EDI and IDOC Implementation for SAP Sales Order Processing

Peter Sammons, IT Architect, Courier Corporation
Learning Points

- What is EDI.
- What are IDOCs.
- Configuring SAP for EDI.
- Managing IDOCs in SAP to support EDI initiatives
- Adding data to IDOCs for additional EDI requirement.
Agenda

- About Courier
- EDI
  - Overview
  - Standards
- IDOCs
  - What are IDOCs?
  - IDOC Processing
  - SAP Configuration for IDOCs and EDI
- Adding Data to IDOCs
- Wrap Up
  - Lessons Learned & Benefits
  - Questions
Courier Corporation

- Founded 1824
- Headquarters: North Chelmsford, MA
- Leader in Digital Printing Solutions
- Employees: 1,900
- Printing company with 4 printing plants
Courier Corporation

- 3rd Largest Book Manufacturer in US
  - $259 million in Sales
  - Leader in Digital Printing Solutions
- Book Publisher
  - Dover Publications
  - Research & Education Association
  - Creative Homeowner
- Active EDI Program connected to SAP since 2005
  - 3 Publisher
  - 22 Customers
  - 4700 Documents / Month
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EDI Overview

- What is EDI
  - Electronic Data Interchange
  - A method for passing process documents between companies in an electronic format.

- A Quasi Standard
  - Each customer has their own interpretation.
  - Some customers cannot handle standard segments.
  - Codes within a field are not always standard.
EDI Process Overview

Partner Order → Partner EDI Mailbox

Courier EDI Mailbox → Order 850

Order 850 → Functional Ack 997

Functional Ack 997 → PO Ack 855

PO Ack 855 → Invoice 810

Invoice 810 → SAP FLAT FILE

SAP FLAT FILE → eVision

eVision → EDI Tool & Scheduler

EDI Tool & Scheduler → SAP FLAT FILE

SAP FLAT FILE → SAP IDOC DATABASE

SAP IDOC DATABASE → SAP Order

SAP Order → SAP Delivery

SAP Delivery → SAP Invoice

SAP Invoice → Partner Invoice

Partner Invoice → Partner EDI Mailbox

Partner EDI Mailbox → PO Ack
EDI Document Types and Components

- **Document Types (300 +)**
  - 850  Purchase Order
  - 855  Purchase Order Acknowledgement
  - 856  Advanced Shipment Notice
  - 810  Invoice
  - 997  Functional Acknowledgement

- **Document Components**
  - Sender & Receiver IDs
  - Segments and Delimiters
EDI Standards

- Standards
  - X12
  - EDIFACT

- Interchange Control Header ISA
  - Functional Group Header GS
  - Message Header ST
  - User Data Segments
  - Message Trailer SE
  - Functional Group Trailer GE
- Interchange Trailer IEA
Sample EDI Document (850 / PO)

- **Header**
  - From / To
  - Group
  - Document
    - PO #
    - Dates
    - Items
- **Summary**

```
ISA*00*         *00*         *ZZ*AMAZON
*ZZ*201338X     *120411*0426*U*00305*000007494*0*P*:

GS*PO*AMAZON*201338X*20120411*0426*7494*X*004010
ST*850*0001

BEG*00*NP*S0930755**20120411
CSH*Y

DTM*064*20120412
DTM*063*20120504
N1*ST**15*8013861

PO1*1*5*EA*19.95*PE*IB*0486992314
PO1*2*4*EA*19.95*PE*IB*0486992276
PO1*3*2*EA*24.95*PE*IB*048699225X
PO1*4*7*EA*39.95*PE*IB*0486992209
PO1*5*46*EA*19.95*PE*IB*0486990974

CTT*5*64
SE*14*0001
GE*1*7494
IEA*1*000007494
```
EDI Communications

- **VAN (Value added network)** – Email box in the cloud. Expensive.

- **FTP (File transfer protocol)** – Requires FTP server. Documents are pulled

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SAP IDOC – Intermediate Document

- SAP Standard Interface Methodology
- Standard Documents exist for many SAP transactions
- Tools are supplied for monitoring and maintenance
- Inbound vs. Outbound
- Message Types
IDOC Correction - BD87

- Error Detail
- Drill to IDOC details
- One step vs. Two Step Reprocessing
IDOC Detail View

- Accessible from WE02 or BD87
- Data on right reflects selection on left
- Only populated data is shown
SAP Configuration

- WEDI
- Administration
- Test
- Documentation
- Development
- Control
SAP Configuration

- Partner Profiles – WE20
  - All partners doing EDI transactions must have their own profile.
- Logical Systems – BD84
  - Identifies each SAP system.
- RFC Connections – SM59

- Ports – WE21
  - Specifies source or destination of IDOCs
SAP Configuration – Partner Profiles - Overview

- WE20
- Outbound
  - ASN
  - POA
  - INV
- Inbound
  - PO
- Process Code
- Use F4 or WE64 to get list of possible codes
- Receiver Port
- Output Mode
- IDOC Type
  - Basic
  - Extension (custom)
- **Message Control**
  - F4 for options

- **Message Type**
  - Same as printed options

- **Process Code**
  - F4 or WE64 for options
  - Double click to see function module
# SAP Configuration — Partner Profiles – Message Type Crib Sheet

## Inbound Messages

<table>
<thead>
<tr>
<th>Message Type</th>
<th>Basic Type</th>
<th>Extension</th>
<th>Application</th>
<th>Output Type</th>
<th>Process Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ORDE</td>
</tr>
</tbody>
</table>

## Outbound Messages

<table>
<thead>
<tr>
<th>Message Type</th>
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<th>Extension</th>
<th>Application</th>
<th>Output Type</th>
<th>Process Code</th>
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</thead>
<tbody>
<tr>
<td>ORDRSP</td>
<td>ORDERS05</td>
<td>ZORDER05</td>
<td>V1</td>
<td>BA00</td>
<td>SD10</td>
</tr>
<tr>
<td>DESADV</td>
<td>DELVRY03</td>
<td>ZDELVRY3</td>
<td>V2</td>
<td>ZD00</td>
<td>DELV</td>
</tr>
<tr>
<td>INVOIC</td>
<td>INVOIC02</td>
<td></td>
<td>V3</td>
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## Adding Data to IDOCs

<table>
<thead>
<tr>
<th>Project</th>
<th>Enhancement / User Exit</th>
<th>Component / Function Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMOD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Defines projects that contain SAP Enhancements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can be enabled or disabled for testing</td>
<td></td>
</tr>
<tr>
<td>SMOD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Access Enhancements and Modify Components</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Component Descriptions exist here and not in CMOD</td>
<td></td>
</tr>
<tr>
<td>Most of my work was done in outbound IDOCs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Customer required data not in standard IDOC but exists in SAP document</td>
<td></td>
</tr>
</tbody>
</table>
Finding the Correct Enhancement

- Use F4 in SMOD
  - Search for enhancements with your document description in the Exit Name or more likely the Short Text.

- Use Google
  - “How do I add data to SAP IDOC for Purchase Orders”
Looking at Components with SMOD

- Make sure to use scroll to find all components.
Function Module for Enhancement

- When you double click on the include the first time, SAP will ask you to create the include.
- Look at structures to see what data is available.
- Run in debugger and validate available data.

All code goes inside include
# Courier’s EDI / IDOC Enhancements

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<tr>
<td>ZSEDI</td>
<td>Order Create</td>
<td>VEDA0001</td>
<td>Import Order Cancel Date to Z-field.</td>
</tr>
<tr>
<td>ZEDIACK</td>
<td>PO Acknowledgement</td>
<td>SDEDI001</td>
<td>Add Sales Org to Receiver ID. Multiple publishers using same customer number.</td>
</tr>
<tr>
<td>ZEDIASN</td>
<td>Advanced Ship Notice</td>
<td>V56K0001</td>
<td>Add Sales Org to Receiver ID. Multiple publishers using same customer number.</td>
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<tr>
<td>ZEDIASN</td>
<td>Advanced Ship Notice</td>
<td>V56K0001</td>
<td>Add Item Data: BOL #, Order Qty, Weight, Carton Qty.</td>
</tr>
<tr>
<td>ZEDIINV</td>
<td>Invoicing</td>
<td>LVEDF001</td>
<td>Add Sales Org to Receiver ID. Multiple publishers using same customer number.</td>
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Wrap Up
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Lessons Learned and Benefits

- EDI provides easy processing of orders
  - No data entry
  - Automated feedback

- SAP Provides a robust IDOC environment
  - Supports EDI and many other interfaces
  - Easy to review, maintain and reprocess

- SAP can be easily extended to conform to different interpretations of the EDI standards
Questions?

Interchange Group Document

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Thank you for participating.

Please remember to complete and return your evaluation form following this session. For ongoing education on this area of focus, visit the Year-Round Community page at www.asug.com/ycr

SESSION CODE: 2504
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