Transaction Document Processing with LANSA Composer Version 3.0

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Since its release two years ago, LANSA Composer's transport, transformation and process orchestration features have provided a very flexible and code-free framework that can be used to solve almost any type of Business Process Integration (BPI) challenge.

LANSA Composer Version 3 further simplifies the task of building processes with the addition of ready-made transaction document processes. The enhanced framework provides complete Processing Sequences that you can copy and extend, or use as a basis for custom processes.

With LANSA Composer you can solve virtually any BPI challenge. However, we have found that many BPI requirements follow a common pattern that is characterized by:

- Transaction documents (EDI, XML, etc.) are to be exchanged with trading partners.
- Each transaction document may contain one or more discreet business transactions.
- The information in the transaction document is to be mapped to or from an application database.
- Application-specific functionality is to be executed to process the transaction.
- An acknowledgement is to be sent to the originating trading partner.

Although LANSA Composer has always provided the means to solve this type of BPI challenge, this particular pattern is so universal that Version 3 will add a pre-built solution to make handling of this common BPI pattern even easier. It comprises:

- A transaction document processing framework to handle inbound and outbound document flows that may be modified and extended to suit specific requirements.
- A transaction document database and a new Document Manager application, that provides visibility and an audit trail of the inbound/outbound document flows.

LANSA Composer is a highly visual and code-free tool that is intended for use by business analysts to design and implement solutions to integration problems. Without writing any program code, LANSA Composer allows you to automate manual processes, eliminate re-keying of data and reduce the amount of paper, email, fax and human interaction required to complete a given business process.

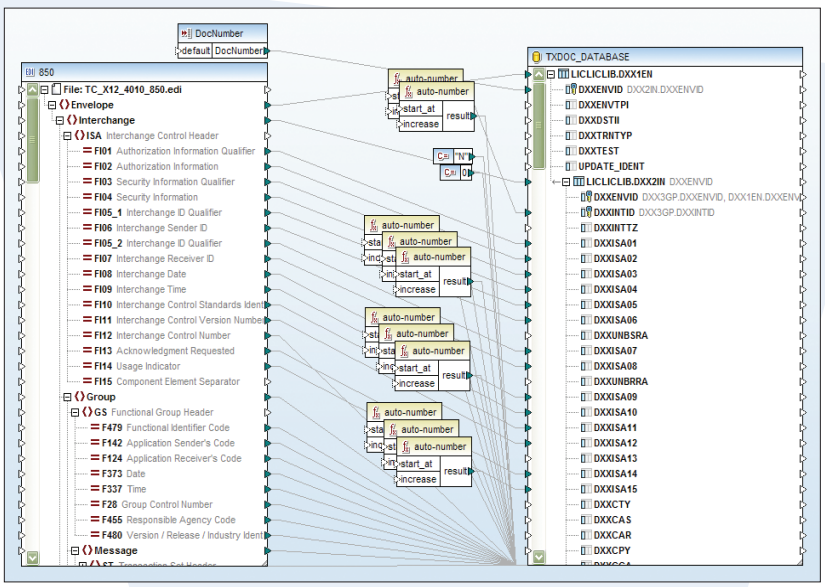

Figure 1: Example inbound map for an EDI X12 850 (purchase order) transaction as shipped with LANSA Composer.

Transaction Document Processing (TDP) Framework

Version 3 of LANSA Composer will include a near ready-to-use TDP framework. Customers will be able to very quickly modify and extend the framework to handle the types of transaction documents in use and to accommodate the specific requirements of their trading and processing environment.

The new framework fully exploits the proven LANSA Composer engine, but in addition provides a model transaction document implementation, which includes the following new components:

Activities, the building blocks of a LANSA Composer process orchestration, encapsulate the functionality to perform a specific task (often a file transport task). Version 2 shipped with over 50 activities, Version 3 will ship with even more.

Processing Sequences in LANSA Composer provide the orchestration function by allowing you to combine Activities and Transformation Maps with processing directives, such as loops and conditions to complete a business process. Version 3 will ship with pre-built Processing Sequences that implement the inbound and outbound TDP. They can be used as shipped or as the basis for a custom solution.

Transformation Maps define how to transform or map data between disparate formats including XML, EDI, Excel, text files, Web service functions, and database tables. Version 3 will ship with example Transformation Maps for two common EDI X12 transactions.

Inbound TDP

Because most of the variables specific to an implementation are captured in trading partner definitions and transport configurations, the supplied Processing Sequence for inbound TDP can generally be used "as is". Its main steps are: ➔

- Loop for each trading partner.
- Receive transaction documents from the trading partner.
- Loop for each received transaction document.
- Register the received transaction document in the transaction document database (each subsequent processing step updates the history and status).
- Determine the document type and the specific transaction type(s) in it.
- Identify and execute the transformation map that applies to the combination of document type, transaction type and trading partner.
- Invoke customer-specific processing.
- Send an acknowledgement.

Implementation-specific variations on these steps can easily be accommodated by copying and adapting the supplied Processing Sequences using LANSA Composer's Processing Sequence Editor.

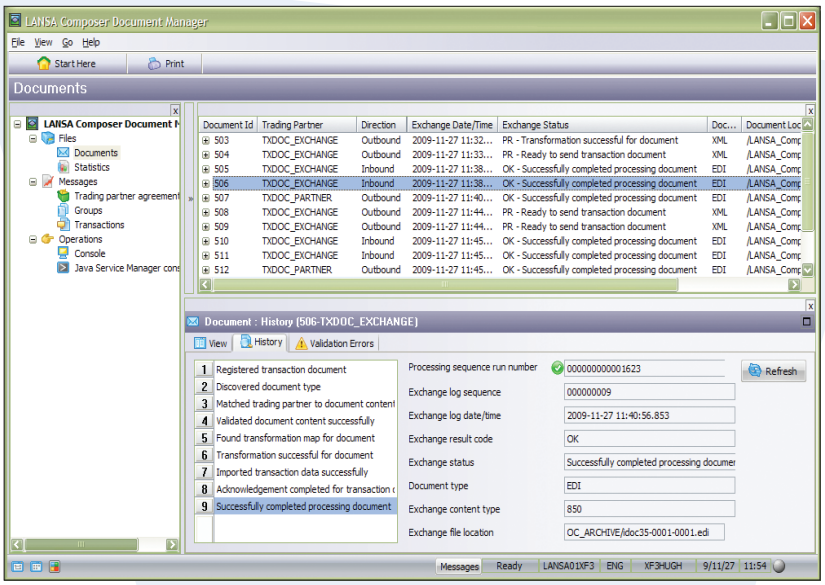

Figure 2: The LANSA Composer Document Manager provides the ability to monitor and interrogate inbound and outbound transaction documents.

Outbound TDP

Typically the outbound processing is triggered by some event in the application, such as a sales order triggering an invoice.

For this purpose, Version 3 supplies an API that allows your application to register a pending outbound transaction document in the transaction document database. The API allows you to supply application-specific "key" values to enable selection of the applicable transaction dataset. These values can be referenced in the Transformation Map that generates the document.

Once registered, each subsequent processing step updates the history and status, allowing you to monitor progress using the new Document Manager.

Either immediately or at a scheduled time, the outbound transaction document process runs to create and send any registered pending outbound transactions. Its main steps are:

- Loop for each trading partner.
- Loop for each outbound transformation map type linked to the trading partner.
- Determine the matching outbound transaction documents that are pending.
- For each, execute the transformation map using application-defined keys to identify the specific set of transaction data that is to be extracted to generate the outbound transaction document.

As for the inbound process, the outbound processing steps may be customized using the Processing Sequence Editor.

Mapping Transaction Documents

There are two typical approaches to mapping the data contained in the transaction documents to or from the database.

The simplest approach is to map directly to or from the application database tables. However, this effectively bypasses the checks that are implemented in your application to validate the data before it becomes part of your application. In some cases, especially where the inputs and outputs are well known and controlled, this is not a problem.

For EDI transactions in particular it is safer and clearer to map the data to or from an intermediate staging database first, before processing it further with application logic to cleanse and accept it. The example Transformation Maps for selected EDI X12 transactions that ship with LANSA Composer Version 3 use this approach.

Figure 1 shows the example inbound map for an EDI X12 850 (purchase order) transaction. It maps the transaction data into a set of database tables supplied with LANSA Composer specifically to receive the 850 transaction data. The supplied Processing Sequence that executes this map calls a generic transaction import activity, into which you can plug your code to receive the transaction data into your application database.

The Document Manager

For TDP solutions that make use of LANSA Composer's built-in transaction document database, Version 3 provides a completely new Document Manager.

The Document Manager provides the ability to monitor and interrogate inbound and outbound transaction documents. This is true even if the processes have been customized, provided the supplied activities that register and update the status of transaction documents have been used.

Using the Document Manager's search facilities, you can search for transaction documents by a variety of criteria, such as by trading partner, status, transaction document and content type.

Version 2 of LANSA Composer introduced the ability to restart a failed Processing Sequence from the point of failure – for example, in the event of a communication failure with a remote FTP host. This capability is exploited in the Document Manager to enable you to resume processing for failed transaction documents after diagnosing and correcting the cause of the failure.

Roll your Own

LANSA Composer's TDP framework may not suit every implementation – which is why its use is entirely optional. Users can continue to implement custom solutions using LANSA Composer's proven transport, transformation and orchestration features (and there are many other new features and capabilities in LANSA Composer Version 3 to ease the task).

For information on just some of the business integration challenges our customers have solved using LANSA Composer, visit www.lansa.com/builtwithlansa/integration.htm

Keep your Eyes on the Road, your Hands upon the Wheel

Previous versions of LANSA Composer provided a powerful and flexible integration engine and let you add your own wheels to take it where you want. For many customers the new TDP features will add a handsome set of magnesium alloy wheels. All you have to do to complete your implementation is fill the tank and tell it where you want to go. ■