

Completing the Oil and Gas Supply Chain with Certified Integration

With more than 500 oil and gas companies around the world relying on the SAP® for Oil & Gas (SAP for O&G) solution portfolio, Energy Solutions International, Inc. (ESI) sought to create a standard interface between its market leading PipelineTransporter® Gas (PLTG) scheduling software and the SAP ERP application. In Q4 2008, the SAP Integration and Certification Center certified the interface between PLTG 4.0 and SAP ERP. PLTG also achieved “SAP Solution Manager Ready” status.

Houston-based ESI is a global supplier of award-winning oil and gas pipeline management software. Its broad range of solutions includes PLTG, a nomination, scheduling and allocation system that integrates shipper information with critical pipeline and business data to schedule the movement of natural gas.

The SAP certified interface between PLTG and SAP ERP allows PLTG users to invoice customers using SAP ERP for final transported and allocated gas volumes, thus completing the supply chain. With the standard interface, customers with both PLTG and SAP ERP find that the value of each application is enhanced by the other via the certified interface, leading to tighter accounting controls, reduced audit risk and faster order-to-cash cycles. Customers can confidently manage the complexity of hydraulics-based scheduling with complex scheduling rules within PLTG while leveraging the extensive accounting functionality of SAP ERP.

Why Certify the Interface?

Prior to the development of an SAP-certified interface, ESI customers who also used SAP ERP were interfacing with PLTG invoice data in one of the following ways:

- PLTG would format the data in its own XML format and send to a third-party web service that was developed and maintained by the customer. This web service would then be responsible for loading data into the SAP solution. This adds complexity for customers, requiring them to maintain in-house development of the web service as well as its maintenance.
- PLTG sends the invoice data as a physical file. The customer would then process the file for loading data into the SAP solution at their discretion. This method also requires the customer to develop an in-house file processing solution that needs ongoing maintenance.

Company	Company Code	Last Date Adjustment	Total Shipper Qty	Total Shipper Revenue
Shipper A	ShipperA	11/25/2008 12:00:00 AM	190000.00	72750.00
Shipper B	ShipperB	11/25/2008 12:00:00 AM	175000.00	102750.00
Shipper C	ShipperC	11/25/2008 12:00:00 AM	825000.00	250500.00
Shipper D	ShipperD	11/25/2008 12:00:00 AM	900000.00	337500.00
Shipper E	ShipperE	11/25/2008 12:00:00 AM	750000.00	287500.00

Company Code	Contract	Contract Code	Receipt Point	Delivery Point	Total Path Quantity
ShipperA	FSA 1	FSA1	Rev 1	Del 2	2,55000.00
ShipperA	FSA 1	FSA1	Rev 2	Del 2	5,25000.00
ShipperA	FSA 1	FSA1	Rev 3	Del 1	20000.00

SAP certification of a standard interface, on the other hand, provides several advantages. By creating a seamless interface between PLTG and SAP ERP using standard technologies:

- Users of SAP solutions will be familiar with the integration and technologies
- Customers avoid the need for a custom integration solution and in-house development
- Upgrades to the standard interface are easier to achieve when customers upgrade SAP or PLTG

Understanding the Commercial Process within PLTG

Natural gas pipeline shippers use the PLTG application to submit requests for transportation services using web-enabled nomination screens. These nominations are first validated against contractual and physical limits, and then confirmed or adjusted by the upstream and downstream parties that regulate different points along the pipeline.

Confirmed values can be hydraulically validated by an external simulation model, such as ESI's PipelineManager® application, before proceeding to the scheduling process. This takes the now-authorized values and uses various algorithms to distribute any adjustments that have been made by the pipeline scheduler or via the hydraulic validation process. The nominations, now “scheduled” numbers, are then available in PLTG via the web to be reviewed by shippers, as well as upstream and downstream operators.

After gas flow, measured gas quantities and pre-determined allocation methods are used to calculate the shipper allocation and key pipeline indicators such as line pack, over and short, unallocated gas, etc. Once the shipper allocation is determined, any penalties, various service charges and prior period adjustments can be calculated; ultimately leading to invoice line items.

Once the invoice line items and other key pipeline indicators have been reviewed, the invoice line items are closed to further modifications. Corresponding invoices and journal entries can then be produced from the SAP application.

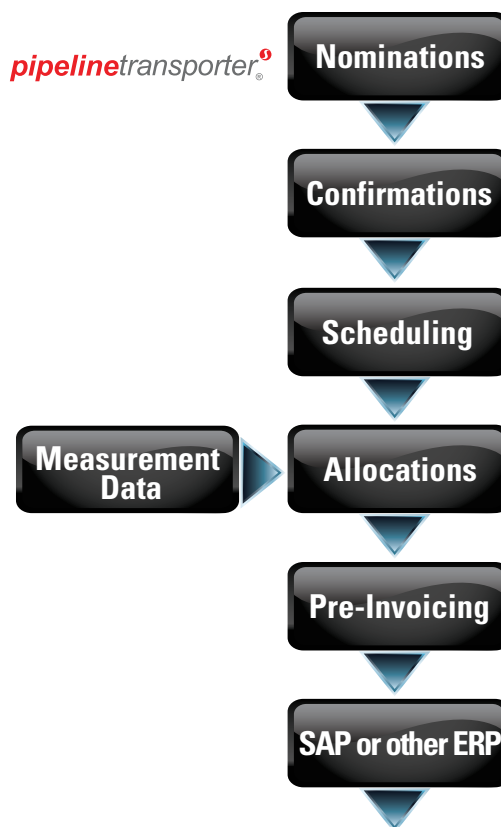
This process is important for control. Traditionally, invoices are produced by one application and then journal entries are either manually entered or a file is interfaced into the general ledger. This creates an audit risk and extra steps to ensure the invoice produced matches the journal entries. By creating the invoice in SAP ERP, the pipeline's accountant knows that invoices match their journal entries.

By using a standard interface, the audit trails in PLTG along with the invoices and journal entries being created in the same application (i.e., the SAP solution) provide tighter accounting controls and reduced audit risk.

Integration Technology

A web service layer was developed for PLTG to communicate with SAP ERP. This web service was packaged into a product called PLTG Web Services Package. Version 2.0 of PLTG Web Services Package is the version certified by SAP as properly integrating using SAP-endorsed integration technologies – BAPIs. The integration was achieved using SAP connector for .NET application with SAP systems via open standards.

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SAP® Certified
Integration with SAP Applications

About Energy Solutions International

Energy Solutions International is a leading global supplier of pipeline management software. The company's broad range of products drives excellence in operational efficiency, transaction management, throughput management, and pipeline safety. Founded in 1976, ESI serves more than 250 clients in 45 countries. ESI is committed to providing integrated solutions to address the unique challenges of our industry. Our products support essential workflows by integration with each other and third party applications. Our products integrate with systems from all major SCADA vendors including: Invensys, Siemens, Honeywell, ABB, SAIC, Yokogawa and Telvent, and major ERP vendors including SAP and JD Edwards.

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