

Digital Exchange by Deloitte (DXD) – technical details

Introduction

DXD is an integration channel that compliments SAP Ariba Network Integration options for Purchase Orders and Invoices. DXD translates the Purchase Orders coming from Ariba Network into one of the supported formats as per the wish of the Supplier. The resulting document is then delivered to the Supplier using one of the supported channels as per the wish of the Supplier. On the return path, from the Supplier's back-end system to Ariba, DXD accepts PDF Invoices from Suppliers by email, translates them into cXML format and uploads them into Ariba Network. Before the Invoice is sent to Ariba Network, it can be enriched with the data from the original Purchase Order. The onboarding process is described later in a separate chapter.

Abbreviations/Vocabulary

Abbreviation	Meaning	Explanation
AN	SAP Ariba Network	A core module of the SAP Ariba solution suite
ANID	Ariba Network ID	This is a unique Identifier for every SAP Ariba Network Account. ANID is assigned to Buyers and Suppliers
BES	Backend system	Supplier's backend system can be any ERP or any actual accounting system that supports the document formats mentioned in the Supported Standards paragraph below
CSV	Comma Separated Values	A flat file format
DB	Database	Software component for storing large amounts of data
DXD	Digital Exchange by Deloitte	Integration component for AN Suppliers
EDIFACT	Electronic Data Interchange for Administration Commerce and Transport	An EDI standard implemented by United Nations
HTTPs	Hyper Text Transfer Protocol	A protocol used for webservices
IDOC	Intermediate document	An XML format SAP uses to exchange data
JSON	Javascript Object Notation	A structured file used for REST webservices
PDF	Portable Document Format	Immutable document format. In the context of this document we restrict the meaning of PDF to software generated PDF documents. Therefore documents containing digital text not scanned images.
PID	Process Integration Document	Document created by Deloitte that will be provided to Suppliers and Buyers to capture integration related information.

PO	Purchase Order	A document describing an order of goods or services from a Supplier
REST	Representative State Transfer	Format used for stateful webservices
sFTP	Secure File Transfer Protocol	A secured way to exchange files over the internet
SOAP	Service Oriented Architecture Protocol	An XML format used for stateless webservices
XML	Extensible Markup Language	A structure file used for machine to machine integration

Supported Standards

Out-of-the-box supported* formats of POs and Invoices are:

- IDOC,
- EDIFACT,
- CSV,
- XML,
- JSON.

Out-of-the-box supported* integration channels are:

- sFTP,
- SOAP via HTTPs,
- REST via HTTPs,
- Email.

*Out-of-the-box supported formats/channels still need collaboration between the DXD team and the Supplier to align on the specifics of each integration.

Workflow

PO Flow

PO Flow consists of several steps:

1. *PO Created and sent to AN:* Buyer creates a PO in their BES (or Ariba Buying) as they do already and send it to AN. This step is not facilitated by DXD.
2. *PO Sent to DXD:* AN will create a PDF representation of the PO and email it to the Supplier account on AN. This triggers an email to DXD with the PDF as an attachment.
3. *PO Converted, stored in DXD DB and sent to Supplier:* DXD will convert the PO into a specified format from the supported formats and send it to the Supplier via the specified channel. PO data are also stored in the DXD DB so that they can be used later for Invoice enrichment.
4. *PO Received and ingested into Supplier BES:* PO will be received by the Supplier via the specified channel, in the specified format and imported into their own system. This step is not facilitated by DXD.

Invoice Flow

PDF Uploader Feature is not available for all countries. The countries where it is not available are often called 'proforma countries'. If the Supplier belongs to such a country, then the Supplier cannot use the PDF Uploader and

therefore cannot use the DXD Invoicing capabilities. An alternative is to use OpenICS along with DXD to overcome such limitations. With Open ICS there is no dependency on the PDF Uploader and therefore the Supplier can use DXD Invoicing capabilities.

Invoice Flow consists of several steps:

1. Invoice Flow with PDF Uploader Feature (DXD Standard)

- a. *Invoice created and sent to DXD*: Supplier will raise the Invoice in their BES as they do today. The system will produce a PDF version of the Invoice and email it to Ariba PDF Uploader predefined email address. This step is not facilitated by DXD.
- b. *Invoice converted and enriched*: Email with the PDF Invoice will be received by DXD. DXD will convert the Invoice into CXML format and optionally enrich the Invoice with PO data from the DXD DB.
- c. *Invoice sent to Buyer*: AN will receive the Invoice and using the preconfigured integration, send it to the Buyer's backend system (eg Ariba Buying) just like any other Invoice from AN. This step is not facilitated by DXD.
- d. *Invoice received and ingested into Buyer's BES*: The Invoice will be received just like any other Invoice coming from AN.

2. Invoice Flow with Open ICS Feature (DXD Global)

- a. *Invoice created and sent to DXD*: Supplier will raise the Invoice in their backend system as they do today. The system will produce a PDF version of the Invoice and email it to a DXD predefined email address.
- b. *Invoice converted and enriched*: Email with the PDF Invoice will be received by DXD. DXD will convert the Invoice into CXML format and optionally enrich the Invoice with PO data from the DXD DB.
- c. *Invoice sent to Buyer*: AN will receive the Invoice and using the preconfigured integration, send it to the Buyer's backend system (eg. Ariba Buying) just like any other Invoice from AN. This step is not facilitated by DXD.
- d. *Invoice received and ingested into Buyer's BES*: The Invoice will be received just like any other Invoice coming from AN.

DXD Different Tiers

- Standard:
 - PO flow (for Purchase Order documents),
 - Ariba PDF Uploader (for Invoice documents).
- Global:
 - PO flow (for Purchase Order documents),
 - Ariba Open ICS (for Invoice documents).

DXD Database Information

DXD database will store PO information in order to perform follow-up checks and optionally enrich the future Invoices coming to AN.

The information captured is:

- Header Level PO Data:
 - Order Number,
 - Order Date,
 - Buyer, Supplier, Sold To, Ship To Addresses,
 - Currency,
 - Tax Category,
 - Tax Rate,
 - Tax Description,
 - Tax Exempt Detail,
 - Total Net Amount,
 - Total Tax Amount,
 - Total Invoice Amount.

- Line Level PO Data:
 - Line Order Number,
 - Line Type,
 - Line Requested Delivery Date,
 - Line Quantity,
 - Line Quantity Unit of Measure,
 - Line Unit Price,
 - Line Supplier Part ID,
 - Line Buyer Part ID,
 - Line Description,
 - Line Net Amount,
 - Line Total Amount.

Invoice Enrichment

DXD compares the Invoice against the PO information. The data checked are divided into two categories:

Header Level Data:

- Check if payment terms are in the header and if not add them,
- Check if the company code is on the header and if not add it,
- Check if there is a correct billing address is and if not add it.

Line Level Data:

- Check if Part # is there and if not add it,
- Check if Customer Part # is there and if not add it for PO Line Number determination.

Additional checks/enrichments can be accommodated for a tailored-made solution. This might require customization of the DXD solution and be subject to extra charges.

Onboarding Process

Onboarding Process for Buyers

1. Buyer to provide 5 sample POs per PO Template to cover the different kinds of POs the Client is using,
 - a. POs to be shared in PDF format, generated by the AN system,
 - b. POs to be shared via email to the Project-assigned Deloitte resources,
 - c. Collection Period: 1 week.
2. Buyer to provide a list of Ariba and SAP Business Network customizations as well as related Transaction Rules for PO/Invoice (excel file to be filled – provided by Deloitte) - 1 week,
 - a. Excel file with customizations and transaction rules (template provided by the Project-assigned Deloitte resources),
 - b. Excel file to be shared via email to the Project-assigned Deloitte resources,
 - c. Collection Period: 1 week.

If Supplier Groups are used, then the relevant Transaction Rules for the respective Supplier Group.

3. Buyer to provide list of SAP Business Network customizations – 1 week,
 - a. Excel file with customizations (template provided by the Project-assigned Deloitte resources),
 - b. Excel file to be shared via email to the Project-assigned Deloitte resources,
 - c. Collection Period: 1 week.
4. Testing the PO/Invoice scenarios:
 - a. Test POs will be raised from the Buyer towards the DXD Supplier (as normal),
 - b. DXD to receive the PO, translate it, save it in the DXD DB and send it to the Supplier,
 - c. Supplier to receive the PO via DXD (predefined Integration channel and format),
 - d. Supplier to issue Test Invoice and send it to DXD (predefined Integration channel and format),
 - e. DXD to receive the Test Invoice, translate it and post it on SAP Business Network,
 - f. Buyer to receive the Test Invoice.

Onboarding Process for Suppliers

1. Supplier to provide 5 sample Invoices per Invoice Template to cover the different kinds of invoices the Client is using,
 - a. Invoices to be shared in PDF format, generated by Supplier's accounting system,
 - b. Invoices to be shared via email to the Project-assigned Deloitte resources,
 - c. Collection Period: 1 week.
2. Supplier to provide Process Integration Document (PID):
 - a. Excel file with information on the Process flow and Integration preferences (template provided by the Project-assigned Deloitte resources),
 - b. Excel file to be shared via email to the Project-assigned Deloitte resources,
 - c. Collection Period: 2 weeks.
3. DXD Team to setup DXD based on the [CHPID](#) – 2 weeks.
4. Testing the PO/Invoice scenarios:
 - a. Test POs will be raised from the Buyer towards the DXD Supplier (as normal),
 - b. DXD to receive the PO, translate it, save it in the DXD DB and send it to the Supplier,
 - c. Supplier to receive the PO via DXD (predefined Integration channel and format),
 - d. Supplier to issue Test Invoice and send it to DXD (predefined Integration channel and format),
 - e. DXD to receive the Test Invoice, translate it and post it on SAP Business Network,
 - f. Buyer to receive the Test Invoice.

Reporting

DXD provides a daily summary of documents that have been processed by DXD. This is sent to a preconfigured email address as instructed by the Buyer, and the information is then promptly deleted by DXD without a backup.

The report includes a summary of the transactions that took place for the Buyer and can be (optionally) customized* to include further information.

*Report customization may be subject to additional charges.

Error Handling

In case DXD is unable to capture all required data as defined by the extraction scenarios, support personnel will be alerted, and the document will be held in a work queue. Failure-to-capture issues will be investigated so that the document is either:

- Successfully processed* and sent to the Supplier on Ariba Network in the usual way; or
- Forwarded back to the Supplier or to an alternative email address as instructed by the Supplier for manual processing.

Email notifications can be set on:

- AN level:
 - Send a notification when PDF invoices are undeliverable or rejected,
 - Send a notification when draft invoices are created from the converted PDF Invoices.
- DXD level:
 - Automatically** when the document enters the intervention queue.

SLA for error handling is part of the Terms of Use.

*Documents successfully processed and posted but failing on Ariba Network should be reviewed and corrected by the Supplier on Ariba Network and then resubmitted manually via the Ariba Network User Interface.

**Automatic email notification can be set up and is subject to extra fees. A daily report with documents in the intervention queue is included as standard.

Requirements and Restrictions

SAP Ariba Required Licenses

DXD is utilizing the SAP Ariba feature of PDF uploader hence there is a dependency on the SAP Ariba solution. For countries where PDF Uploader is not enabled by SAP Ariba, DXD uses an OpenICS license. Clients need to already own or procure a license for OpenICS and share credentials with DXD.

For Clients using the Ariba PDF Uploader Feature, DXD has a dependency on the SAP Ariba solution. If the Ariba PDF uploader feature is down or in degradation, then the DXD solution can be affected and result in the failure of posting the Invoice to the AN. Other Ariba features (Buying, Invoicing, Business Network, etc) degradation might affect the DXD solution and any related Ariba Support Case should be administered by the Buyer.

Invoice Email Requirements (for Suppliers)

- Supplier needs to send the Invoice to the predefined email address, specified in the PID document,
- In the case of PDF Uploader feature usage, the email subject should only contain the ANID of the Buyer,
- In the case of Open ICS feature usage, the email subject should only contain the ANID of the Buyer and the Supplier "BuyerANID.SupplierANID",
- Each email should hold only one attachment - PDF Invoice,
- Attached document should not exceed five (5) pages in length. Deloitte reserves the right to charge for additional pages beyond five at one fifth of the standard document charge,
- Attached document should be no more than 100 KB,
- Password-protected documents cannot be opened without the password,

Open ICS Requirements are dictated by Ariba and specific guidelines can be found in the latest official Ariba OpenICS documentation.

PDF Uploader Requirements are dictated by Ariba and specific guidelines can be found in the latest official Ariba PDF Uploader documentation.

Data Requirements

PDF Invoice coming from the Supplier needs to have a set of required data present. These include but are not limited to:

- PO Number.