMI training with SAP

Gives you the power to:

- Read real meters from within the SAP User Interface - in real time! using PNPSCADA, e.g. close out readings.
- Validate readings before sending to SAP.
- Route User and Meter generated Events from meters to SAP work flow
- Can do correctly Summated Maximum Demand readings
- Automatically populate Billing Multipliers and Location information from SAP to PNPSCADA
- Disconnection and Reconnection of meters
- Sending Text to meters in the field

Once you are done with this Course, you should be able to:

- Add an MDUS entity
- Set up an MDUS entity SOAP connection to SAP in both directions
- Set up MDUS Events
- Set up Summated Maximum Demand relationships for SAP billing

HOWTO Add an MDUS Entity in PNPSCADA

Prerequisites

First you need to buy and commission SAP for Utilities, including Enhancement Pack 4 (e.g. <http://wiki.scn.sap.com/wiki/display/ESpackages/SAP+enhancement+package+4+for+SAP+ERP+6.0>), and specifically the AMI (Advanced Metering Infrastructure) interfaces (e.g. <http://wiki.scn.sap.com/wiki/display/ESpackages/Advanced+Metering+Infrastructure>). You will need consultants to help you with that.

Secondly you need WSDL files for the end points that PNPSCADA will consume to call back into SAP with new readings and events as they become available. These Web Services must of course be addressable from the PNPSCADA server.

Thirdly you need the Sender Business System ID, Recipient Business System ID, Advanced Metering System ID and the IP of the SAP Server that offers the SOAP services.

Howto

Log in; Go to the Overview Screen (Home); Push the Add New button

Select Servers

Select SAP MDUS

Enter the Sender Business System ID, Recipient Business System ID, Advanced Metering System ID and the IP of the SAP Server; Push the Finish button

The SAP MDUS Entity should now exist.

HOWTO Configure the SOAP end-points on the MDUS

There will be an exchange of SOAP files between you and the SAP administrative staff, to allow PNPSCADA to call SAP over SOAP, and to allow SAP to call PNPSCADA over SOAP.

Give the URL to the PNPSCADA SOAP services to your SAP administrative staff, so that they can download the wsdl files they need. For example

<http://sdg.pnpscada.com/soap>

To see for which wsdl files you have to ask from them, and the place to configure them:

**Log in; Go to the Overview Screen (Home); Select the SAP MDUS entity
Select Tools → Setup MDUS**

There would be a drop list at the bottom of this screen. In it is listed all the interfaces that PNPSCADA can call back into SAP. Ask your SAP admin people for all of these WSDL files, one per line in the drop list, or ask for the specific ones that your SAP consultants advise you to use.

Sometimes the WSDL files are a bit different in the sense that they can be published from a PI/XI server, and not directly from SAP. In this case, be sure that the parameters at the top of the screen is correct, specifically choose HTTP, specify the IP address of the SAP server where PNPSCADA will connect to, the special port that they opened for you, possible HTTP security parameters, and the Sender and Recipient System Ids, and the AMS id. Leave “Is Head-End for Server” blank under normal circumstances, and leave “Scale Readings” off normally. When adjusting these parameters, push the Submit button to submit your changes. The “Hold back suspect readings until validated” setting will stop unvalidated readings to go through to SAP if set.

When you have the WSDL files, upload them one at a time in this screen, by selecting the function, choosing the file, and Pushing the Configure New Function button.

They will appear in a line in a table in the middle of your page. On these lines, you can download the original file you uploaded, as well as the changed file that was changed to reflect the IP and port of your PI server. It is the changed file that will be used by PNPSCADA to call the functions. You can also delete a Function.

When this is done, your SOAP connection is configured!

HOWTO Configure MDUS Events

**Log in; Go to the Overview Screen (Home); Select the SAP MDUS entity
Select Tools → Setup MDUS Events**

On this screen, enable to events that you want to route to SAP. Of course the event (or in some cases PSRM) related functions need to be configured on the previous page, otherwise that won't happen.

You should also specify the SAP TypeCode, SAP CategoryCode and SAP Value Id per event that would make sense. To know what makes sense for the particular way that your SAP has been configured, ask your SAP consultants.

Please note! That if the PSRM upload is configured and an event has a file associated with it, the event call back function will not be called, but rather the PSRM file upload function, with the event code attached.

An example of a typical wsdl file that should be implemented on your SAP server, for PNPSCADA to call back, has been posted on a link at the bottom of this page, because that is not part of EHP4, but a customized interface.

This PSRM document upload interface is typically called on User events, triggered by the Edit → Insert User Event screen, where you can upload files against a meter. For example, a Calibration certificate may be uploaded with a Calibration event.

HOWTO Setup MD Summation

**Log in; Go to the Overview Screen (Home); Select a Meter entity
Select Edit → Advanced Meter Settings**

Near the bottom of the screen is a field called "SAP co-incident MD id". If you enter a value in here, all meters with the same value entered will return their pro-rata part of a summated MD across all the meters.