ADD-On Solutions for SAP NetWeaver Process Orchestration

All In One Guide

Secure connectivity add-on 1.0 (PI SFTP PGP ADDON)
Business to business add-on 1.0 (PI B2B ADDON)
Disclaimer

This presentation outlines our general product direction and should not be relied on in making a purchase decision. This presentation is not subject to your license agreement or any other agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or to develop or release any functionality mentioned in this presentation. This presentation and SAP's strategy and possible future developments are subject to change and may be changed by SAP at any time for any reason without notice. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. SAP assumes no responsibility for errors or omissions in this document, except if such damages were caused by SAP intentionally or grossly negligent.
AGENDA

- INTRODUCTION
- Secure Connectivity Add-On (PI SFTP PGP ADDON)
- Business to business Add-On (PI B2B ADDON)
INTRODUCTION

- OVERVIEW
- FEATURE HIGHLIGHTS
- DEPLOYMENT OPTIONS
Overview: New ADD-Ons from SAP

SAP NetWeaver Process Orchestration, Secure Connectivity (SFTP PGP) Add On

- No new license requirement
- Available to all existing/new PI customers
- Need to be installed on SAP NetWeaver PI
- Released On 30th March, 2012

- SFTP ADAPTER
- PGP MODULE

SAP NetWeaver Process Orchestration, business to business (B2B) Add On

- Separate license requirements
- Need to be installed on SAP NetWeaver PI
- Released On 30th March, 2012

- AS2 ADAPTER
- OFTP ADAPTER
- X400 ADAPTER
- B2B CONTENT
- MAPPING FUNCTIONS AND TEMPLATES
- NRO AND ARCHIVING MODULES
- EDI XML CONVERTER AND MODULES
Feature Highlights

- Tight integration with SAP NetWeaver Process Integration/Orchestration
- Same underlying NetWeaver/PI technology framework for monitoring, channel scheduling, message splitting, configurations, administration etc.
- Encryption, Signing and Compression capabilities
- Communication Protocols Support (SFTP, AS2, OFTP, X400)
- Different EDI Formats support (EDIFACT, ANSI X.12, VDA, TRADACOMS, ODETTE, Custom Formats)
- Ready to use ESR Content (XSDs, Mapping Templates, Mapping Functions)
- Multi Message handling Support
- Modules for special B2B use cases (Archiving, Automatic Counters etc.)
- EDI XML Converter for maintaining B2B Content and extensions.
- Functional and Technical Acknowledgements
Deployment Options

B2B ADDON 1.0

SFTP PGP ADDON 1.0

SP8 onwards
Process Integration 7.11

SP5 onwards
Process Integration 7.3
Dual Stack/AEX

SP3 onwards
Process Integration/
Process Orchestration/
PI 7.31
Dual Stack/AEX
SECURE CONNECTIVITY ADDON

- SFTP ADAPTER
- PGP MODULE
SFTP ADAPTER

**SFTP Adapter**

- Provides secure file transfer functionality over any reliable data stream according to the Secure Shell protocol (SSH)

**Generic Features**

- File control through separate handling of empty files, maximum file size, duplicate and modification check
- File processing Options
- File selection through regular expressions
- Loading additional files as attachments
- Setting File authorizations

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFTP Version Support</td>
<td>SFTP 0,1,2 and 3</td>
</tr>
<tr>
<td>Authentication</td>
<td>Fingerprint check, certificate and Password authentication</td>
</tr>
<tr>
<td>Transport Protocol/Security</td>
<td>SSH2</td>
</tr>
<tr>
<td>Message Level Security</td>
<td>PGP (PGP Module) Support</td>
</tr>
<tr>
<td>Proxy Support</td>
<td>HTTP, SOCKS4 and SOCKS5</td>
</tr>
<tr>
<td>Archiving</td>
<td>Archive Incoming/Outgoing Files on File System.</td>
</tr>
<tr>
<td>Compression</td>
<td>ZLIB</td>
</tr>
<tr>
<td>Adapter specific Message Attributes</td>
<td>File name, Directory, File size, Modification date and SFTP host</td>
</tr>
<tr>
<td>Quality of Service</td>
<td>Exactly once, exactly once in order, best effort</td>
</tr>
</tbody>
</table>
Pretty Good Privacy (PGP) enables data encryption and decryption that provides cryptographic privacy and authentication for data communication.

- Based on Open PGP specification RFC 4880
- Used for signing and encrypting, decrypting, signature verification of message content
- Can be used in conjunction with any technical adapter of SAP NetWeaver Process Orchestration.
- For inbound and outbound communication

<table>
<thead>
<tr>
<th>Type of Component</th>
<th>Standard PI Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encryption Algorithms</td>
<td>AES (128), AES (192), AES (256), BLOWFISH, CAST5, DES, 3DES, TWOFISH</td>
</tr>
<tr>
<td>Signing/Verification Algorithms</td>
<td>MD5, RIPEMD (160), SHA1, SHA (224), SHA (256), SHA (384), SHA (512),</td>
</tr>
<tr>
<td>Compression</td>
<td>ZIP, ZLIB, BZIP2</td>
</tr>
<tr>
<td>Message Formats</td>
<td>Text and Binary (ASCII armoring)</td>
</tr>
<tr>
<td>Asymmetric key generation algorithm</td>
<td>RSA, DSA, Elgamal with keys size &gt;=1024 bits</td>
</tr>
</tbody>
</table>
BUSINESS TO BUSINESS CONNECTIVITY ADDON

- OFTP ADAPTER
- AS2 ADAPTER
- X400 ADAPTER
- EDI SEPERATOR
- ARCHIVER MAPPING AND MODULE
- EDI XML CONVERTER
- NRO
- MAPPING TEMPLATES
- B2B CONTENT
- FUNCTION LIBRARIES
OFTP Adapter

OFTP was introduced by the Odette organization to enable secure, reliable electronic message exchange (point-to-point or indirectly via a VAN).

Generic Features

- OFTP Log Viewer
- Automatic exchange of certificates with partners
- (File format Support: Unstructured, Text, Variable, fixed Length)
- Multiple Call Handling (Incoming & Outgoing)
- TCP/IP /ISDN polling

OFTP Version Support

- OFTP 1.x and OFTP 2

Authentication

- Auth. Against Odette Service List
  - Basic and Certificate based

Transport Protocols/Security

- CAPI/ ISDN/ TCP/IP, SSL, CMS based cryptography handshake
- CMS based encryption and signing, PGP Module Support

Message Level Security

- EERP and NERP (Optionally Signed)

Acknowledgement Support

- Incoming/Outgoing messages on File System.

Archiving

- ISO-8859-1 EBCDIC

Code Page Conversion

- CMS, Protocol level, PGP Module Support

Compression

- Exactly once, exactly once in order, best effort

Quality of Service

- Exactly once, exactly once in order, best effort

- TCP/IP /ISDN polling

- (File format Support: Unstructured, Text, Variable, fixed Length)

- Multiple Call Handling (Incoming & Outgoing)

- OFTP Log Viewer

- Automatic exchange of certificates with partners
Supported Encryption Algorithms

- AES_256_CBC
- 3DES_EDE_CBC_3KEY

Supported Signing Algorithms

- MD5
- SHA1
- SHA224
- SHA256
- SHA384
- SHA512
AS2 ADAPTER

The Applicability Statement 2 is a protocol is used to transport data securely and reliably over the Internet, based on HTTP and S/MIME.

- **AS2 Version Support**: AS 2
- **Authentication**: Basic (Username and Password) and Certificate based
- **Transport Protocol/Security**: HTTP, HTTPS
- **Message Level Security**: S/MIME based encryption and signing, PGP module support
- **Proxy Support**: HTTP(S)
- **Archiving**: Archive Incoming/Outgoing messages on File System.
- **Acknowledgements**: Sync and Asycn MDN (Message Disposition Notification)
- **Adapter specific Message Attributes**: File name, Directory, File size, Modification date and SFTP host
- **Quality of Service**: Exactly once, exactly once in order, best effort

**Generic Features**

- Client/Server for outgoing/incoming transfers
- Dynamic URLs for incoming connections
- Authentication/mapping of partners via AS2-Sender, AS2-Recipient, Message-subject, and Message-ID
- Digital Signatures and Verification
- Encoding support: Arbitrary as supported by underlying JVM
AS2 ADAPTER.

- Supported Encryption Algorithms:
  - AES 128
  - AES 192
  - AES 256
  - 3DES
  - RC2

- Supported Signing Algorithms:
  - SHA1
The X400 Adapter can be used to integrate with X400 Client applications using Process Integration.

- **Protocol Support**: P7
- **Authentication**: Certificate based server authentication, Username/Password based mailbox authentication
- **Transport Protocol/Security**: TCP/IP, TCP/IP via SSL.
- **Proxy Support**: SOCKS Proxy
- **Archiving**: Archive Incoming/Outgoing Messages and Payload on File System
- **Acknowledgements**: Delivery Report, Non Delivery Report, Submission of Delivery Reports via HTTP
- **Body Party Types**: IA5 Text, Bilaterally defined with character set re-encoding
- **Quality of Service**: Exactly once, exactly once in order, best effort

- Allows retrieval and submission of messages
- Supports Delivery Report & Non-Delivery Report
- Content-based sender determination (multiple partner & message types in one mailbox)
- Time based Polling Timetable.
EDI Separator

The EDI-Separator is an additional PI adapter to split incoming mass messages into single messages. Furthermore, it offers the possibility to use content based routing (message identification) and split up messages according to interfaces based on message type and partner.

Generic Features:
- Generic EDI standards support
- Support for Regular Expression.
- Filter messages by parameters like message type, version, sender, receiver
- Generation of 997 Acknowledgement for ANSI X.12 messages
- Encoding conversion (US ASCII, ISO 8859-1, UTF-8) and Indentation
- Easy monitoring of fragmented messages

EDI Separator Adapter

ANSI X.12 Splitting Parameters
- Interchange Sender ID
- Interchange Receiver ID

EDIFACT Splitting Parameters
- Message Type, Release, Version
- Interchange sender identification and code
- Interchange recipient identification and code

ODETTE Splitting Parameters
- Message Type, Version
- Interchange sender identification and code
- Interchange recipient identification and code

VDA Splitting Parameters
- Message Type
- Customer Identification Number
- Vendor/Distributor Identification Number
How the EDI Separator Works
Splitting of Multi EDI Message into single messages

✓ Single Electronic Data Interchange (EDIFACT, ANSI etc.) message comprising of multiple B2B messages can be received by any technical adapter.
✓ Outbound EDI Separator Adapter splits multiple EDI into single B2B messages.
✓ (Single) B2B messages are received by inbound EDI Separator Adapter and mapped to corresponding internal message format (IDoc, Enterprise Service, Other)
✓ Optionally acknowledgement generated and sent to business partner
✓ IDoc/Enterprise Service/Other message is sent to receiving application

1. Purchase Order
2. Invoice
EDI XML Converter

- Browser based UI to manage EDI content
- One screen to manage different EDI formats content (EDIFACT, ANSI X.12, TRADACOMS, VDA, ODETTE and Custom Formats)
- XSDs generation of required B2B Formats for ESR usage
- EDI modules for format conversion with different technical adapters support
- Inbound and Outbound message support
- Content creation and Modification
- Maintain Runtime Table Enteries
- Test Conversions and logging
- Comparison of source and converted result
NRO (Number Range Objects)

NRO (Number Range Objects) module provides the option to insert automatically continuous counters into the outgoing message. These numbers can be created and are oriented towards the defined intervals in the respective objects.

Generic Features

- WEB GUI for NRO maintenance
- Customized starting numbers
- Status and value of current counter
- Warnings on customized threshold value
- Custom updation of counter values
- Adapter module in communication channel

Processing Sequence

<table>
<thead>
<tr>
<th>Number</th>
<th>Module Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>locale/jbs/TransmissionNumberModule</td>
<td>Local Enterprise Bean</td>
</tr>
</tbody>
</table>
Archiving Module

Archiving Module is used to archive messages based on sender and receiver communication channels. Archiving can also be done for the different Mapping steps in Operation Mappings. Messages get stored on the file system.

- Can be used with Inbound and Outbound Adapters
- Can be used with Operation Mappings
- Messages are archived in file system
- Archive Directory and Parameters are read from module configuration
- Dynamic file name configuration based on parameters (Timestamp, message id, partner name etc.)

SAP NetWeaver Process Integration

Partner System

Technical Adapter
Archive Module

Operation Mapping
Archive Mapping

Technical Adapter
Archive Module

SAP ERP
Function Libraries

*Please refer APPENDIX for more details*
Mapping Templates

- EDIFACT
  - Purchase Order
    - ORDERS
      - Version: 96A
      - Inbound/Outbound
  - Invoice
    - INVOIC
      - Version: 96A
      - Inbound/Outbound

- ANSI X.12
  - Purchase Order
    - 850
      - Version: 4010
      - Inbound/Outbound
  - Invoice
    - 810
      - Version: 4010
      - Inbound/Outbound

- TRADACOMS
  - Order File
    - ORDHDR
      - Version: T09
      - Inbound
  - Invoice File
    - INVFIL
      - Version: T09
      - Outbound

- VDA
  - Forecast
    - VDA4905
      - Inbound
  - Invoice
    - VDA4906
      - Outbound

- ODETTE
  - Forecast
    - DELINS
      - Version: 3
      - Inbound
  - Invoice
    - INVOIC
      - Version: 3
      - Outbound

- Can we used to quickly set up the scenarios
- Delivered as ESR Content
- Uses pre-defined B2B Functions
- More Scenarios/Productive Mappings via RDS
Pre-Packaged B2B Content

- Runtime Content via .b2b files
- Content Files can be imported via EDI XML Converter
- Content provided for different EDI formats message versions, transaction Sets and Groups
- Updation of content possible via EDI XML Converter Tool
- Pre–packaged XSDs for different EDI Formats can be imported in ESR
- Updated XSDs can be generated using EDI XML Converter Tool

*Please refer APPENDIX for more details*
Documentation

- Master Guides
- Installation Guides
- Configuration Guides
- Release Notes
- SAP Notes
- Security Guides
- SDN How to Guides and online documentation on help.sap.com (coming soon)
Thank You!

Contact Information:

Piyush Gakhar (piyush.gakhar@sap.com)
PRODUCT MANAGEMENT
APPENDIX
PRE PACKAGED EDI CONTENT

- EDIFACT
- ANSI X.12
- VDA
- ODETTE
- TRADACOMS
Pre-delivered EDI Runtime Content and XSDs—EDIFACT*

*Please refer product documentation for exact details
Pre-delivered EDI Runtime Content and XSDs—TRADACOMS*

<table>
<thead>
<tr>
<th>Message Type</th>
<th>Group</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order File Header</td>
<td>ORDER FILE</td>
<td>ORDHDR</td>
</tr>
<tr>
<td>Invoice File Header</td>
<td>INVOICE FILE</td>
<td>INVFIL</td>
</tr>
<tr>
<td>Acknowledgement File Header</td>
<td>ACKNOWLEDGEMENT OF ORDER FILE</td>
<td>ACKHDR</td>
</tr>
<tr>
<td>Delivery Confirmation Header</td>
<td>DELIVERY CONFIRMATION FILE</td>
<td>DLCHDR</td>
</tr>
<tr>
<td>Delivery File Header</td>
<td>DELIVERY NOTIFICATION FILE</td>
<td>DELHDR</td>
</tr>
<tr>
<td>Price File Header</td>
<td>PRICE INFORMATION FILE</td>
<td>PRIHDR</td>
</tr>
<tr>
<td>Reconciliation Header</td>
<td>RECONCILIATION FILE</td>
<td>RSGRSG</td>
</tr>
</tbody>
</table>

*Please refer product documentation for exact details*
### Pre-delivered EDI Runtime Content and XSDs—VDA*

<table>
<thead>
<tr>
<th>Transaction Set</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery Forecast</td>
<td>4905</td>
</tr>
<tr>
<td>Invoice</td>
<td>4906</td>
</tr>
<tr>
<td>Advice of Settlement</td>
<td>4907</td>
</tr>
<tr>
<td>Credit Advice</td>
<td>4908</td>
</tr>
<tr>
<td>Ship Notice/Manifest</td>
<td>4913</td>
</tr>
<tr>
<td>Delivery Just-in-time</td>
<td>4915</td>
</tr>
<tr>
<td>Delivery Just-in-time/Just-in-sequence</td>
<td>4916</td>
</tr>
<tr>
<td>Speditionsaufträge</td>
<td>4920</td>
</tr>
<tr>
<td>Ladungsträger-Bewegungen</td>
<td>4927</td>
</tr>
</tbody>
</table>

*Please refer product documentation for exact details*
# Pre-delivered EDI Runtime Content and XSDs— ODETTE*

*Please refer product documentation for exact details*
Pre-delivered EDI Runtime Content and XSDs - ANSI X.12*

<table>
<thead>
<tr>
<th>Transaction Sets</th>
<th>Message Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>20XX</td>
<td>30XX</td>
</tr>
<tr>
<td>03</td>
<td>40</td>
</tr>
</tbody>
</table>

- Insurance Plan Description
- Name and Address Lists
- Associated Data
- Abandoned Property Filings
- Air Shipment Information
- Business Entity Filings
- Motor Carrier Rate Proposal
- Request for Motor Carrier Rate Proposal
- Response to a Motor Carrier Rate Proposal
- Vessel Content Details
- Air Freight Details and Invoice
- Individual Insurance Policy and Client Information
- Property Damage Report
- Election Campaign and Lobbyist Reporting
- Air Shipment Status Message
- Vehicle Shipping Order
- Vehicle Service
- Vehicle Damage
- Multilevel Railcar Load Details
- Vehicle Application Advice
- Vehicle Baying Order
- Dealer Information
- Vehicle Carrier Rate Update
- Student Educational Record (Transcript)
- Student Educational Record (Transcript) Acknowledgment
- Human Resource Information
- Educational Institution Record
- Student Aid Origination Record
- Educational Testing and Prospect Request and Report
- Student Loan Guarantee Result
- Product Registration
- Product Service Claim Response
- Product Service Claim
- Product Service Notification
- Student Loan Transfer and Status Verification
- Request for Student Educational Record (Transcript)
- Response to Request for Student Educational Record (Transcript)
- Report of Injury, Illness or Incident
- Notice of Tax Adjustment or Assessment
- Tax Rate Notification
- Electronic Filing of Tax Return Data Acknowledgment
- Statistical Government Information
- Unemployment Insurance Tax Claim or Charge Information
- Secured Interest Filing
- Business Credit Report
- Notice of Power of Attorney
- Tax Jurisdiction Sourcing
- Motion Picture Booking Confirmation
- Transportation Automatic Equipment Identification
- Train Sheet
- Transportation Appointment Schedule Information
- Revenue Receipts Statement

© 2012 SAP AG. All rights reserved.
<table>
<thead>
<tr>
<th>20XX</th>
<th>30XX</th>
<th>40XX</th>
<th>50XX</th>
<th>60XX</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>40</td>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

- Court and Law Enforcement Notice
- Court Submission
- Environmental Compliance Reporting
- Return Merchandise Authorization and Notification
- Royalty Regulatory Report
- Insurance Underwriting Requirements Reporting
- Premium Audit Request and Return
- Educational Course Inventory
- Application for Admission to Educational Institutions
- Student Enrollment Verification
- Student Loan Pre-Claims and Claims
- Grant or Assistance Application
- Federal Communications Commission (FCC) License Application
- Contractor Cost Data Reporting
- Real Estate Title Evidence
- Loan Verification Information
- Real Estate Settlement Information
- Mortgage Credit Report
- Residential Loan Application
- Secondary Mortgage Market Loan Delivery
- Secondary Mortgage Market Investor Report
- Motor Carrier Load Tender
- Mortgage Note
- Real Estate Inspection
- Motor Carrier Freight Details and Invoice

- Motor Carrier Bill of Lading
- Motor Carrier Delivery Trailer Manifest
- Motor Carrier Shipment Status Inquiry
- Transportation Carrier Shipment Status Message
- Motor Carrier Pickup Manifest
- Motor Carrier Shipment Pickup Notification
- Motor Carrier Loading and Route Guide
- Motor Carrier Tariff Information
- Logistics Service Request
- Logistics Service Response
- Cartage Work Assignment
- Consolidators Freight Bill and Invoice
- Motor Carrier Summary Freight Bill Manifest
- Response to a Cartage Work Assignment
- Trailer Usage Report
- Equipment Inspection Report
- Motor Carrier Package Status
- Data Status Tracking
- Product Source Information
- Real Estate Tax Service Response
- Account Assignment/Inquiry and Service/Status
- Animal Toxicological Data
- Purchase Order Shipment Management Document
- Pricing Support
- Insurance Producer Administration
- Underwriting Information Services
- Periodic Compensation
<table>
<thead>
<tr>
<th>Pre-delivered EDI Runtime Content and XSDs - ANSI X.12*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transaction Sets</strong></td>
</tr>
<tr>
<td><strong>Message Types</strong></td>
</tr>
<tr>
<td><strong>Residential Mortgage Insurance Explanation of Benefits</strong></td>
</tr>
<tr>
<td>Application for Mortgage Insurance Benefits</td>
</tr>
<tr>
<td>Real Estate Information Request</td>
</tr>
<tr>
<td>Real Estate Information Report</td>
</tr>
<tr>
<td>Residential Mortgage Insurance Application Response</td>
</tr>
<tr>
<td>Mortgage Loan Default Status</td>
</tr>
<tr>
<td>Real Estate Title Insurance Services Order</td>
</tr>
<tr>
<td>Mortgage or Property Record Change Notification</td>
</tr>
<tr>
<td>Individual Life, Annuity and Disability Application</td>
</tr>
<tr>
<td>Annuity Activity</td>
</tr>
<tr>
<td>Health Care Benefit Coordination Verification</td>
</tr>
<tr>
<td>Eligibility, Coverage or Benefit Inquiry</td>
</tr>
<tr>
<td>Eligibility, Coverage or Benefit Information</td>
</tr>
<tr>
<td>Property and Casualty Loss Notification</td>
</tr>
<tr>
<td>Insurance/Annuity Application Status</td>
</tr>
<tr>
<td>Healthcare Provider Information</td>
</tr>
<tr>
<td>Patient Information</td>
</tr>
<tr>
<td>Health Care Claim Status Request</td>
</tr>
<tr>
<td>Health Care Information Status Notification</td>
</tr>
<tr>
<td>Health Care Services Review Information</td>
</tr>
<tr>
<td>Voter Registration Information</td>
</tr>
<tr>
<td>Tax or Fee Exemption Certification</td>
</tr>
<tr>
<td>Commercial Vehicle Safety Reports</td>
</tr>
<tr>
<td>Commercial Vehicle Safety and Credentials Information</td>
</tr>
<tr>
<td>Exchange</td>
</tr>
<tr>
<td>Commercial Vehicle Credentials</td>
</tr>
<tr>
<td>Wage Determination</td>
</tr>
<tr>
<td>Cooperative Advertising Agreements</td>
</tr>
<tr>
<td>Reservation (Booking Request) (Ocean)</td>
</tr>
<tr>
<td>Confirmation (Ocean)</td>
</tr>
<tr>
<td>Booking Cancellation (Ocean)</td>
</tr>
<tr>
<td>Shipping Instructions</td>
</tr>
<tr>
<td>Customs Manifest</td>
</tr>
<tr>
<td>Freight Receipt and Invoice (Ocean)</td>
</tr>
<tr>
<td>Canada Customs Information</td>
</tr>
<tr>
<td>Arrival Notice (Ocean)</td>
</tr>
<tr>
<td>Shipment Status Inquiry (Ocean)</td>
</tr>
<tr>
<td>Status Details (Ocean)</td>
</tr>
<tr>
<td>Delivery/Pickup Order</td>
</tr>
<tr>
<td>Terminal Information</td>
</tr>
<tr>
<td>Terminal Operations and Intermodal Ramp Activity</td>
</tr>
<tr>
<td>Vessel Schedule and Itinerary (Ocean)</td>
</tr>
<tr>
<td>Vessel Stow Plan (Ocean)</td>
</tr>
<tr>
<td>Consolidation of Goods In Container</td>
</tr>
<tr>
<td>Consignment Summary List</td>
</tr>
<tr>
<td>Customs Status Information</td>
</tr>
<tr>
<td>U.S. Customs Carrier General Order Status</td>
</tr>
<tr>
<td>Customs Events Advisory Details</td>
</tr>
<tr>
<td>U.S. Customs Automated Manifest Archive Status</td>
</tr>
<tr>
<td>U.S. Customs Acceptance/Rejection</td>
</tr>
<tr>
<td>U.S. Customs Permit to Transfer Request</td>
</tr>
<tr>
<td>U.S. Customs In-Bond Information</td>
</tr>
<tr>
<td>Customs Consist Information</td>
</tr>
<tr>
<td>Customs Customer Profile Management</td>
</tr>
</tbody>
</table>
### Pre-delivered EDI Runtime Content and XSDs - ANSI X.12*

<table>
<thead>
<tr>
<th>Transaction Sets</th>
<th>Message Types</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>20XX</strong></td>
<td><strong>30XX</strong></td>
</tr>
<tr>
<td>03</td>
<td>40</td>
</tr>
</tbody>
</table>

- Carrier Interchange Agreement (Ocean)
- Cargo Insurance Advice of Shipment
- Rail Carrier Shipment Information
- Rail Carrier Freight Details and Invoice
- Trailer or Container Repair Billing
- Rail Carhire Settlements
- Rail Carrier Waybill Interchange
- Rail Advance Interchange Consist
- Advance Car Disposition
- Car Handling Information
- Estimated Time of Arrival and Car Scheduling
- Equipment Order
- Rail Industrial Switch List
- Rail Carrier Services Settlement
- Rail Waybill Request
- Rail Revenue Waybill
- Railroad Retirement Activity
- Railroad Station Master File
- Rail Deprescription
- Railroad Reciprocal Switch File
- Railroad Mark Register Update Activity
- Standard Transportation Commodity Code Master
- Locomotive Information
- Railroad Junctions and Interchanges Activity
- Shipment Weights
- Railroad Event Report
- Railroad Problem Log Inquiry or Advice
- Railroad Service Commitment Advice
- Railroad Parameter Trace Registration
- Railroad Equipment Inquiry or Advice
- Railroad Price Distribution Request or Response
- Rail Rate Reply
- Rate Request
- Rate Docket Journal Log
- Railroad Clearance
- Rail Route File Maintenance
- Ratemaking Action
- Rate Docket Expiration
- Rate Group Definition
- Miscellaneous Rates
- Rail Scale Rates
- Medical Event Reporting
- Vendor Performance Review
- Pricing History
- Clauses and Provisions
- Requisition
- Material Obligation Validation
- Income or Asset Offset
- Material Due-In and Receipt
- Logistics Reassignment
- Notice of Employment Status
- Contract Abstract
- Contract Completion Status

© 2012 SAP AG. All rights reserved.
<table>
<thead>
<tr>
<th>Transaction Sets</th>
<th>Message Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-delivered EDI Runtime Content and XSDs - ANSI X.12*</td>
<td></td>
</tr>
</tbody>
</table>

### Pre-delivered EDI Runtime Content and XSDs - ANSI X.12*

<table>
<thead>
<tr>
<th>20XX</th>
<th>30XX</th>
<th>40XX</th>
<th>50XX</th>
<th>60xx</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>40</td>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

#### Message Types

- Contract Payment Management Report
- Application Advice
- U.S. Customs Export Shipment Information
- Tax Information Exchange
- Transportation Services Tender
- Financial Return Notice
- Excavation Communication
- Debit Authorization
- Intermodal Ramp Activity
- Payment Cancellation Request
- Well Information
- Planning Schedule with Release Capability
- Maintenance Service Order
- Application Control Totals
- Intermodal Group Loading Plan
- Price/Sales Catalog
- Request for Routing Instructions
- Payment Cancellation Request
- Routing Instructions
- Contract Pricing Proposal
- Project Schedule Reporting
- Application Control Totals
- Invoice
- Price/Sales Catalog
- Project Schedule Reporting
- Request for Quotation
- Credit/Debit Adjustment
- Specifications/Technical Information
- Electronic Filing of Tax Return Data
- Nonconformance Report
- General Request, Response or Confirmation
- Response to Request for Quotation
- Project Schedule Reporting
- Product Transfer Account Adjustment
- Organizational Relationships
- Price Authorization Acknowledgment/Status
- Commission Sales Report
- Inventory Inquiry/Advice
- Joint Interest Billing and Operating Expense Statement
- Material Claim
- Payment Order/Remittance Advice
- Material Safety Data Sheet
- Financial Information Reporting
- Response to Product Transfer Account Adjustment
- Account Analysis
- Purchase Order
- Lockbox
- Asset Schedule
- Product Activity Data
- Product Activity Data

© 2012 SAP AG. All rights reserved.
<table>
<thead>
<tr>
<th>Pre-delivered EDI Runtime Content and XSDs - ANSI X.12*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transaction Sets</strong></td>
</tr>
<tr>
<td><strong>Message Types</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>20XX</th>
<th>30XX</th>
<th>40XX</th>
<th>50XX</th>
<th>60XX</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>40</td>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application Advice</th>
<th>Asset Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Information Exchange</td>
<td>Product Activity Data</td>
</tr>
<tr>
<td>Financial Return Notice</td>
<td>Routing and Carrier Instruction</td>
</tr>
<tr>
<td>Debit Authorization</td>
<td>Shipment Delivery Discrepancy Information</td>
</tr>
<tr>
<td>Payment Cancellation Request</td>
<td>Purchase Order Acknowledgment</td>
</tr>
<tr>
<td>Planning Schedule with Release Capability</td>
<td>Ship Notice/Manifest</td>
</tr>
<tr>
<td>Application Control Totals</td>
<td>Shipment and Billing Notice</td>
</tr>
<tr>
<td>Price/Sales Catalog</td>
<td>Shipment Information</td>
</tr>
<tr>
<td>Mortgage Credit Report Order</td>
<td>Freight Invoice</td>
</tr>
<tr>
<td>Benefit Enrollment and Maintenance</td>
<td>Purchase Order Change Request - Buyer Initiated</td>
</tr>
<tr>
<td>Health Care Claim Payment/Advice</td>
<td>Receiving Advice/Acceptance Certificate</td>
</tr>
<tr>
<td>Procurement Notices</td>
<td>Shipping Schedule</td>
</tr>
<tr>
<td>Health Care Claim</td>
<td>Report of Test Results</td>
</tr>
<tr>
<td>Trading Partner Profile</td>
<td>Text Message</td>
</tr>
<tr>
<td>Project Cost Reporting</td>
<td>Purchase Order Change Acknowledgment/Request - Seller Initiated</td>
</tr>
<tr>
<td>Request for Quotation</td>
<td>Production Sequence</td>
</tr>
<tr>
<td>Specifications/Technical Information</td>
<td>Product Transfer and Resale Report</td>
</tr>
<tr>
<td>Nonconformance Report</td>
<td>Electronic Form Structure</td>
</tr>
<tr>
<td>Response to Request for Quotation</td>
<td>Order Status Inquiry</td>
</tr>
<tr>
<td>Product Transfer Account Adjustment</td>
<td>Order Status Report</td>
</tr>
<tr>
<td>Price Authorization Acknowledgment/Status</td>
<td>Component Parts Content</td>
</tr>
<tr>
<td>Inventory Inquiry/Advice</td>
<td>Residential Mortgage Insurance Application</td>
</tr>
<tr>
<td>Material Claim</td>
<td>Commodity Movement Services</td>
</tr>
<tr>
<td>Material Safety Data Sheet</td>
<td>Commodity Movement Services Response</td>
</tr>
<tr>
<td>Response to Product Transfer Account Adjustment</td>
<td>Grocery Products Purchase Order</td>
</tr>
<tr>
<td>Purchase Order</td>
<td>Grocery Products Purchase Order Change</td>
</tr>
<tr>
<td>Manufacturer Coupon Family Code Structure</td>
<td>Product Authorization/De-authorization</td>
</tr>
</tbody>
</table>
Pre-delivered EDI Runtime Content and XSDs - ANSI X.12*

<table>
<thead>
<tr>
<th>Transaction Sets</th>
<th>Message Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>20XX 30XX 40XX 50XX 60XX</td>
<td>Price Information</td>
</tr>
<tr>
<td>03 40 10 20 30 40 50 60 10 20 30 40 50 10 20</td>
<td>Grocery Products Invoice</td>
</tr>
<tr>
<td></td>
<td>Manufacturer Coupon Redemption Detail</td>
</tr>
<tr>
<td></td>
<td>Direct Store Delivery Summary Information</td>
</tr>
<tr>
<td></td>
<td>Market Development Fund Allocation</td>
</tr>
<tr>
<td></td>
<td>Market Development Fund Settlement</td>
</tr>
<tr>
<td></td>
<td>Retail Account Characteristics</td>
</tr>
<tr>
<td></td>
<td>Customer Call Reporting</td>
</tr>
<tr>
<td></td>
<td>Coupon Notification</td>
</tr>
<tr>
<td></td>
<td>Item Maintenance</td>
</tr>
<tr>
<td></td>
<td>Promotion Announcement</td>
</tr>
<tr>
<td></td>
<td>Contract &amp; Rebate Management Transaction</td>
</tr>
<tr>
<td></td>
<td>Deduction Research Report</td>
</tr>
<tr>
<td></td>
<td>Item Information Request</td>
</tr>
<tr>
<td></td>
<td>Delivery/Return Base Record</td>
</tr>
<tr>
<td></td>
<td>Delivery/Return Acknowledgment or Adjustment</td>
</tr>
<tr>
<td></td>
<td>Product Dimension Maintenance</td>
</tr>
<tr>
<td></td>
<td>Loss or Damage Claim - General Commodities</td>
</tr>
<tr>
<td></td>
<td>Loss or Damage Claim - Motor Vehicle</td>
</tr>
<tr>
<td></td>
<td>Claim Tracer</td>
</tr>
<tr>
<td></td>
<td>Claim Status Report and Tracer Reply</td>
</tr>
<tr>
<td></td>
<td>Automotive Inspection Detail</td>
</tr>
<tr>
<td></td>
<td>Warehouse Shipping Order</td>
</tr>
<tr>
<td></td>
<td>Warehouse Stock Transfer Shipment Advice</td>
</tr>
<tr>
<td></td>
<td>Warehouse Stock Transfer Receipt Advice</td>
</tr>
<tr>
<td></td>
<td>Warehouse Shipping Advice</td>
</tr>
<tr>
<td></td>
<td>Warehouse Inventory Adjustment Advice</td>
</tr>
<tr>
<td></td>
<td>Functional Group Totals</td>
</tr>
<tr>
<td></td>
<td>Response to a Load Tender</td>
</tr>
<tr>
<td></td>
<td>Secured Receipt or Acknowledgment</td>
</tr>
<tr>
<td></td>
<td>File Transfer</td>
</tr>
<tr>
<td></td>
<td>Functional Acknowledgment</td>
</tr>
<tr>
<td></td>
<td>Set Cancellation</td>
</tr>
<tr>
<td></td>
<td>Implementation Acknowledgment</td>
</tr>
<tr>
<td></td>
<td>Set Cancellation</td>
</tr>
<tr>
<td></td>
<td>Implementation Acknowledgment</td>
</tr>
</tbody>
</table>

*Please refer product documentation for exact details*
FUNCTION LIBRARIES
Function Libraries

**UDFArithmeticsPool**
- bigDecimalAdd
- bigDecimalSubtract
- bigDecimalMultiply
- bigDecimalDivide
- bigDecimalRound
- bigDecimalRoundUp
- bigDecimalSum
- bigDecimalMod
- bigDecimalFormatNum

**UDFDateTimePool**
- getDate
- getTime
- constantDate
- constantDateFrom
- constantDateTo
- getDateDifference
- getMonthDifference
- getDateAfterDays
- getFirstOfMonthAfterMonths
- getDateFormat
- getStartOfTimePeriod
- getEndDateOfTimePeriod
- getStartOfOneOrTwoDates
- getEndOfOneOrTwoDates
Function Libraries

UDFGlobalsPool

- initGlobalCounter
- increaseGlobalCounter
- getGlobalCounterValue
- setParameter
- getParameter
- increaseOrCreateGlobalCounterIfTrue
- hasGlobalCounter

UDFUtilsPool

- hasValue
- hasOneOfSuchValues
- trimZeroLeft
- trimRight
- splitToIndex
- formatValueByZero
- headString
- tailString
- isNumber
- toNumber
- isNumberEqualZero
- isNumberNotEqualZero
- minusFromBeginToEnd
- minusFromEndToBegin
- hasValue
Function Libraries

UDFVdaPool

- setVDADecimalSeparator
- formatToVDAValue
- isValidVDADate
- transformVDADate
- transformToVDADate
- trimVDAZeroRight
- removeIDOCSeparator
Function Libraries

UDFNodePool

- createIfHasValue
- createIfExistsAndHasValue
- createIfHasOneOfSuchValues
- passIfHasValue
- assignValueByCondition
- simpleUseOneAsManyAndSplitByEachValue
- simpleUseOneAsMany
- deleteSuppress
- getFirstContextValue
- hasValue
- hasOneOfSuchValues
- contextHasOneOfSuchValues
- useOneContextAsMany
- concatToOneQueue

- groupContextValues
- concatContextValues
- formatByContextExample
- createMultipleCopies
- createMultipleContextCopies
- fragmentSingleValue
- concatTwoQueuesToOne
- getFieldValsByStr
- getValueByIndex
- createNumberRange
- createContextsForFixedBlockSize
- buildBlocksAndGetValueByIndex
- createContextsForFixedBlockSize001
- buildBlocksAndGetValueByIndex001
- splitValueStringToContextValues