USER GUIDE

GDSN Receiver

Release 9.2-MP3 (October 25, 2019)

StiboSystems

MASTER DATA MANAGEMENT

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GDSN Receiver

The Global Data Synchronization Network (GDSN) is an internet-based global network and global registry that enables secure and continuous data synchronization between one or more trading partners. This connection is made via a network of interoperable GS1-certified data pools.

GS1 is an international organization that develops and maintains the GDSN standards.

A company can both be a provider of a data pool and a subscriber to a data pool. When a company make changes to a data pool, the changes are automatically available to all subscribing trading partners.

By subscribing to data pools, you can reduce the time you would otherwise spend on manually entering and maintaining information.

Data Synchronization

To synchronize data it is necessary to use a common standard to exchange information about products. This standard includes product and location information.

Within GDSN, trade items are identified using target markets and a unique combination of the GS1 Identification Keys called Global Trade Item Numbers (GTIN) and Global Location Numbers (GLN).

Product information includes: Item attributes controlled by the data provider including Global Trade Item Number (GTIN), size, weight, height, brand, and UPC code.

Location information includes: Global Location Number (GLN), locations such as company headquarters, billing departments, and ship-to addresses.

GS1 Global Registry®

GS1-certified data pools are electronic catalogs of standardized item data. They serve as a source and/or a recipient of master data.

The GS1 Global Registry is the information directory of GDSN that holds the registered items. If subscription criteria match an item, the data provider's data pool is informed, and the synchronization of product data begins.

GS1-certified data pools such as 1SYNC are electronic catalogs of standardized item data. They serve as a source and/or a recipient of master data.

Prerequisites

This guide contains information about how to setup GDSN data pools and use data pools in order to receive data from different data providers.

The guide assumes that:

- Users have a basic knowledge of the STEP system.
- Users have a AS2 server setup with an Inbound hotfolder and Outbound hotfolder to be able to send and receive data.
- Users and trading partners have adopted the GS1 GTIN, GLN, Global Data Dictionary (GDD) and Global Product Classification (GPC) standards.
- Users have a GDSN Receiver license.

How GDSN Works with Data Pools

GDSN works together with data pools in the following way:

1. The data provider selects a source data pool and the data recipient selects a recipient data pool as a single point of entry to GDSN.
2. The data provider registers product and company information in its source data pool. This information is also registered in the GS1 Global Registry.
3. The data provider agrees with a data recipient to synchronize data from the provider to the recipient. The provider then makes a publish request to the data pool, so that relevant registered items are sent to the recipient.
4. The data recipient makes a subscription request (Catalog Item Subscription -CIS).
5. If the subscription criteria match items that are registered in the GS1 Global Registry, the recipient's data pool is notified using a Catalog Item Notification (CIN) message, and then the synchronization takes place. Data is published from the data provider's data pool to the recipient's data pool.
6. After receiving the data, a Catalog Item Confirmation message (CIC) is sent from the data recipient to the data provider.

Common Standards

Standard	Description
GTIN	Global Trade Item Number - a global identification number that can be used by a company to uniquely identify trade items. Trade items are defined as products or services.
GLN	Global Location Number - a unique, 13-digit identification number. The GLN can be used to identify a company's physical location and to identify corporate entities as well as a company's legal and functional entities. Each data provider and each data recipient has their own unique GLN that is used when publishing and subscribing for data.
GPC	Global Product Classification - used by GS1 to ensure that products are classified correctly and uniformly, and is a system that gives data providers and data recipients a common language for grouping products in the same way everywhere in the world.

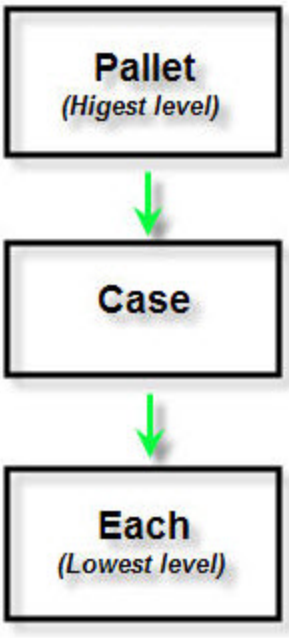
Key Terminology

Term	Description
CIS	Catalogue Item Subscription - subscription sent by a data receiver requesting data.
CIN	Catalogue Item Notification - notification to a data receiver. The CIN includes the requested product data.
CIC	Catalogue Item Confirmation - confirmation response returned to the data provider by a data receiver.

Packaging Hierarchies

The trade item hierarchy - or the packaging hierarchy - describes the relationship between trade items that contain other trade items, and it describes on which level in the hierarchy each item fits in. A trade item can, for example, belong to one of the following levels: base unit (Each), case, and pallet. Regardless of how many levels are in a hierarchy, the final level must be a base unit.

A parent item is an item that contains lower level trade items (children) in a packaging hierarchy. A child item is an item with a higher level trade item (parent) in a packaging hierarchy. A child item can have multiple parents, and it can therefore be included in many packaging hierarchies.



You can view the packaging hierarchy data from the Packaging Hierarchy tab in STEP.

GDSN Receiver Component Model

The GDSN receiver uses a component model to define the objects, references, and attributes of the component. These elements define the configuration of the GDSN receiver component, specify how STEP communicates with GDSN, and store the status of the products within GDSN.

You have two options for configuring the GDSN receiver component model. You can either configure the component model manually or use the **Setup GDSN Receiver Data Model** dialog. We recommend that you use the dialog to configure the component model because most settings are related to the internal workings of the GDSN solution and can be set automatically. For more information, see the **Setting Up the GDSN Receiver Component Model** topic.

Main Elements of the GDSN Receiver Component Model

The following section describes the main elements of the component model. For a detailed list of all elements of the component model, see the **GDSN Receiver Component Model Elements** topic.

GDSN Product

GDSN Products define the object types of the products and packaging objects that can be received from GDSN. GDSN products must have a GTIN attribute. When products are received from GDSN they be created with as of these object types.

Target Market Object Type

A GDSN product is received from a target market. The target market defines which STEP contexts to use when product data are imported for that particular market. The context is determined by a reference from the target market to the context. The target market has an attribute that contains the country code of the target market. This code must follow the naming scheme for target markets defined by the GDSN data pool. Target markets are defined per data pool and all target markets for a data pool have the same parent object in STEP.

Provider

A GDSN product is published by a data provider. The provider has a GLN attribute for the GLN of the provider.

Format

This is the data pool format. The GDSN receiver is format independent, which means that all GDSN data pool specific formats are configured individually. The GDSN data pool configurations are stored in a Format object. The Format object contains format specifications, for example, for 1 World Sync. You can create any number of Format objects.

The format also defines how the XML messages received from the GDSN data pool are translated into messages that the GDSN receiver understands. The format defines how the GDSN XML is imported into STEP and how response to received messages send to the GDSN data pool is created and formatted. The format supplies an

XML schema for the XML format the GDSN data pool understands and a sample file for a Catalog Item Notification (CIN) message used to setup how data is imported into STEP. The schema and the sample file are stored in an asset that are linked to the format using references.

Data pool

The data pool object represents the GDSN data pool that delivers data to the GDSN receiver. The data pool has a GLN attribute that holds the GLN of the data pool. The data pool defines the format through a reference to a format object. The data pool has an attribute for the GDSN data pool GLN and for the GDSN data pool user name.

Note: The GDSN data pool user name is not a STEP user name.

Communication between STEP and the GDSN data pool takes place through hotfolders. You configure the in and out hotfolders on the data pool in two attributes: GDSN AS2 hotfolder In and GDSN AS2 hot folder Out.

Subscriptions

The GDSN receiver requests data from a GDSN data pool by creating a subscription for data on the data pool. The subscription can be created on Target Market and one or more of data provider GLN, product GTIN or GPC hierarchy. Note that it is not legal to create a subscription on both a GTIN value and a GPC hierarchy node. The GTIN values and GPC hierarchy values for a subscription is stored in an attribute on the subscription, while provider GLNs and Target Markets for a subscription are linked to the corresponding node.

Setting Up the GDSN Receiver Component Model

To work with the GDSN receiver you first need to set up the GDSN receiver component model. The GDSN receiver uses a component model to define the objects, references and attributes of the component. These elements define the configuration of the GDSN receiver component, specify how STEP communicates with GDSN, and store the status of the products within GDSN.

You have two options for configuring the GDSN component model. You can either configure the component model manually or use the **Easy Setup of GDSN Receiver Component Model** wizard. We recommend that you use the wizard to configure the component model because most settings are related to the internal workings of the GDSN solution and can be set automatically.

The selected GDSN product object types, GDSN hierarchy reference types, and **Quantity of next lower level** attribute are configured automatically as valid objects to the Packaging component model.

For more information on configuring the Packaging component model, see the **Packaging Hierarchy Editor** in the **Web UI** documentation.

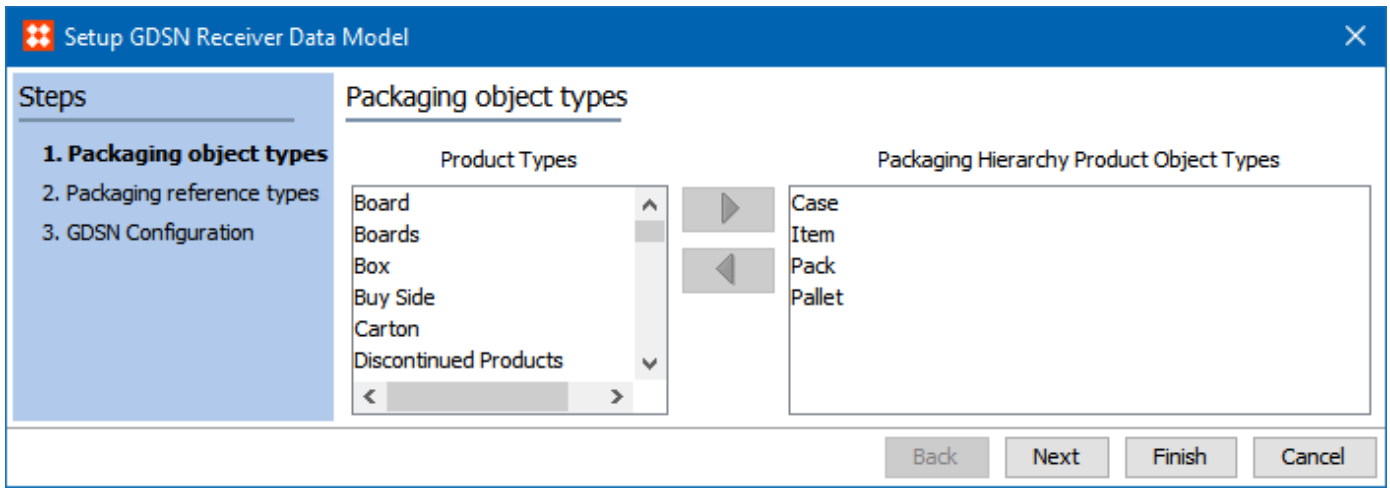
Set up the GDSN Receiver Component Model

- In **System Setup**, expand **Component Models**, right-click **GDSN Receiver** model, and then click **Easy Setup of GDSN Receiver**.

Step 1: Packaging Object Types

- Select the product object types that you want to use in the packaging hierarchy. If the packaging hierarchy has already been created, the object types are displayed. If you make changes to the packing hierarchy product object types, the changes are reflected in the packaging hierarchy in System Setup.

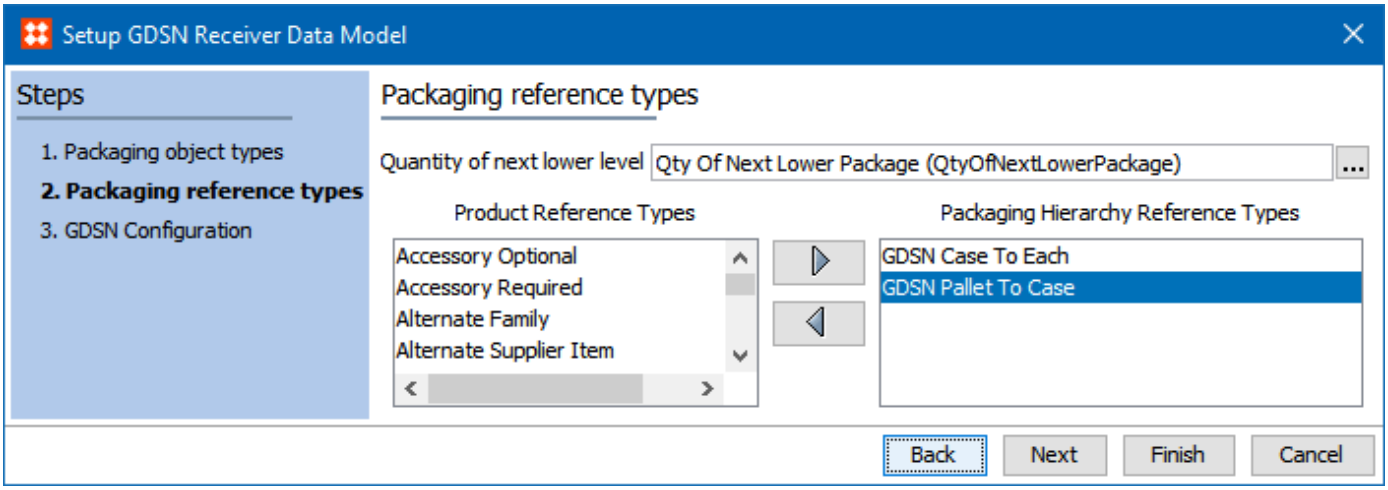
The product types you want to use must have been created before they appear in the list.



Step 2: Packaging Reference Type

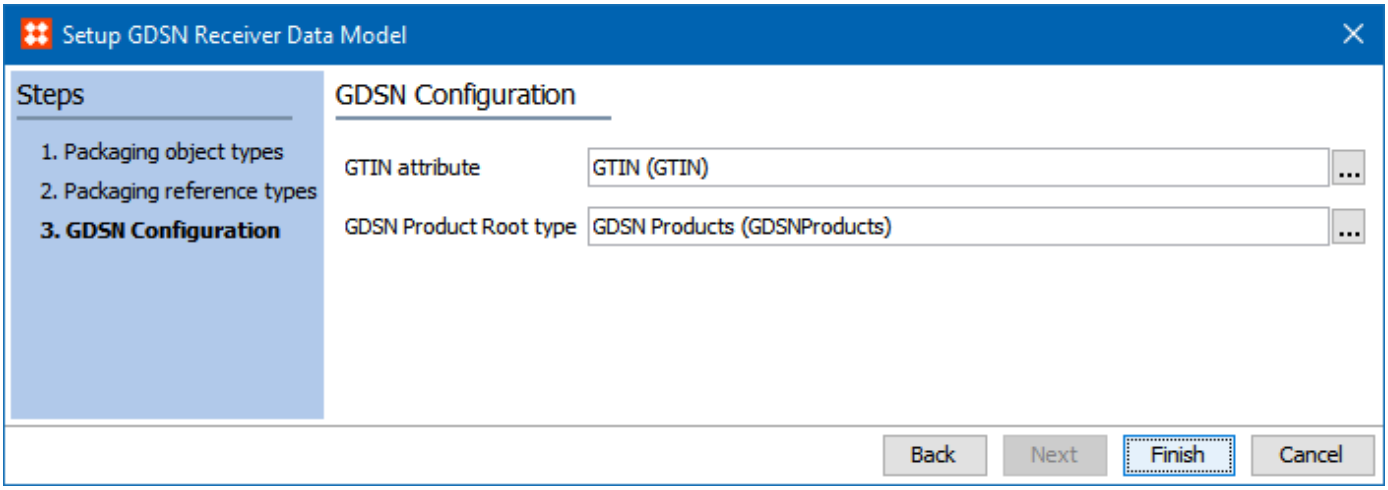
- In the **Quantity of next lower level** field, the **Quantity at level** attribute is selected by default. This attribute holds the quantity of the next lower level trade item. You can also create a custom attribute that you can select instead of the default attribute.
- In the **Packaging Hierarchy Reference Types**, the Packaging Link reference is selected by default. The reference ensures that the references between the objects you selected in step 1 are valid.

Important: If you use custom reference types, be careful that you select the product reference types used on the object types you selected in step 1.



Step 3: GDSN Configuration

- The **GTIN attribute** is selected automatically. However, you can also select a custom attribute.
- In the **GDSN Product Root type** field, select the root folder where you want the received products to be placed.



GDSN Receiver Component Model Elements

The following table describes the elements of the GDSN receiver component model.

Name	Type	Description	How it is used
CIN Sample Asset	Object type	Asset that holds the CIN sample that is used when the CIN importer is configured.	Used to identify elements in the CIN documents on the inbound format.
Format	Object type	Format used for a specific data pool	Acts as the placeholder for all format specific configurations
GDSN Product Root	Object type	GDSN Product Root for CIN product import	The type of product folder that is used for initially adding products after the CIN import
GDSN Products	Object type	List of product object types that can be published to GDSN	When a CIN is received from the GDSN, the imported products are created with these types
Provider GLN	Object type	Provider GLN object type	Is linked with the subscription when the subscription is created and is used to identify which provider the subscription is intended for
Provider GLN Group	Object type	Group that holds the Provider GLN(s)	Holds the Provider GLN(s)

Name	Type	Description	How it is used
Receiver Datapool	Object type	data pool object type	Is the logical representation of the GDSN data pool in the system. Contains information about the in and out folders for communicating with the GDSN and the data pool GLN. The data pool node is the parent of the format node, target markets, product GLNs. The data pool node in combination with the in and outbound integration endpoints are the elements used to communicate with the GDSN.
Subscription	Object type	Subscription object type	When a subscription has been started, this type is used to make a node for it. The subscription holds information about the specific GDSN subscription and is used to identify incoming products as coming from this subscription. The products are linked with the subscription so that it is possible to identify products coming from a specific subscription.
Subscription group	Object type	Holds subscriptions	Holds subscriptions
Target Market	Object type	Target Market object type	Any product in the GDSN will be published under a target market. This type is our representation of this concept. We use the target market both for the identifying name in output XML, and also for identifying the context which should be used when exporting anything to the GDSN.
Target Markets group	Object type	Group holding target markets	Group holding target markets
XSD Asset	Object type	Asset holding the XSD definition	The XSD definitions are used when creating the generic xml documents sent to the GDSN. Everything that we generate is an XSD parser with the correct XSD definition to ensure the correctness of the document.
CIC Status	Attribute	Attribute	This is used in collaboration with the

Name	Type	Description	How it is used
		holding the CIC status for the product with a certain subscription	GDSNReceiverDefaultFlow for holding the CIC status of a specific product. See the CIC Handling section for further information. The status can be seen in the GDSN default Web UI.
CIC Status Date	Attribute	Attribute holding the CIC status date for the product with a certain subscription	At the point where the CIC status is set, this attribute will be updated, so that the user can see when the status was set. The attribute can be seen in the default GDSN Web UI.
Datapool GLN Attribute	Attribute	Attribute holding the data pool GLN	This attribute is set when the data pool is created with the easy setup wizard. It is used to identify the data pool that we want to communicate with.
Datapool Username Attribute	Attribute	Attribute holding the data pool username	The username that we use to identify our selves to the GDSN data pool
Format CIC Configuration	Attribute	CIC Codes and messages of this format	This attribute is used to set the messages used when sending a CIC REVIEW message. The attribute is set for all items in the specific hierarchy and then collected when the CIC message is sent.
Format CIC Free Text Attribute	Attribute	Free Text attribute for CIC Code 999	If the Format CIC Configuration has been set to 999, then this field is read when sending a CIC REVIEW. The message written in this field will then be added as additional information.
Format Inbound Configuration	Attribute	Inbound configuration of this format	The attribute used to store information for building the inbound format

Name	Type	Description	How it is used
Format Outbound Configuration	Attribute	Outbound configuration of this format	The attribute used to store information for building the outbound format
GLN Attribute	Attribute	Attribute holding the GLN string	This attribute is used on the provider and receiver GLN objects.
GPC Attribute	Attribute	Attribute holding GPC category code information for this subscription	This attribute is used on the subscriptions for holding information about GPC.
GTIN attribute	Attribute	Attribute holding the GTIN	When a product has been imported through the CIN import the GTIN of the product is put into this attribute. This attribute is used as a part of the unique key identifying this product on later imports.
In-folder Attribute	Attribute	Attribute holding the In-folder path	This folder is used for the inbound GDSN traffic, when a message arrives the inbound endpoint will pick it up and apply it to the inbound format
Out-folder Attribute	Attribute	Attribute holding the Out-folder path	This folder is used for the outbound GDSN traffic, when our outbound endpoint has generated a generic XML document and it has been validated by the XSD it is put into the folder, and handled by the GDSN.
Product GLN Attribute	Attribute	Attribute holding the GLN of the provider of this product	When a product has been imported through the CIN import the GLN of the provider is put into this attribute. This attribute is used as a part of the unique key identifying this product on later imports.
Product	Attribute	Attribute	When a product has been imported through the CIN

Name	Type	Description	How it is used
Target Market		holding the Target Market of this Product	import the TM of the product is put into this attribute. This attribute is used as a part of the unique key identifying this product on later imports.
Recipient GLN	Object type	Recipient GLN object type	Is used to identify the company associated with this STEP system. There must be only one Recipient GLN.
Recorder Aspect	Attribute	Attribute holding the recorder path resulting in the object or reference being created	This attribute will be populated on those objects that (according to the GDSN import configuration) must be replaced on import update. It allows the system to detect objects that must be replaced on import.
Subscription Status	Attribute	Attribute holding the subscription status	The subscription status is used to signify the status of the subscription as seen by the GDSN
Target Market Code	Attribute	Attribute holding the target market code	This attribute holds the code which is used when exporting to the GDSN to identify the target market
Validation schemas	Attribute	XML Schemas used to validate if the generated XML is valid before the XML is sent to the data pool	XML Schemas used to validate if the generated XML is valid before the XML is sent to the data pool

Name	Type	Description	How it is used
Datapool to Format Reference	Reference	Reference type that relates the data pool with its format definition	Reference type that relates the data pool with its format definition
Datapool to GDSN Product Root	Reference	Link that connects a data pool to the GDSN Product Root	This reference is created when the data pool is created, and later used when importing products.
Datapool to Provider GLN Group	Reference	Link that connects a data pool to the Provider GLN Group	Link that connects a data pool to the Provider GLN Group
Datapool to Subscription Group Reference	Reference	Reference type that relates the data pool with its subscription group	Reference type that relates the data pool with its subscription group
Datapool to Subscription Reference	Reference	Reference type that relates the data pool with its subscriptions	This reference is created when the subscription is first created, it is used later to make an overview of the subscriptions related to this data pool
Datapool to Targetmarkets Group	Reference	Link that connects a data pool to	Link that connects a data pool to the target markets group

Name	Type	Description	How it is used
		the target markets group	
Format to Asset Reference	Reference	Reference type that relates the format with the XSD asset	Reference type that relates the format with the XSD asset
Format to CIN Sample Asset Reference	Reference	Reference type that relates the format with the CIN sample asset	Reference type that relates the format with the CIN sample asset
Product to Subscription Reference	Reference	Reference type linking the product to its subscription	This reference is used to identify the products connected to a subscription. Also this is where the CIC status attributes are placed
Subscription to GLN Reference	Reference	Link that connects a subscription to a GLN	This reference is used to determine what Information Provider GLN a given subscription is tied to.
Subscription to Target Market Reference	Reference	Link that connects a subscription to a Target Market	Link that connects a subscription to a Target Market
Target Market to Context Reference	Reference	Reference type that relates the	When a target market is used for any type of GDSN export, it will look at this link to determine which context should be used for the export

Name	Type	Description	How it is used
		target market with a context	

Setting Up the GDSN Receiver Data Pool

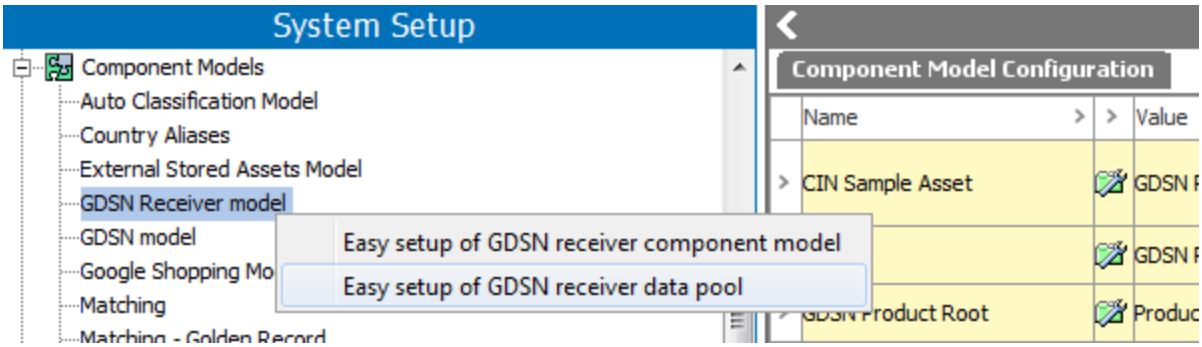
Once the component model is configured, the next step is to set up the data pool. Although you can set up the data pool manually, we recommend using the **Easy Setup** wizard.

Verify the following tasks are complete before starting the data pool wizard:

- Create setup groups that allow for creating:
  - Workflows
  - Business actions
  - Outbound endpoints
  - Inbound endpoints
- Create hotfolders for inbound and outbound messages.
- In the product hierarchy, create a GDSN Product Root folder of the type you specified in the data model setup.
- Determine the GLN numbers for your organization and for the data pool.

Set Up The GDSN Receiver Data Pool

1. In **System Setup**, right-click the GDSN receiver component model, and then click **Easy setup of GDSN receiver data pool**. The **Create GDSN Receiver Data Pool** dialog is displayed.

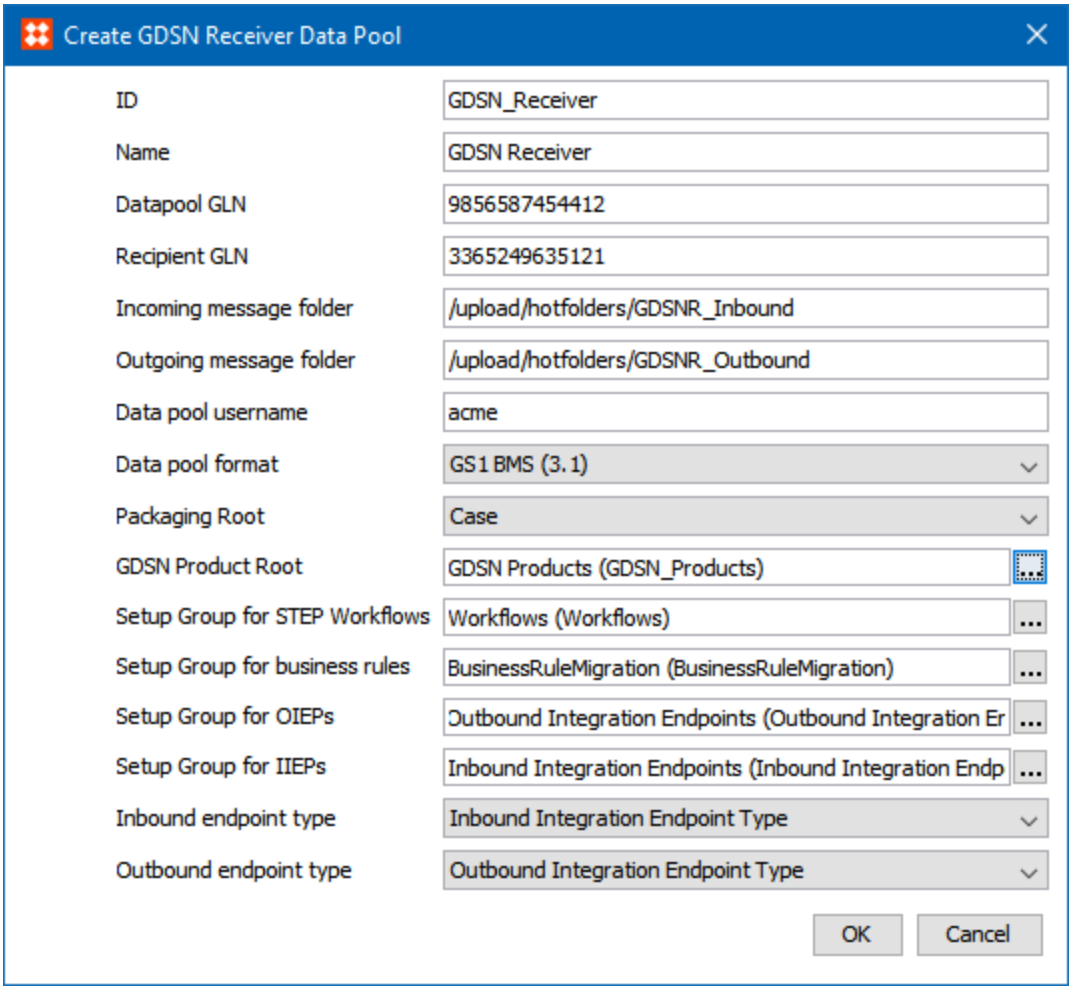


   Although some of the fields are auto-filled, it is a good idea to verify that the supplied information is correct.

2. Provide the following information:
   - An **ID** and a **Name** for the data pool
   - The GLN of the data pool provider (**Datapool GLN**)
   - The GLN of your organization (**Recipient GLN**)
   - Data pool format: select 1WorldSync (7) or GS1 BMS (3.1)

- A folder for incoming GDSN messages; used by the AS2 server
- A folder for outgoing GDSN messages; used by the AS2 server

3. For **Packaging Root**, select the top most object type for a packaging hierarchy.
4. For **GDSN Product Root**, select the root folder for the imported GDSN products.



5. When all fields have valid information, click **OK** and the entity structure is created.

Note: If any information is invalid, such as a GLN with too few digits, an error message is displayed.

6. Create the Target Markets and GLNs.

Create Target Markets

1. In the **Tree**, locate and expand the relevant data pool entity.
2. Right-click **Target Markets**, and then click **New Entity**.
3. Enter an **ID** and a **Name** for the target market.

4. On the **GDSN Target Market** tab, specify the **GDSN Attr Target Market Name**.
5. On the **References** tab, click the + icon next to **GDSN Target Market to Context** field, and then select the relevant context.

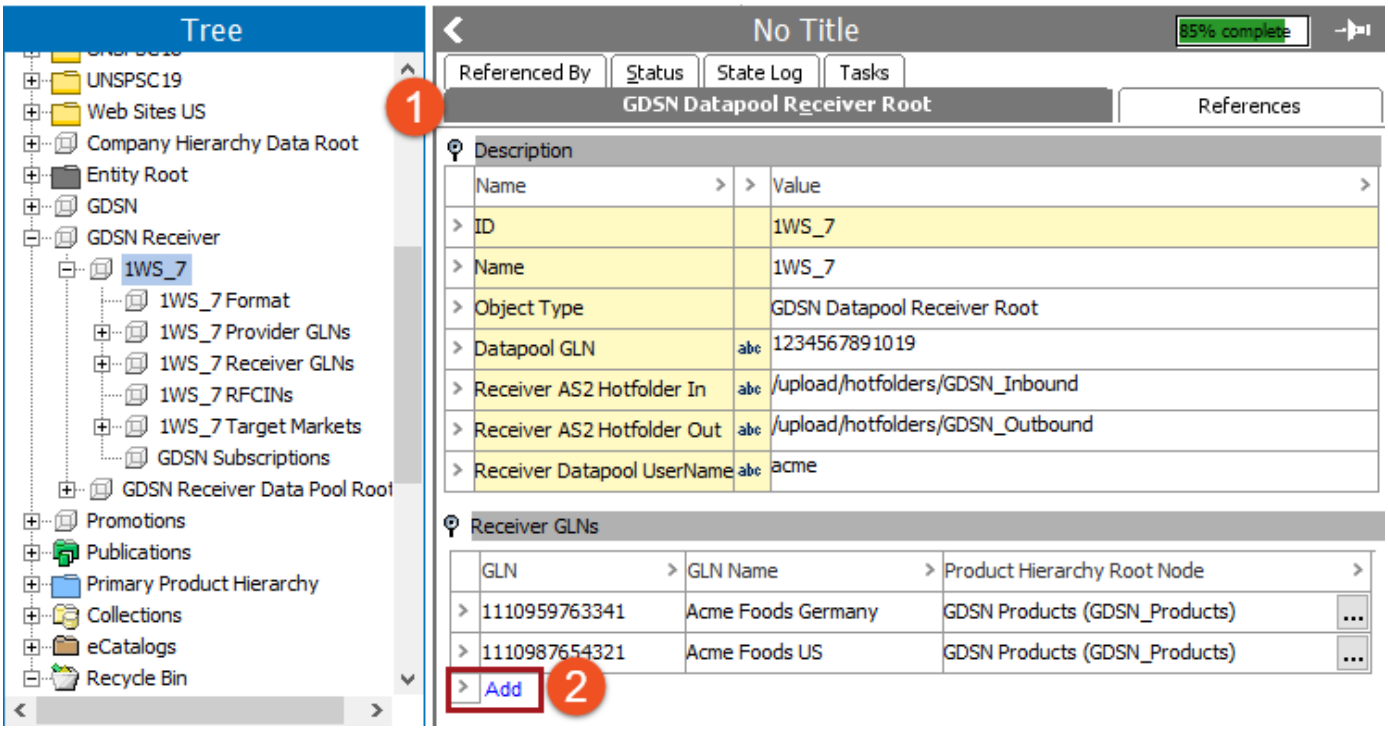
Add Provider GLNs

1. In the **Tree**, locate and expand the relevant data pool entity.
2. Right-click **Provider GLNs**, and then click **New Entity**.
3. Enter an **ID** and a **Name** for the provider.
4. On the **GDSN Provider GLN** tab, in the **GLN Identifier** field, enter the unique 13-digit identification number.

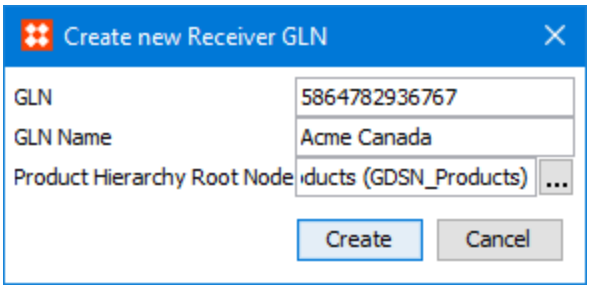
Creating a GDSN Receiver GLN

Use the following steps to create the GDSN Receiver GLNs.

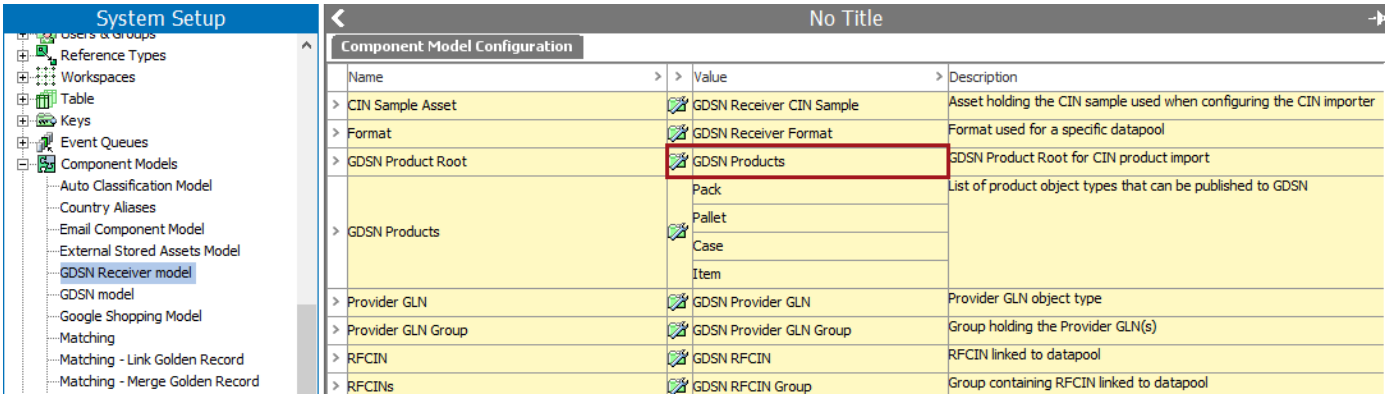
1. From the Tree in the Workbench, select the relevant data pool and click on the **GDSN Datapool Receiver Root** tab.
2. Click on the **Add** link.



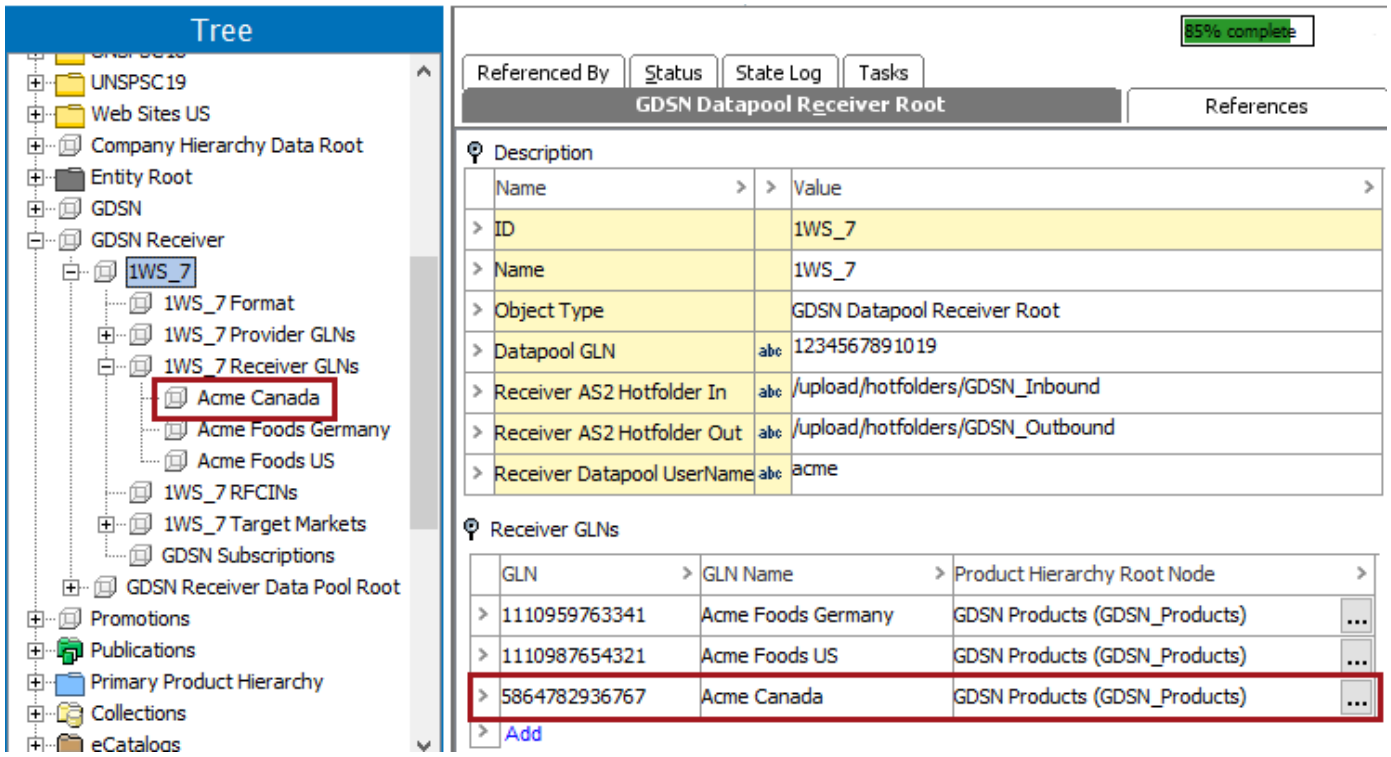
3. In the **Create new Receiver GLN** dialog box, enter the **GLN**, **GLN Name**, and the applicable **Product Hierarchy Root Node**. This should be the root node that was defined when setting up the GDSN Receiver component model.



Note: If you are unsure of which Product Hierarchy Root Node to use, you can find it by clicking on the GDSN Receiver model under Component Models in the System Setup as shown in the image below.



4. At this point, the **GDSN Receiver GLN** entity object type is created under the **GDSN Receiver GLN Group** root node and is ready for use in the GDSN Receiver Web UI.



For information regarding the use and selection of the GDSN Receiver GLN, see **Creating and Importing GDSN Subscriptions in the Web UI** in the **Web User Interfaces / Web UI Setup and User Guide**.

Configuring the Outbound Message Format

Before you can send messages to the GDSN, you must configure the outbound message format templates. The templates define the contents and format of the data that is sent to the GDSN.

1. In the **Tree**, locate and expand the relevant data pool entity.
2. Select **Data pool format**, and then click the **Inbound** tab.
3. Click the ellipsis button (...) next to the item you want to edit or click **Add Row** to add a new configuration.

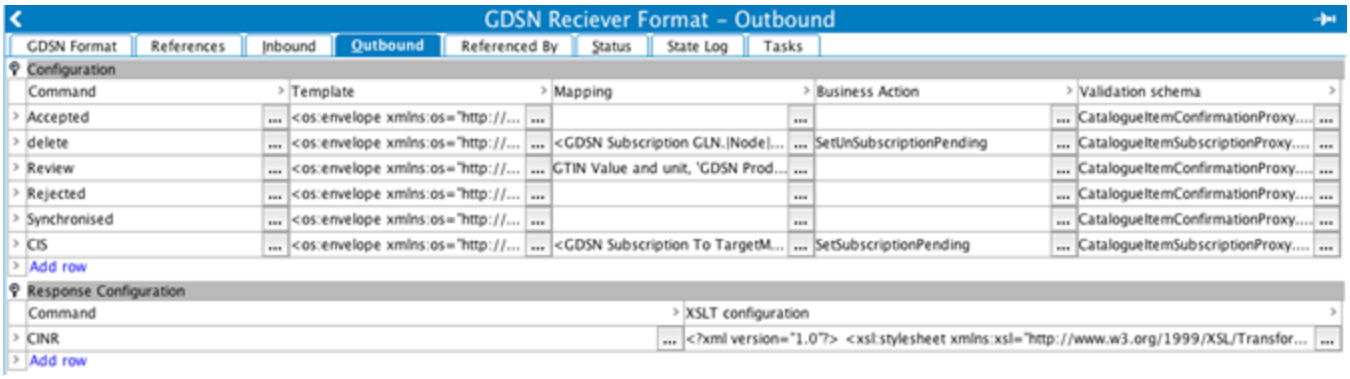
To configure the outbound message format, complete the following two steps on the **Outbound** tab:

- Configure the Format of Messages Sent to GDSN (within this topic)

  In the **Configuration** area, you configure the format of messages sent to the GDSN on requests by a user action and the format of a Catalog Item Confirmation (CIC) Review message or a Catalog Item Subscription (SCI) message.

- Configuring the Format of Responses to GDSN Protocol Messages

  In the **Response Configuration** area, you configure how responses to GDSN protocol messages are created. This is, for example, the configuration of the response to a Catalog Item Notification (CIN) message that must be sent to the GDSN whenever a Catalog Item Notification (CIN) message is received.



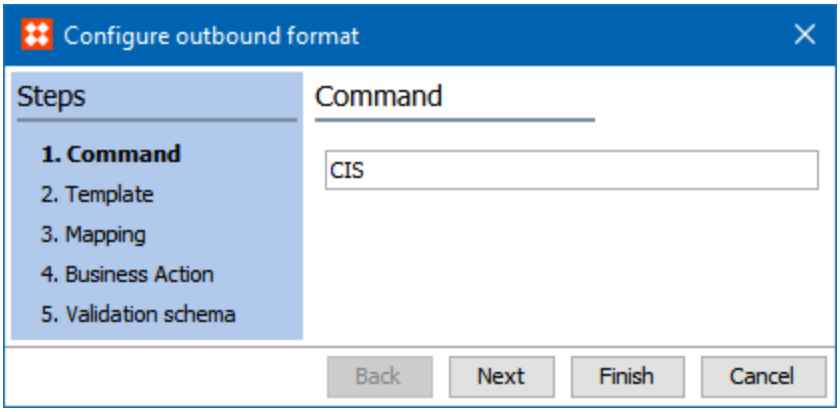
Configure the Format of Messages Sent to GDSN

1. In the **Tree**, locate and expand the relevant data pool entity.
2. Select **Data pool format**, and then click the **Outbound** tab.
3. Click the ellipsis button (...) for the item to edit or click the **Add Row** link to add a new configuration.

The **Configure Outbound Format** wizard displays with 5 steps:

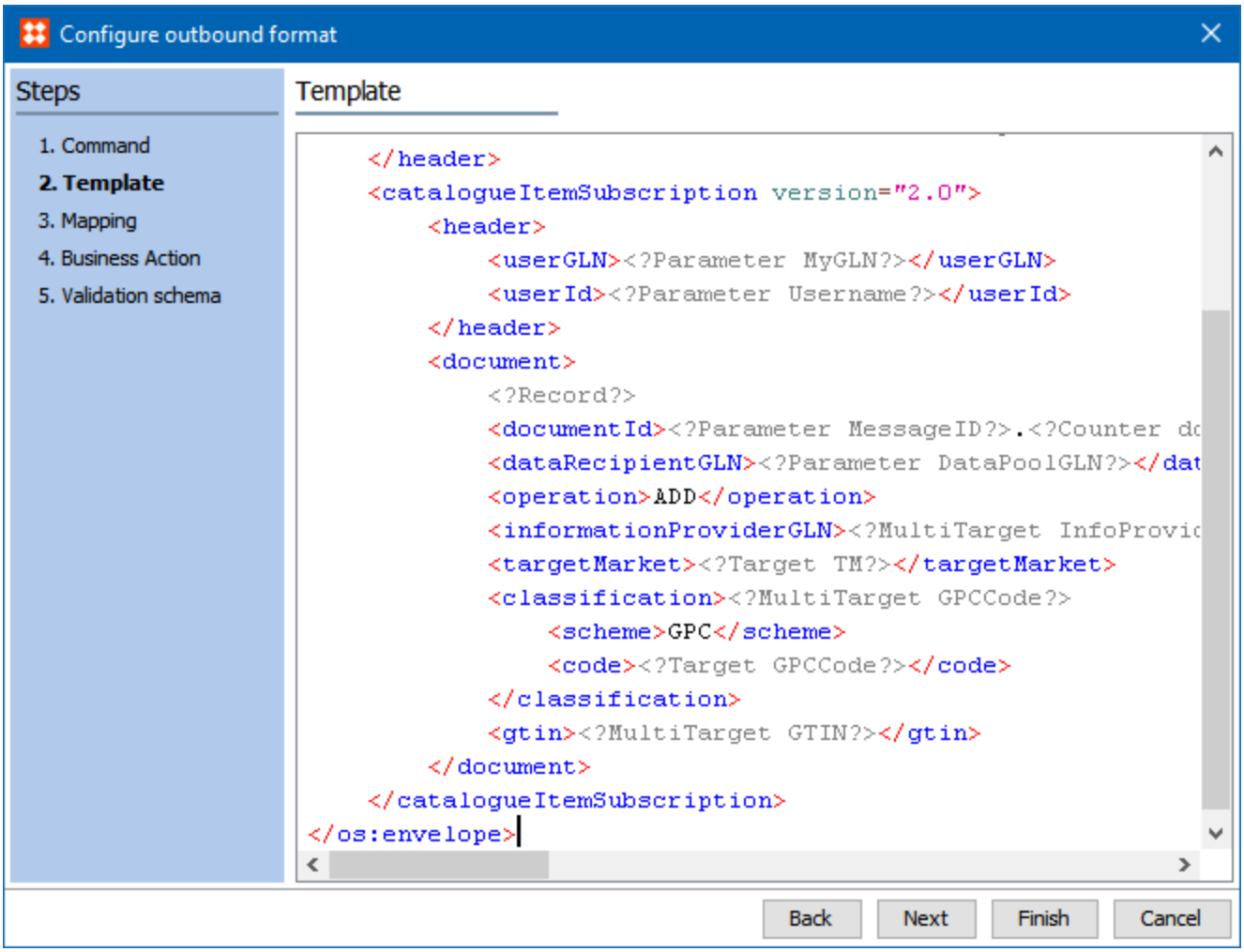
Step 1: Command

Specify the name that identifies the type of the message. The command name is, for example, used by the business actions GDSN receiver solution uses to determine which outbound message format to apply when messages are sent to the GDSN.



Step 2: Template

Defines the Generic XML template to be used when the message is generated for the GDSN. For more information, see the **Generic XML Format** documentation.

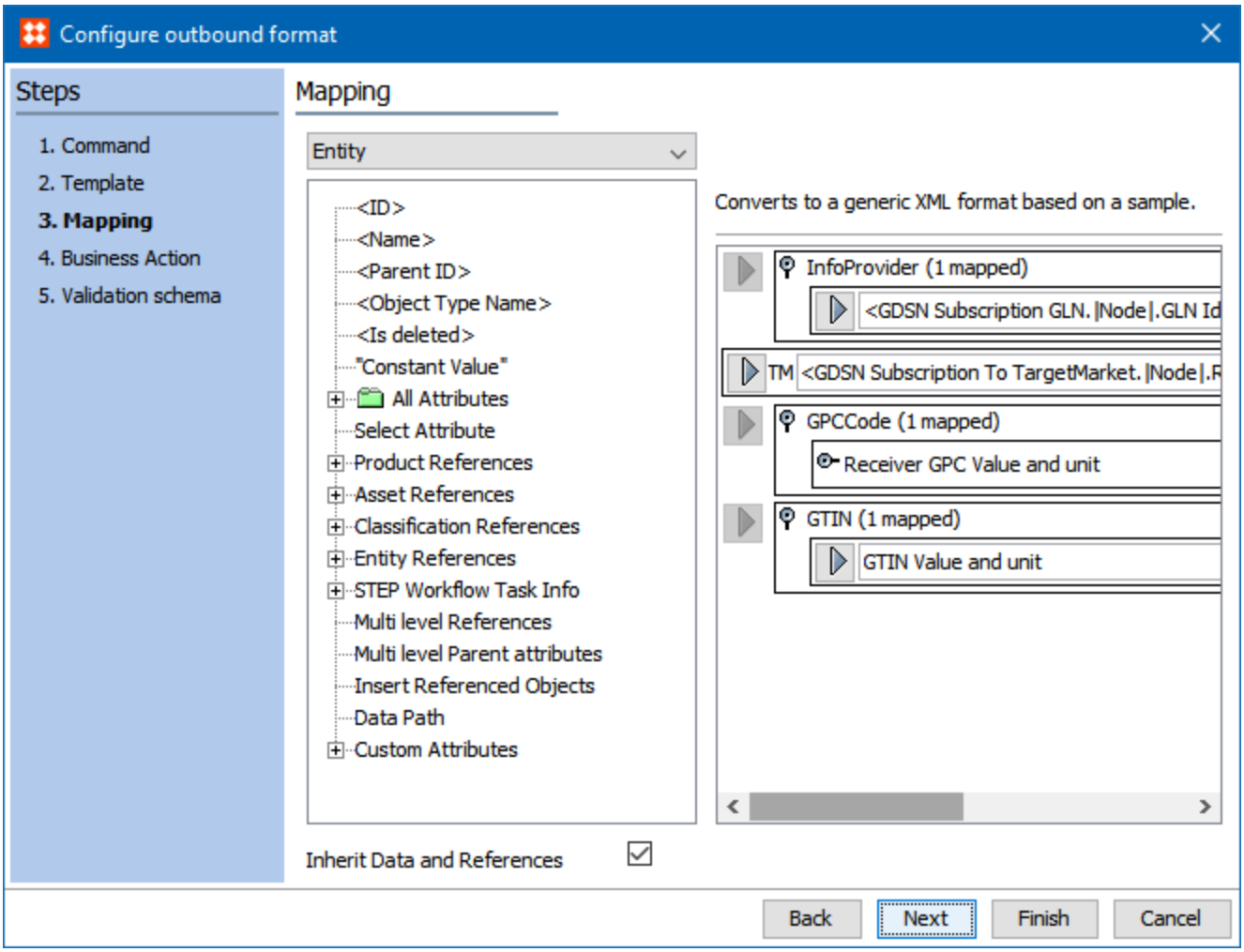


Step 3: Mapping

Define the mappings required for the Generic XML.

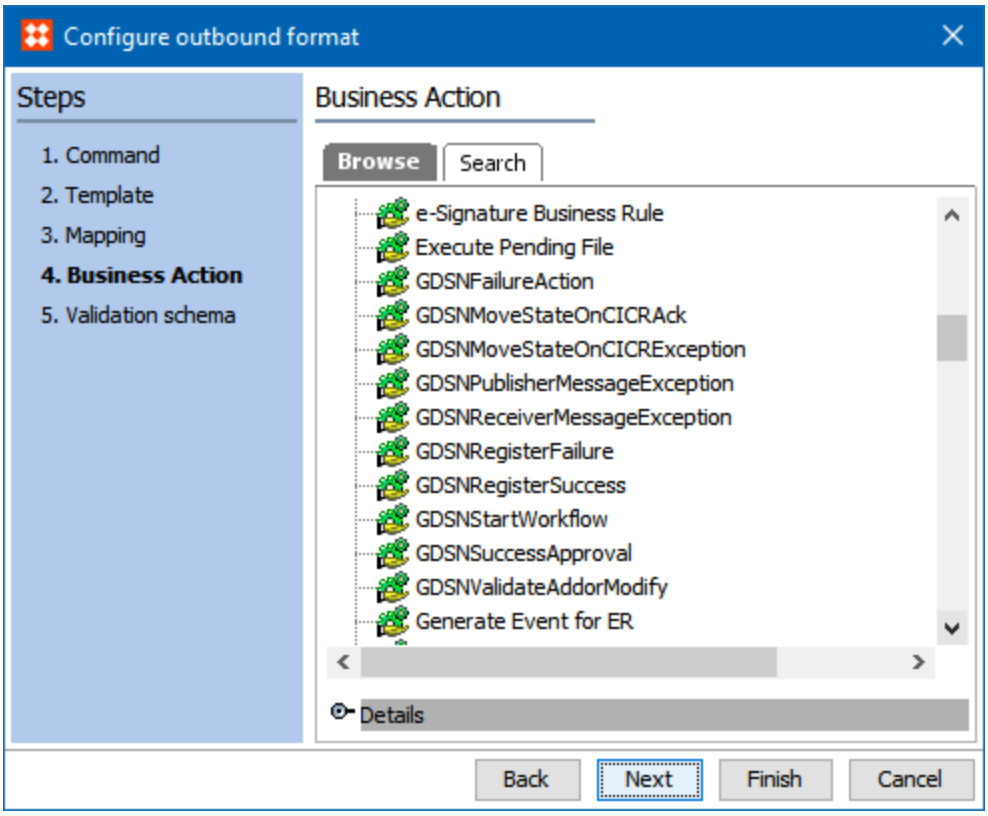
W hen selecting **Inherit Data and References**, values for products that have inherited values from products at a higher level in the hierarchy are extracted. This global selection is applied to all the attributes selected.

For information about mapping data in Generic XML, see **Export Manager - Map Data** in the **Export Manager** documentation.



Step 4: Business Action

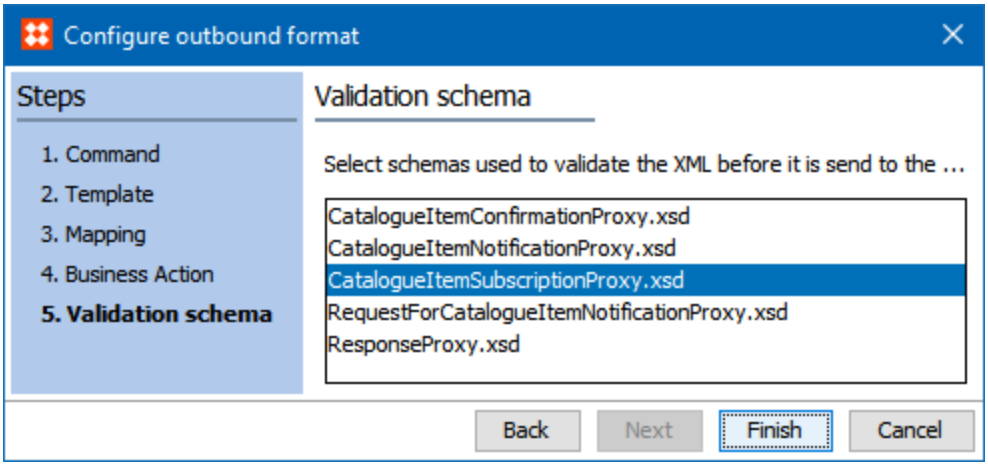
Optional: Select a business action that is executed when data has been exported and a message has been generated for the GDSN. If no action is required, click **<Select none>**.



Step 5: Validation schema

Select the XSD schema used to validate the XML generated by the outbound format. The validation ensures that the GDSN data pool accepts the XML.

The available XSD schemas depend on the GDSN format of the data pool.



After completing the steps in the **Configure Outbound Format** wizard, configure the responses that are sent when GDSN protocol messages are received. For more information, see the **Configuring the Format of Responses to GDSN Protocol Messages** topic.

Copy an Existing Outbound Message Format

1. Right click the row header the outbound message format to copy.
2. Click **Copy row**.
3. Right click the same row header again, and select **Paste row**.
4. A new row is created. The command name of the new row is the command name of the old row prepended with 'Duplicated.'

Delete an Outbound Message Format

1. Right click the row header for the outbound message format to delete.
2. Click **Delete Row**.

Configuring the Format of Responses to GDSN Protocol Messages

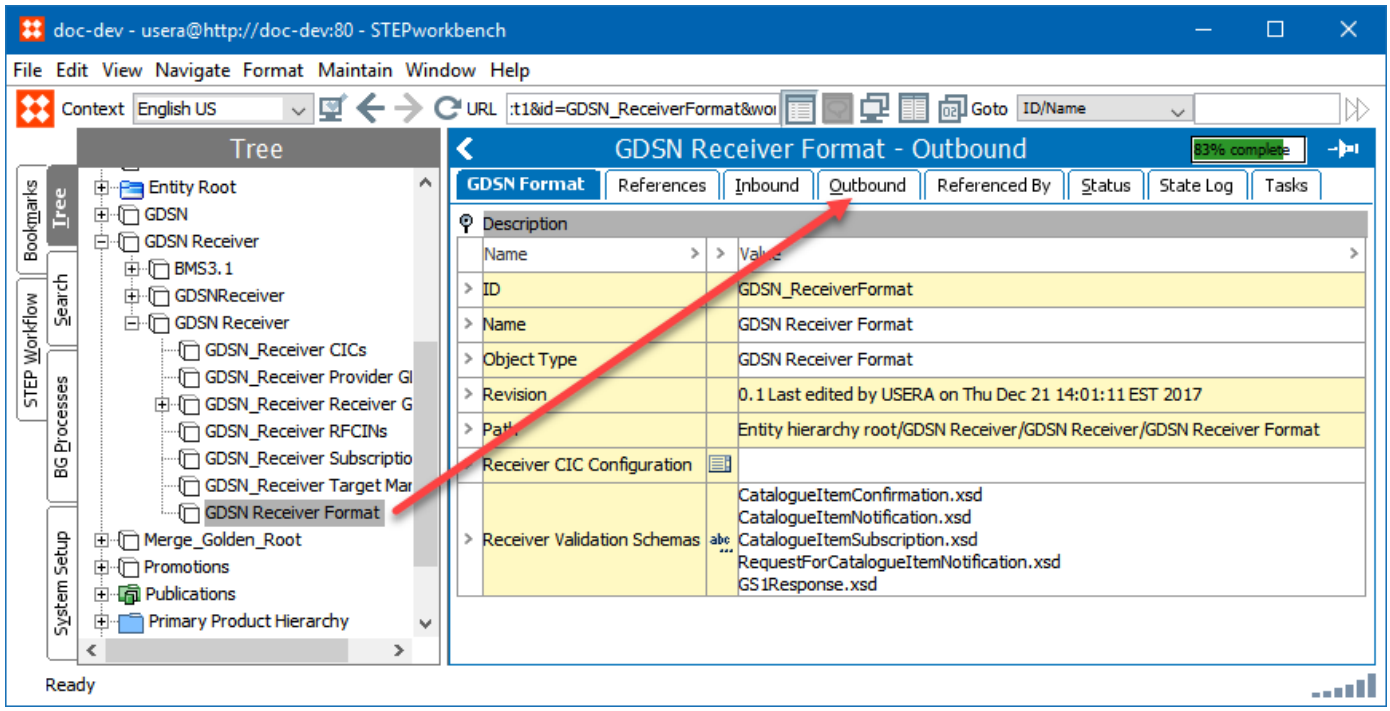
When you configure the outbound message format, you must configure the responses that are sent to GDSN protocol messages.

When specific messages such as CIN messages are received by the GDSN receiver, the GDSN communication protocol requires that a response is sent. For example, a response message (CINR) must be sent when a Catalog Item Notification (CIN) message is received.

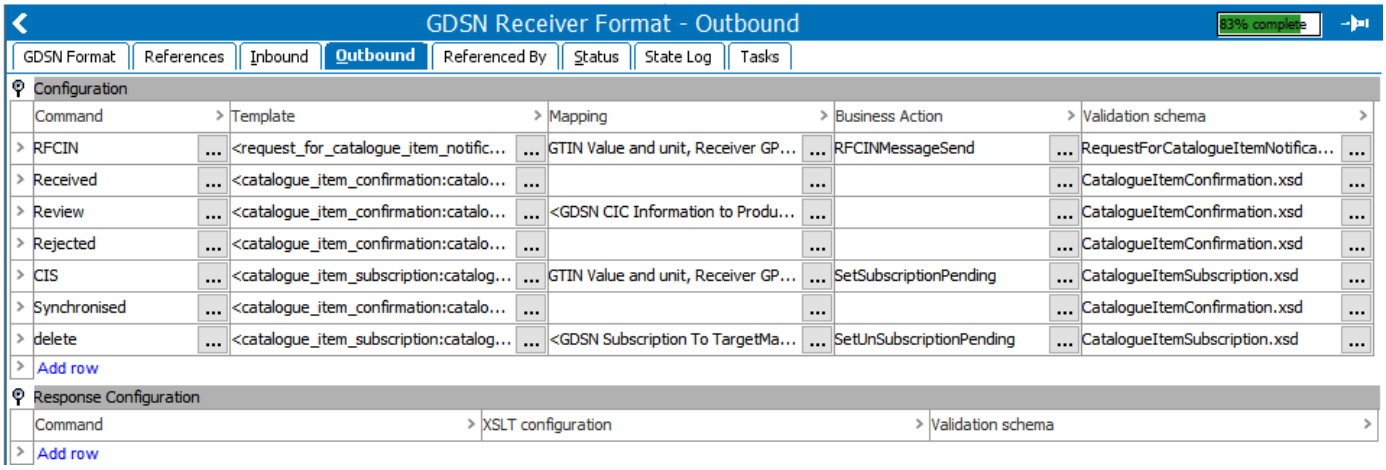
The response message must contain information about whether the message was processed successfully or if the processing failed. The GDSN receiver collects this information in an XML file that is handed over to the outbound endpoint, which in turn formats the XML so that it complies with the XML that is required by the GDSN data pool format.

For information about configuring messages sent to GDSN, see the **Configuring the Outbound Message Format** topic.

1. In the **Tree**, locate and expand the relevant data pool entity.
2. Select the **data pool formatting entity**, and then click the **Outbound** tab.



3. In the **Response Configuration** area, you configure the format of these messages.

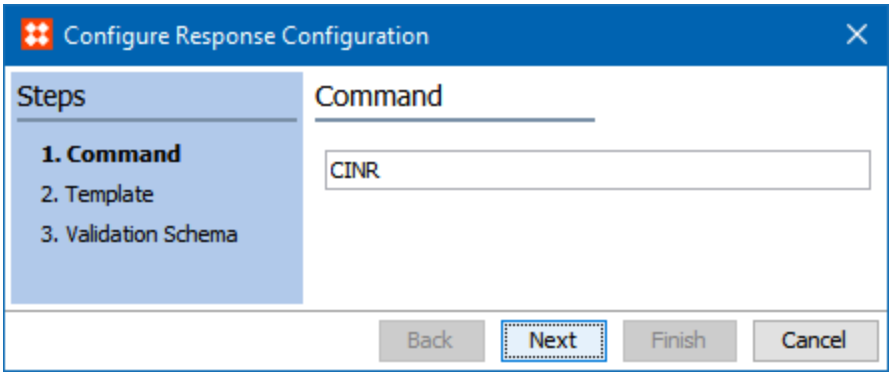


4. Click the ellipsis button (...) next to the item you want to edit or click **Add row** to add a new configuration. The **Configure Response Configuration** wizard is displayed. The wizard has 2 steps.

Step 1: Command

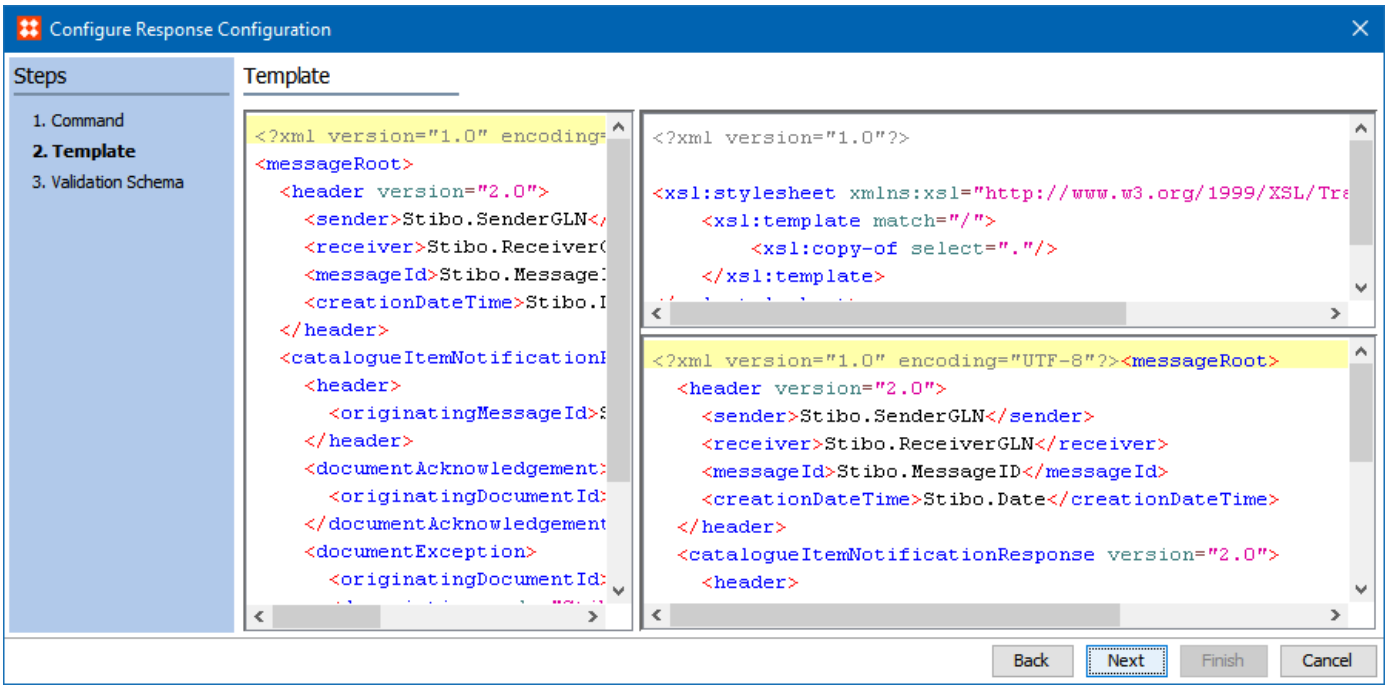
In this step, you specify the name of that identifies the type of the message. The name is used in step 9 of the **Configure Import Message** wizard.

For more information, see the **Configuring the Inbound Message Format** topic.



Step 2: Template

This step defines how the format of the messages is configured. The configuration of the data uses XSLT.



The **Template** step has three areas:

- The area to the left displays a template of the XML that is to be transformed by the response configuration.
- The area in the upper right corner shows the current XSL transformation.
- The area in the lower right corner displays a preview of the XML template when the XSL transformation has been applied.

XML Template

The template contains a header, a section for failures (a **documentException**), and a section for successes (a **documentAcknowledgment**). Each section is populated with data based on the status of the documents received in a GDSN message.

The XML template contains a number of XML attributes with names starting with **Stibo.**. The attributes are replaced by content when the received message is handled.

Attribute template	Description
Stibo.SenderGLN	GLN of the sender of the message.
Stibo.ReceiverGLN	GLN of the receiver of the message. This is the GDSN data pool.

Attribute template	Description
Stibo.MessageID	Message ID of response message.
Stibo.Date	The date when the message is sent.
Stibo.OriginatingMessageID	The message ID of the message that the current message is a response to.
Stibo.OriginatingDocumentID	The ID of the document that the current message is a response to.
Stibo.FailedCode	Status code in case of a failure.
Stibo.FailedDescription	Description of the failure.

XSL Transformation

This area contains the current XSL transformation as defined by the format of the GDSN data pool. When the transformation is changed, the XSL is applied to the XML template and the result is displayed in the XML preview field.

Copy an Outbound Response Configuration

1. Right-click the row header for the outbound response configuration that you want to copy, and then select **Copy row**.
2. Right-click the same row header again and select **Paste row**.

   A new row is created. The command name of the new row is the command name of the old row but with the term 'Duplicated' added at the beginning.

Delete an Outbound Response Configuration

- Right-click the row header of the outbound response configuration that you want to delete and select **Delete row**.

GDSN Message Exception Handling

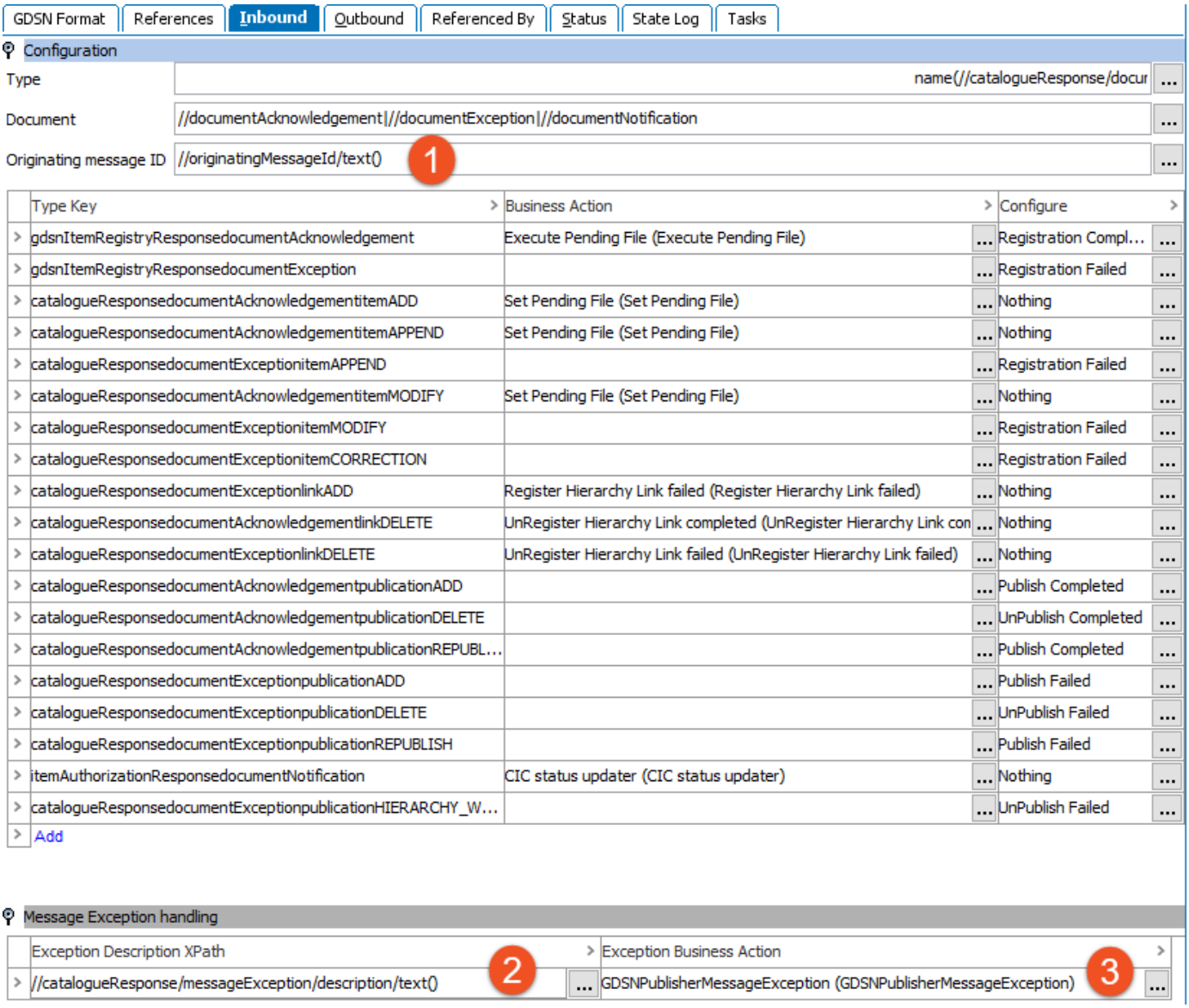
This topic covers general information regarding how message exception handling works in the GDSN Provider and Receiver solution. Ultimately it is up to each implementation to determine how to handle message exceptions when the response comes back from the data pool but an example is provided as a guide to how the process works.

Process Overview

When a message is submitted to the data pool, a response message is sent back from the data pool acknowledging receipt of the original message. These can come in the form of a documentAcknowledgment, a documentException or, a messageException. Sometimes Message Exceptions are sent back from the data pool indicating an error with the original message. This process describes the Message Exception process where the only identifying data back to the original message is the message ID. STEP generates a unique message ID each time a message is sent to the data pool. When a Message Exception is sent back from the data pool, it contains the originating message ID along with any errors that may have been included in the data of the original message. STEP provides a way for the message exception from the data pool to be tracked so that corrective actions can be taken.

On the Inbound tab of the GDSN Format object type or the GDSN Receiver Format object type, there are three configurations that support the handling of GDSN message exceptions. All of these are provided by default and are identified in the images below.

1. **Originating message ID**: This is the XPath that captures the originating message ID.
2. **Exception Description XPath**: This is the XPath that captures the message exception.
3. **Exception Business Action**: This is for the business action to be configured for the way you want to handle message exceptions. The 'GDSNPublisherMessageException' business action for the GDSN Provider and a 'GDSNReceiverMessageException' for the GDSN Receiver are created when the **Easy setup of the GDSN data pool** runs. However, these business rules are not pre-configured as it is at the discretion of the GDSN admin user to determine how to handle message exceptions.



GDSN Message Exception Binds

While this topic does not describe business rules or JavaScript Binds, there are three binds specific to the message exception handling process that can be useful when creating JavaScript business rules for the business action.

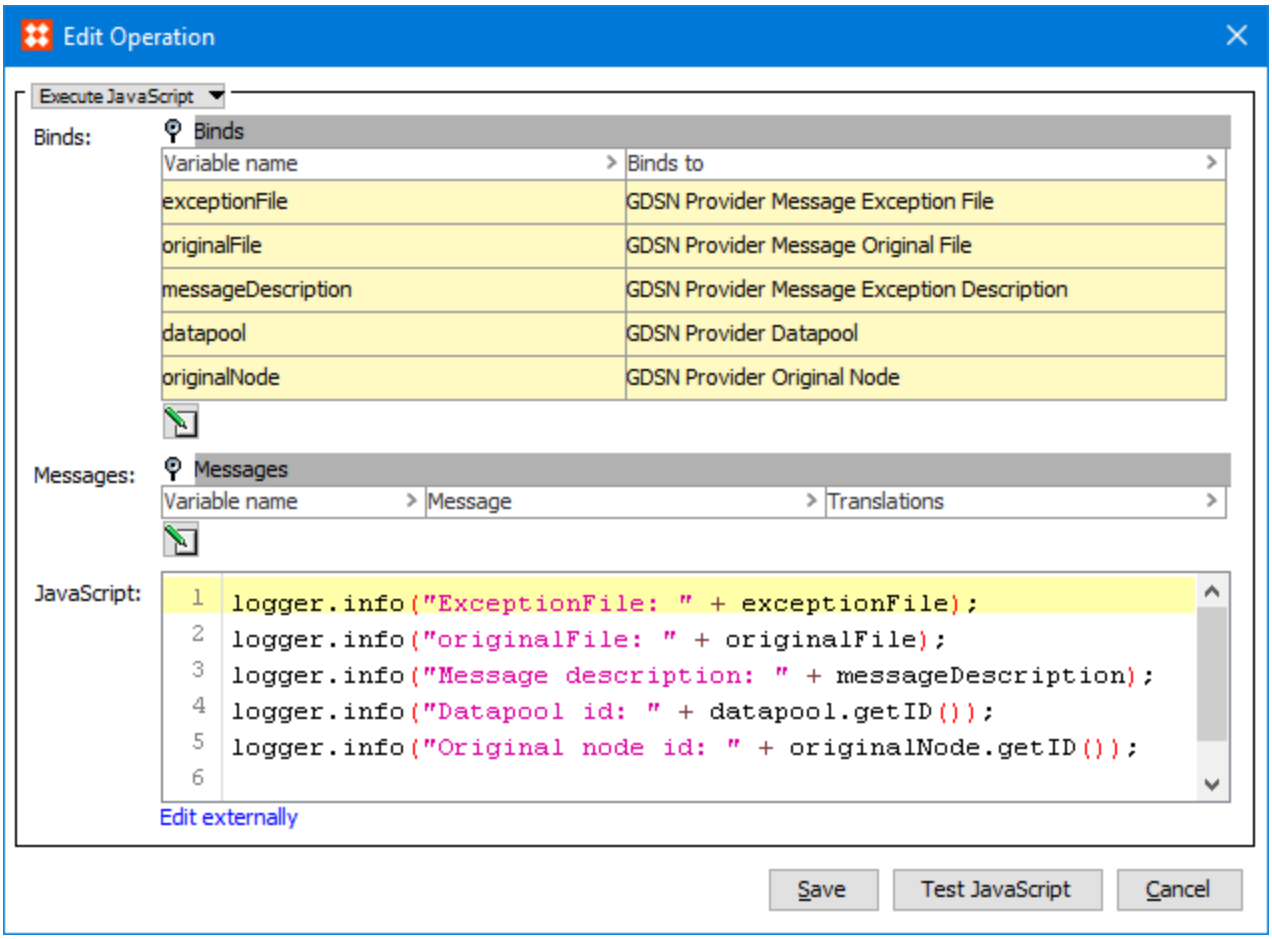
1. **GDSN Message Exception Description**: This bind will provide the GDSN message exception description which is stored on the background process.
2. **GDSN Provider / Receiver Message Exception File**: This bind will provide the GDSN message exception file.
3. **GDSN Provider / Receiver Original File**: This bind will provide the original outbound message file.

For more information about Business Rules, see the **Business Rules** documentation.

For more information about JavaScript Binds, see the **JavaScript Binds** section in the **Resource Materials** online help.

A Message Exception Handling Process Example

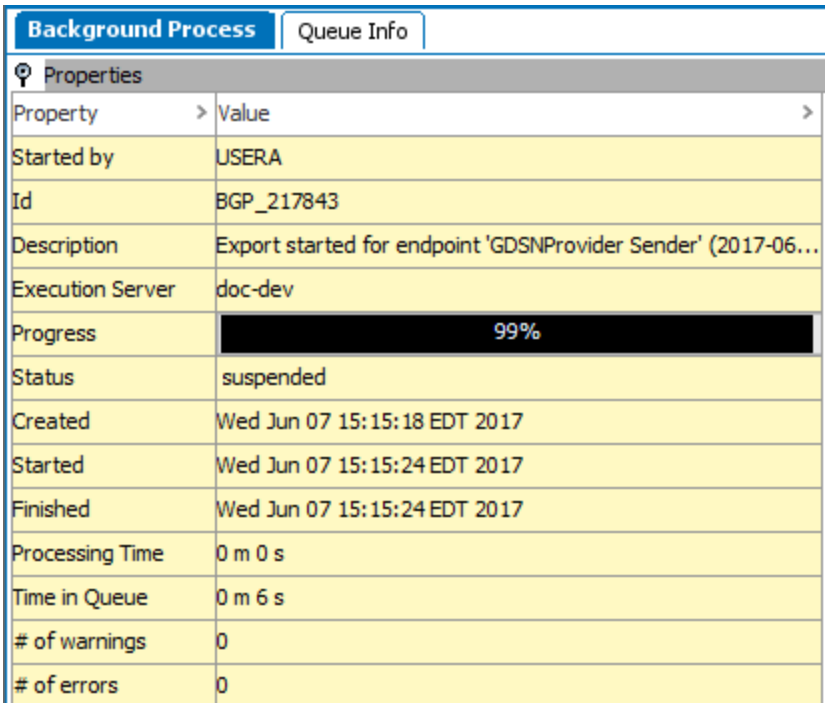
To understand the flow of how the message exception process works in STEP, an example is being provided. In this example, we will register a product to the data pool from the GDSN Provider solution using the following business action.



From the Web UI, a case of product has been registered to the GDSN. This generates the outbound message to the data pool containing the unique message ID as shown below.

```
<messageId>register_5867413948702#BGP_217843</messageId>
```

If generated successfully, the outbound background process will set to 99% progress. This is due to the fact that a response is expected from the data pool.



Background Process | Queue Info

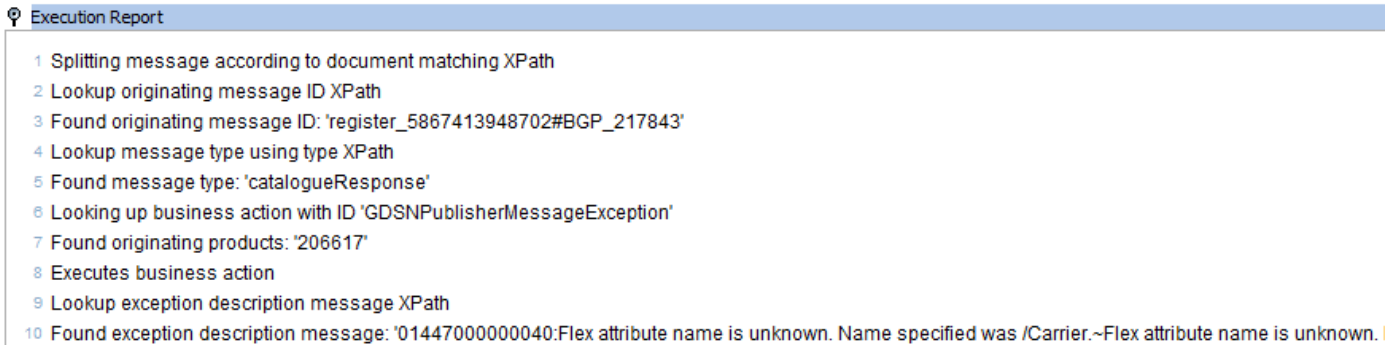
Properties

Property	Value
Started by	USERA
Id	BGP_217843
Description	Export started for endpoint 'GDSNProvider Sender' (2017-06...
Execution Server	doc-dev
Progress	99%
Status	suspended
Created	Wed Jun 07 15:15:18 EDT 2017
Started	Wed Jun 07 15:15:24 EDT 2017
Finished	Wed Jun 07 15:15:24 EDT 2017
Processing Time	0 m 0 s
Time in Queue	0 m 6 s
# of warnings	0
# of errors	0

A response message is sent back from the data pool with the originating message ID. This message ID is used to bind the inbound message back to the original message.

```
<originatingMessageId>register_5867413948702#BGP_217843</originatingMessageId>
```

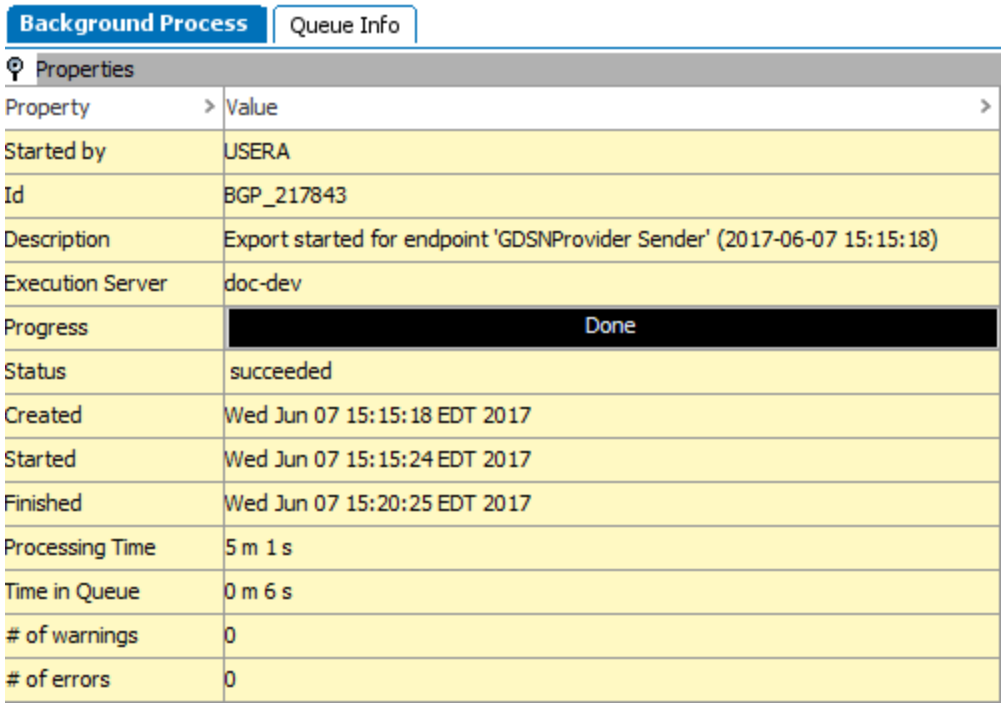
An error report is generated in the background process that can be used to send the product to a workflow.



Execution Report

```
1  Splitting message according to document matching XPath
2  Lookup originating message ID XPath
3  Found originating message ID: 'register_5867413948702#BGP_217843'
4  Lookup message type using type XPath
5  Found message type: 'catalogueResponse'
6  Looking up business action with ID 'GDSNPublisherMessageException'
7  Found originating products: '206617'
8  Executes business action
9  Lookup exception description message XPath
10 Found exception description message: '01447000000040:Flex attribute name is unknown. Name specified was /Carrier.~Flex attribute name is unknown.
```

The original outbound file will move to 'Done' in the Background Process Progress


Background Process
Queue Info
Properties
Property
Value
Started by
USERA
Id
BGP_217843
Description
Export started for endpoint 'GDSNProvider Sender' (2017-06-07 15:15:18)
Execution Server
doc-dev
Progress
Done
Status
succeeded
Created
Wed Jun 07 15:15:18 EDT 2017
Started
Wed Jun 07 15:15:24 EDT 2017
Finished
Wed Jun 07 15:20:25 EDT 2017
Processing Time
5 m 1 s
Time in Queue
0 m 6 s
# of warnings
0
# of errors
0

Configuring the Inbound Message Format

Before you can receive data from GDSN, you must configure the inbound message format templates. The templates define how data received from GDSN is processed and imported into STEP.

1. In the **Tree**, locate and expand the relevant data pool entity.
2. Select **Data pool format**, and then click the **Inbound** tab.
3. Click the ellipsis button (...) next to the item you want to edit or click **Add Row** to add a new configuration.

To configure the inbound message format, complete the following three steps on the **Inbound** tab.

- **Configure How to Extract Data from Incoming GDSN Messages**

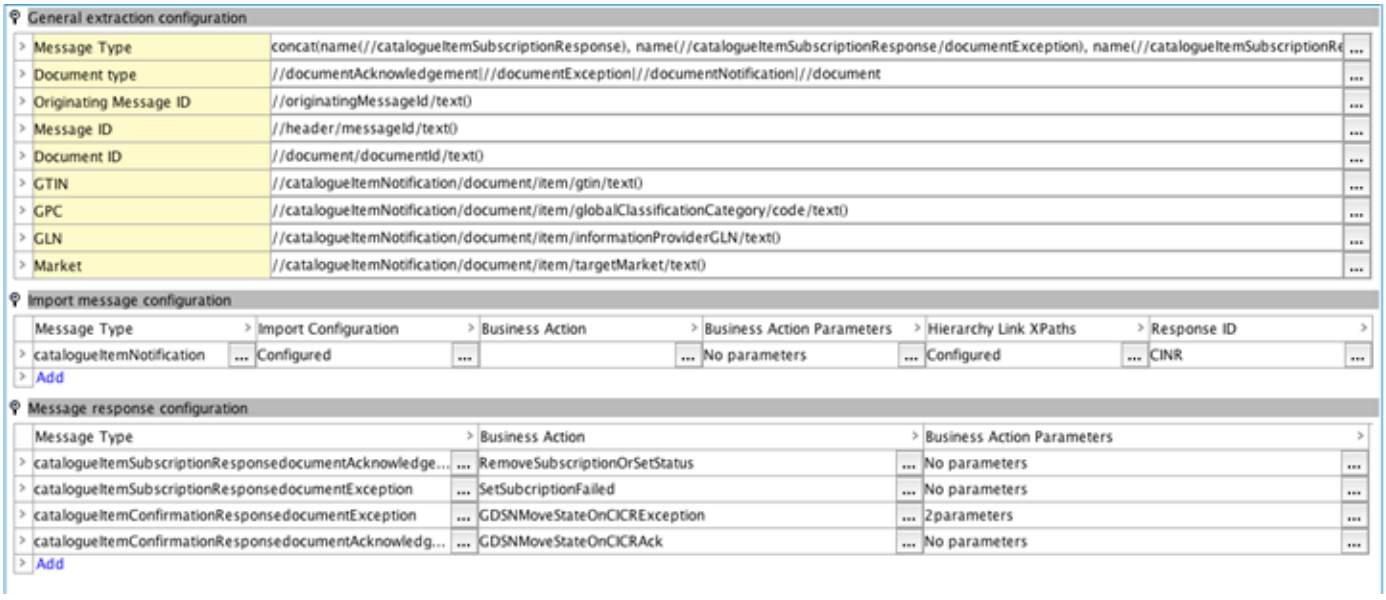
  In the **General extraction configuration** area, you specify the XPath configurations used to extract data from a GDSN message. The data is used to determine the type of the message and to find the documents in a message.

- **Configure How Products are Imported when a CIN Message is Received**

  In the **Import message configuration** area, you specify how Catalog Item Notification (CIN) messages are handled and imported into STEP.

- **Configure How Responses to Messages are Handled**

  In the **Message response configuration** area, you specify how GDSN responses from the GDSN data pool are handled by the GDSN receiver.

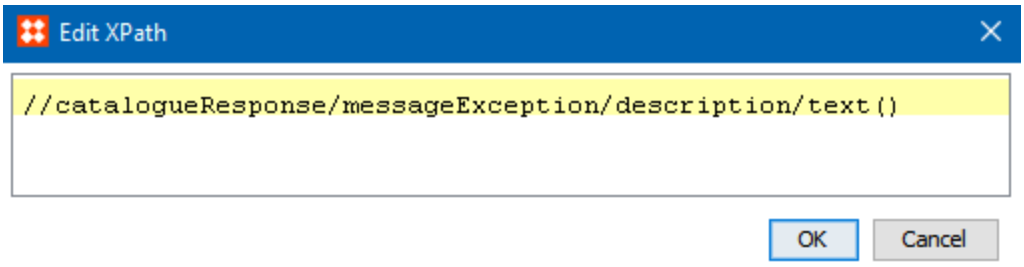


Configure How to Extract Data from Incoming GDSN Messages

To specify how data is extracted from incoming GDSN messages, you must configure the relevant XPath templates.

1. In the **Tree**, locate and expand the relevant data pool entity.
2. Select **Data pool format**, and then click the **Inbound** tab.
3. In the **General extraction configuration** area, click the ellipsis button (...) next to the item you want to edit.

   The **Edit XPath** dialog appears.



You can edit the following XPath templates:

- **Message type**

  The **Message type** field contains an XPath that determines the type of the incoming message. The XPath is evaluated on the message and uses the result as a key to finding the message type.

The following shows an XML sample:

```
<note>
<to>Bob</to>
<from>Frank</from>
<heading>Reminder</heading>
<body>Updates due on Tuesday.</body>
</note>
```

To find out if this is a note or a letter message type apply the following XPath:

```
concat(name(//note),name(//letter))
```

In this example, the note tag is returned because note is present in the XML.

- **Document type**

  Sometimes there are multiple actions in a GDSN message. For example, when more product hierarchies are published at the same time, the received CIN message will contain more documents. The document XPath is used to specify which documents are to be handled separately. In the previous XML example, the following XPath returns 2 parts of the XML.

  ```
  //body|//heading
  ```

- **Origination Message ID**

  Responses from the GDSN data pool to messages sent by the GDSN receiver contains the ID of the message sent to the GDSN data pool. This is called the originating message ID. The XPath extracts the message ID from a message if the message ID is present.

  If the XPath returns an originating message ID, the Message Response table is searched for a message response with a key that matches the result of the Message Type XPath. If the XPath does not return an origination message ID, the Import Message Configuration table is searched for a message configuration with a key that matches the result of the Message Type XPath.

- **Message ID**

  All messages received from the GDSN data pool contain an unique message ID. This message ID is used when responses are returned to the received message. The XPath extracts the message ID from the message.

- **Document ID**

  A GDSN message contains one or more documents. Each document has a unique document ID. The document ID is returned in responses to the document in the message. The XPath extracts the document ID from a document in the message.

- **GTIN**

  Extracts the GTIN attribute for a product item in a GDSN document. A GDSN document can contain one or more items that each contain the attributes of a product.

- **GPC**

  Extracts the GPC attribute for a product item in a GDSN document.

- **GLN**

  Extracts the GLN of the information provider, i.e. the provider of the data in the GDSN message.

- **Market**

  Extracts the GDSN target market code for message.

Configure How Products are Imported when a CIN Message is Received

The import message configuration determines how products are imported when a CIN message is received from the GDSN data pool.

1. In the **Tree**, locate and expand the relevant data pool entity.
2. Select **Data pool format**, and then click the **Inbound** tab.
3. In the **Import message configuration** flipper, click the ellipsis button (...) next to the item you want to edit.

   The **Configure Import Message** wizard is displayed.

Step 1: Key

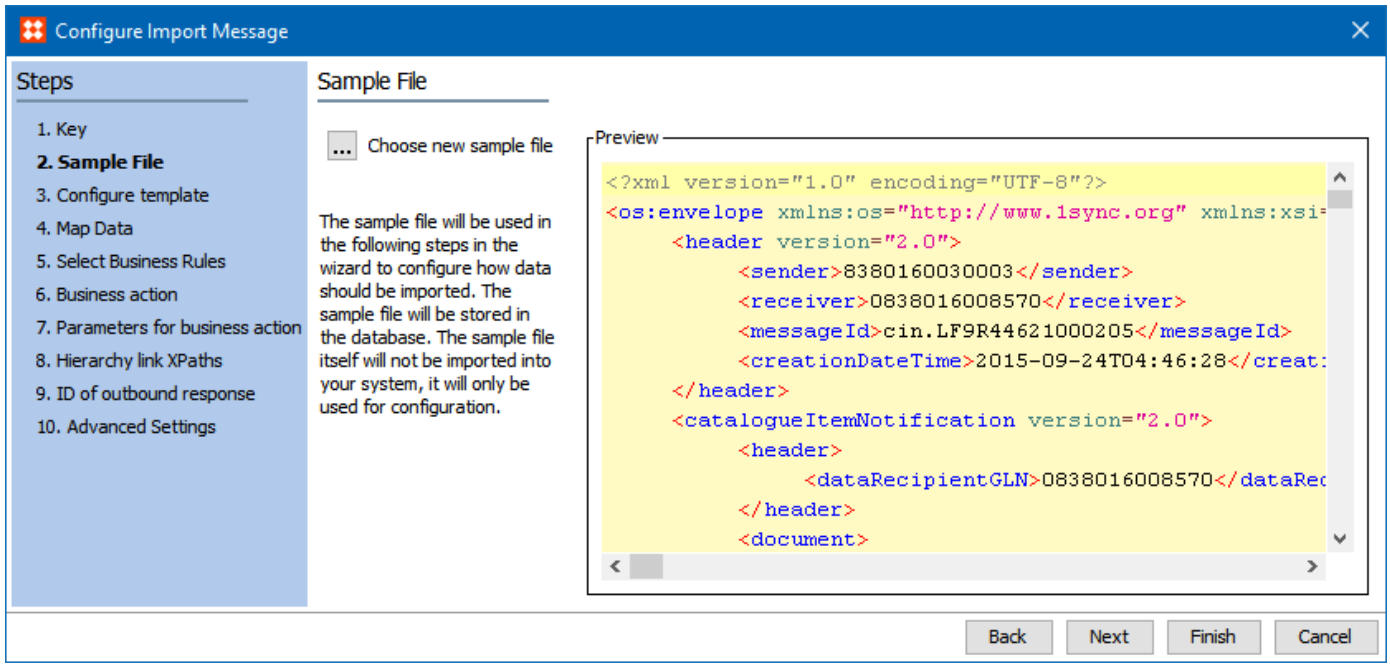
Displays the format of the key that is used with the Message Type XPath parameter, based on the Import Configuration selected. This identifies the import format to be used when a GDSN message is received.

Step 2: Sample File

Select an import sample GDSN CIN XML file to be used to configure how data is imported. The sample file is delivered by the format defined for the GDSN data pool. A non-editable preview of the file is displayed and the values are used in the Conversion Preview on Step 3 and for mapping on Step 4.

Note: The sample file must have no more than 400 records.

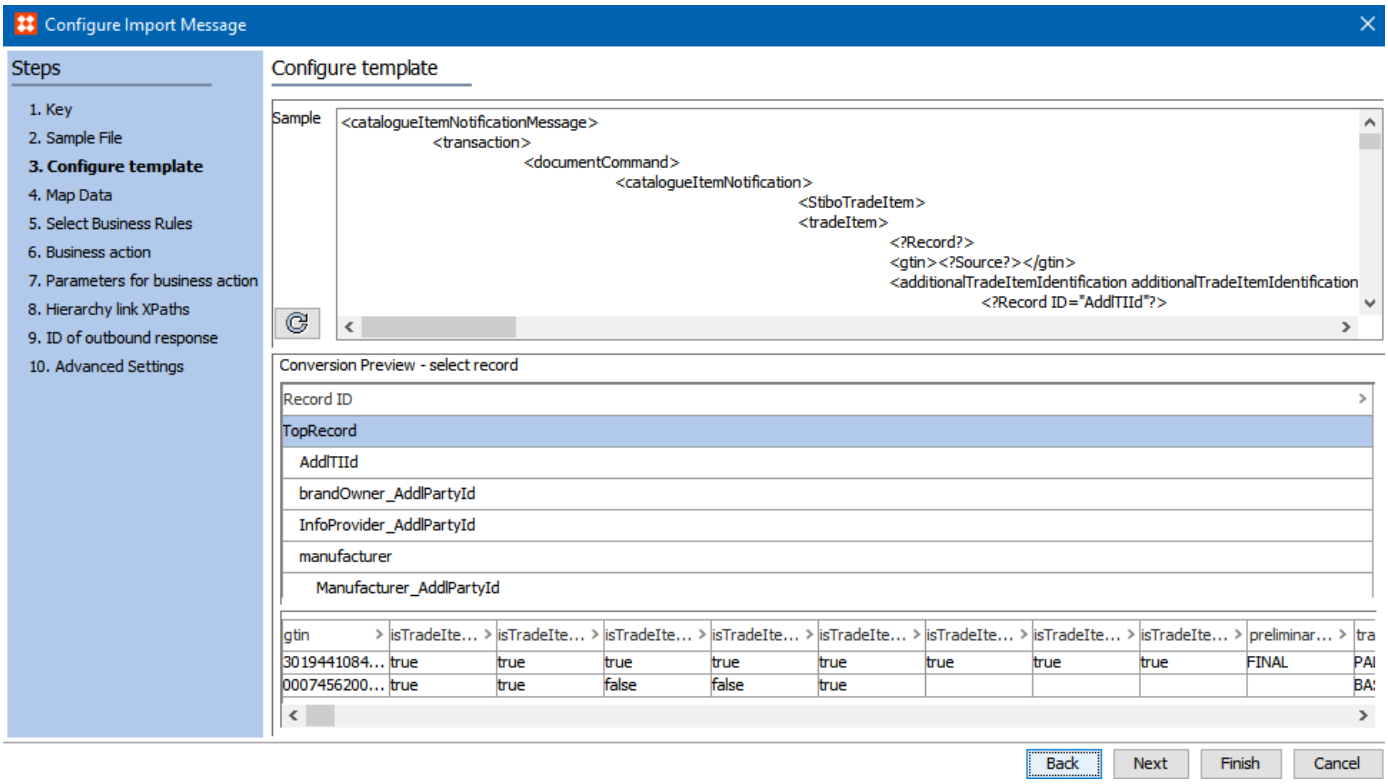
To select a different sample file, click the ellipsis button (...).



Step 3: Configure Template

In the **Sample** area, configure the Generic XML template. This determines the data available for mapping in Step 4. A default template is displayed but can be modified or replaced as needed. Click the refresh button,  , after loading a new template.

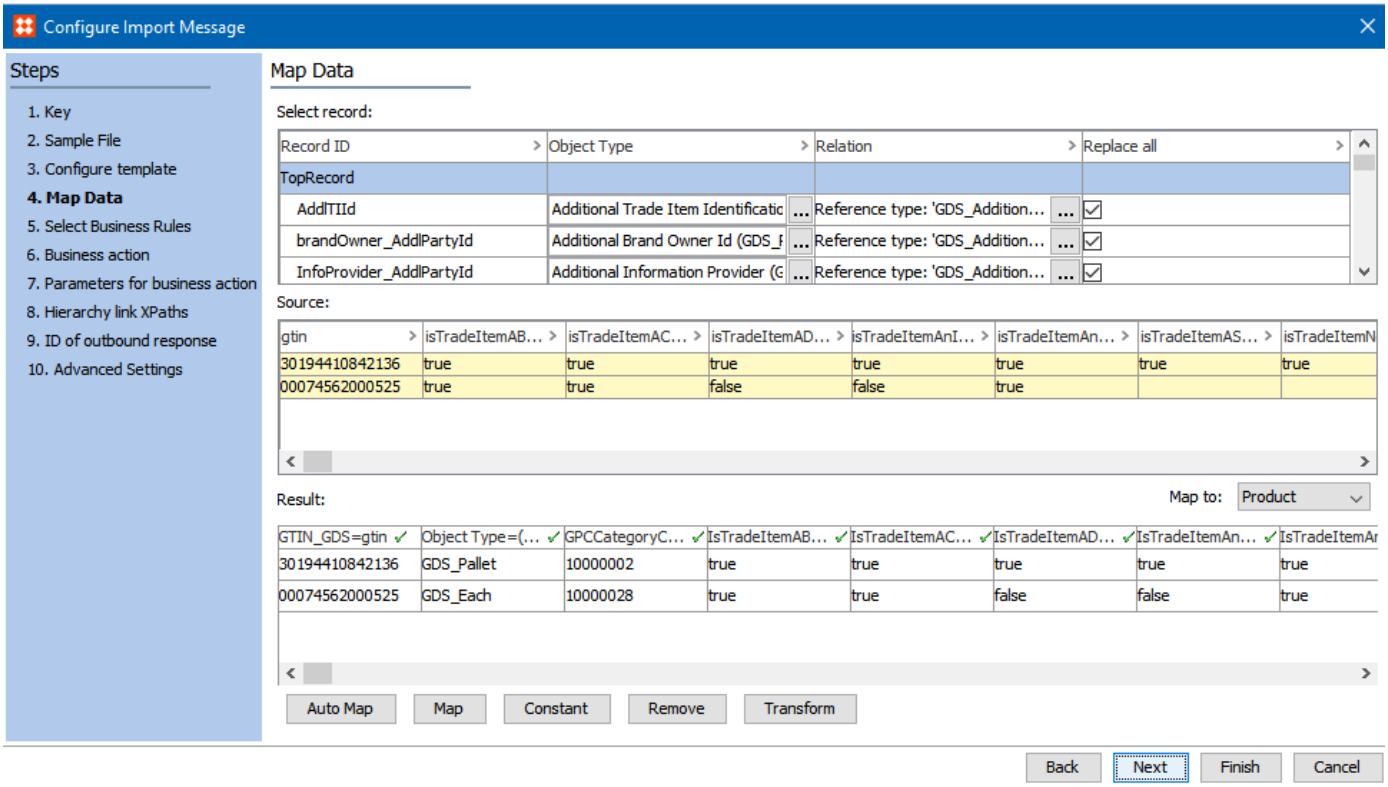
When multiple rows are displayed in the **Conversion Preview - select record** section, selecting a row allows you to preview the affected objects below.



Step 4: Map Data

Specify how the data in the GDSN XML message is mapped to products and attributes in STEP.

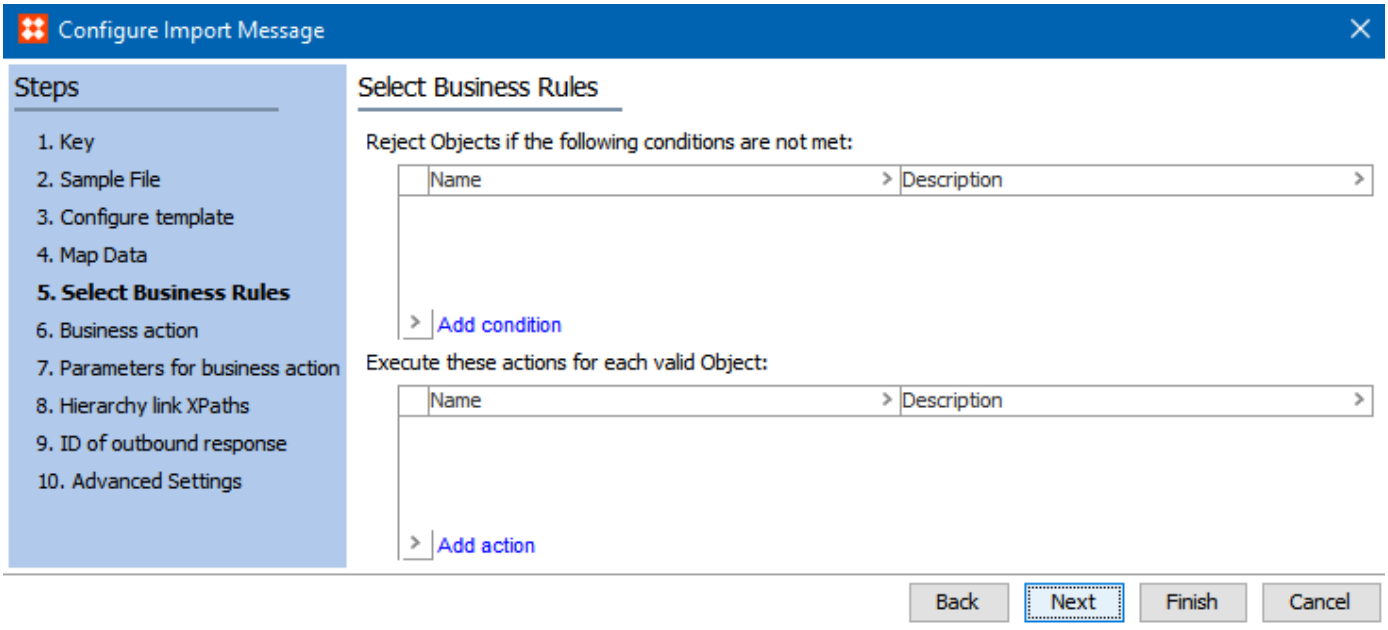
- You must map **productType** column to 'Object Type.'
- The Source columns 'gtin', 'targetMarket' and 'informationProviderGLN' are mapped by the format and must always be mapped. If these columns are not mapped, the CIN message import will fail.



Step 5: Select Business Rules

Select any business rules needed to validate the objects before import.

- First, objects are validated against the specified conditions.
- Then, business actions are executed on the valid objects.

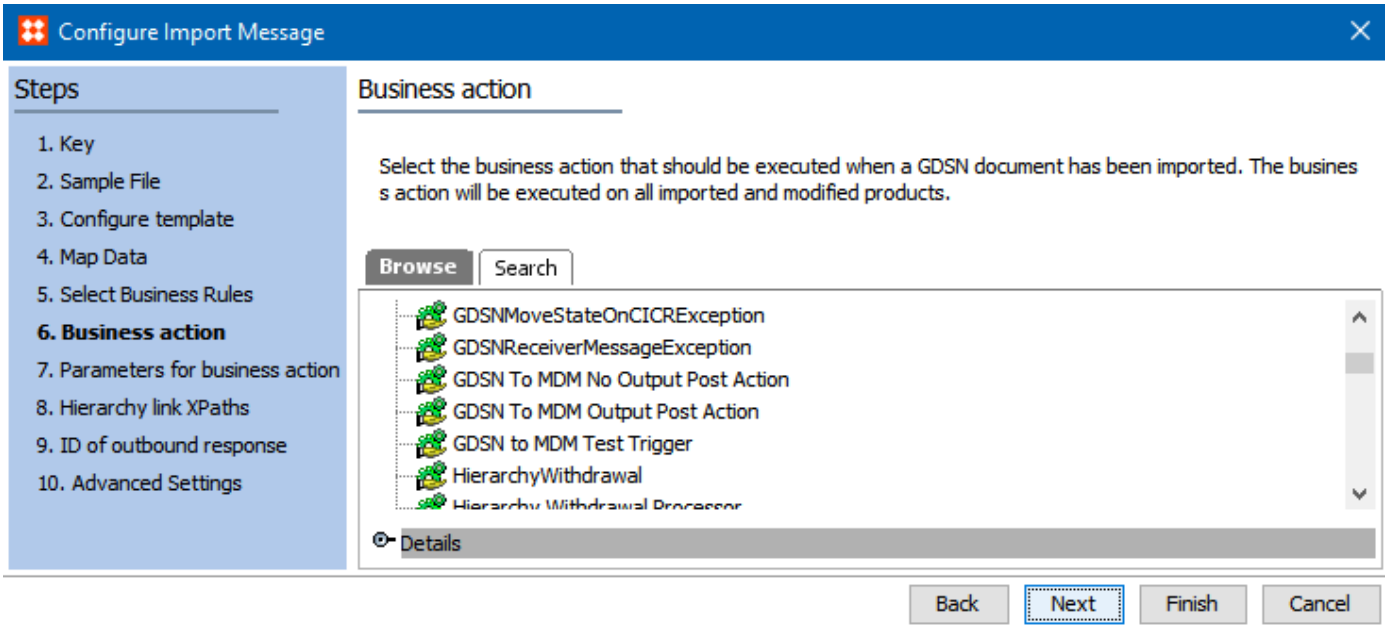


Step 6: Business Action

Optional. Specify the business action to be executed when the products in a document in a GDSN message have been imported. The business action is executed on all new and updated products.

This is, for example, where you specify that you want to use auto-classification to move the imported products into different folders and classification. The auto-classification rules must have been set up before starting the wizard.

To clear the current selection, choose **<Select none>** at the top of the list.



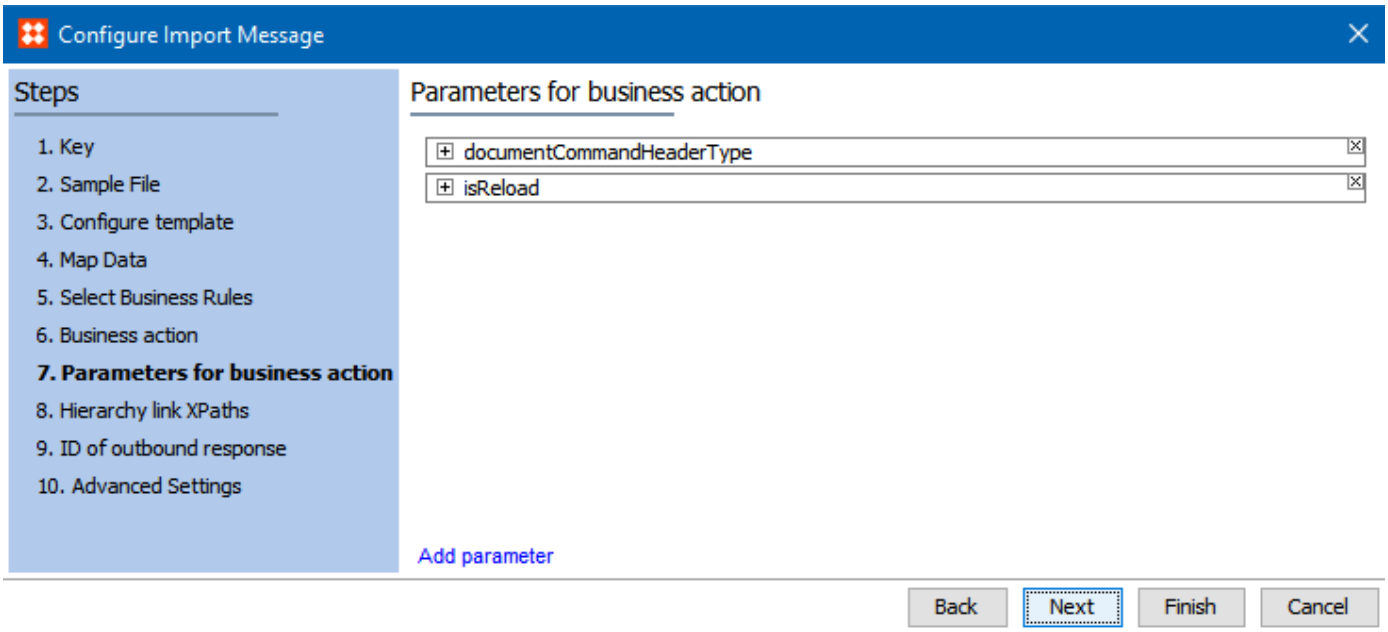
Step 7: Parameters for business action

Parameters can extract additional data from the document XML if required by the business action selected in the previous step.

Configure the parameters by clicking the **Add parameter** link.

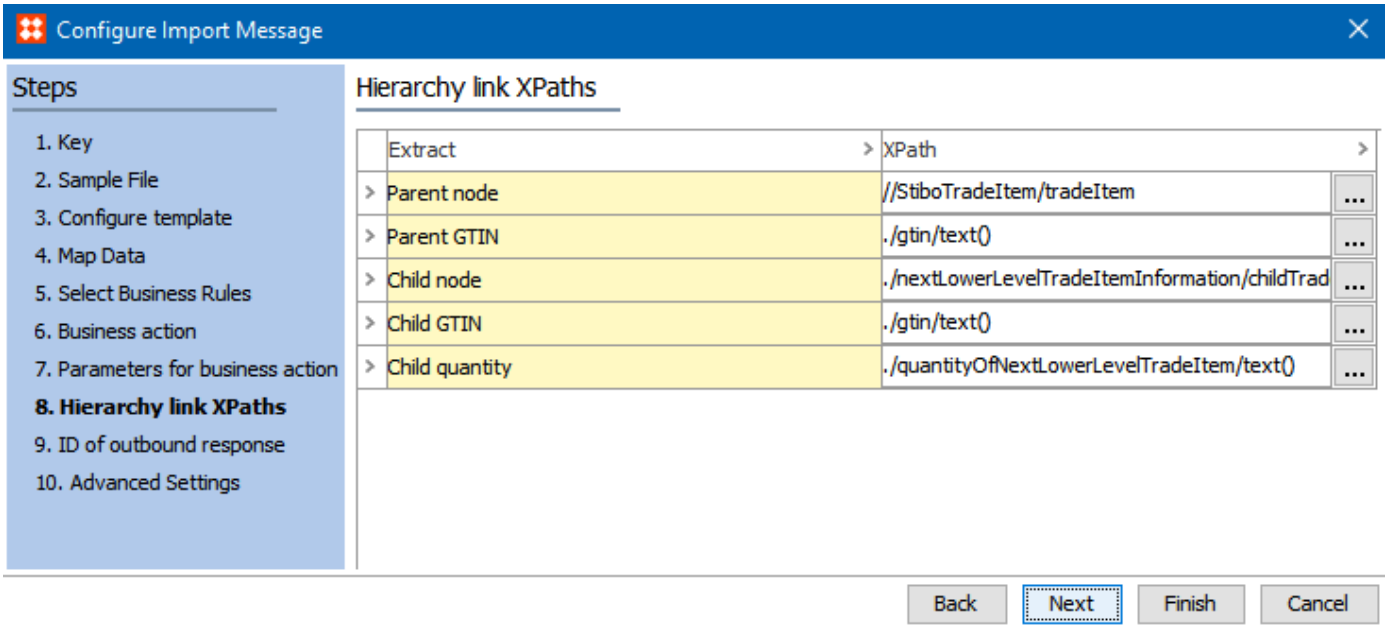
- **Name** - enter a name used to identify the parameter.
- **XPath** - use to find the information needed in the XML document.

Use the JavaScript plugin and bind in the GDSN Data Map for the business action. The data can now be found using the parameter name.



Step 8: Hierarchy link XPaths

Specify how to extract the additional data that is needed to create the package hierarchy for the products in the GDSN XML files.



All parent XML nodes in the XML document must be extracted and all child XML nodes belonging to a parent node in the document must be extracted. For each parent node, the content of the XML that defines the GTIN of the parent must be extracted. You must also define how the child GTIN and the quantity of new lower level is extracted from the document XML.

This example shows how to specify hierarchy link XPaths. The XML document defines the package hierarchy as follows:

```
<hierarchy>
    <parent gtin="parentGTIN">
        <child quantity="10">childGTIN1</child>
        <child quantity="5">childGTIN2</child>
    </parent>
</hierarchy>
```

The parent product has two child products, where the parent contains ten of the first child product and five of the second child product.

Next, specify the following XPaths:

The XPath to extract the parent XML node:

```
//hierarchy/parent
```

The XPath to extract the GTIN value for the parent from the XML node:

```
./@gtin
```

The XPath to extract the child XML nodes relative to the parent:

```
./child
```

The XPath to extract the child GTIN value from the XML node:

```
./text()
```

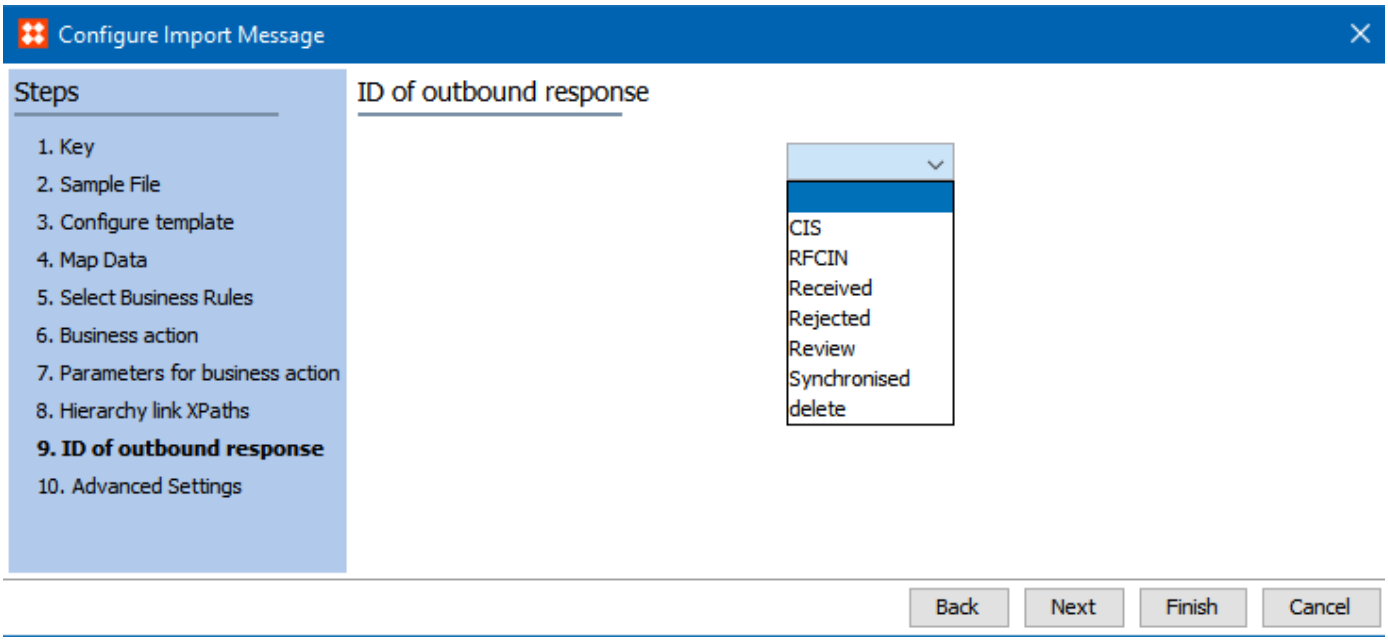
The XPath to extract the quantity of next lower level value from the XML node:

```
./@quantity
```

Step 9: ID of outbound response

The GDSN communication protocol requires that a CIN response is sent to the GDSN data pool that contains the result of importing the data in the CIN message. Sending data to the GDSN data pool is handled by the outbound endpoint configured for the data pool.

Select the outbound response format that is executed for the outbound endpoint when a CIN message has been handled. The dropdown contains a list of the valid response formats for the outbound endpoint.



For information on how to specify the format, see **Configuring the Outbound Message Format**.

After completing the wizard, configure how the GDSN receiver handles messages that are sent as response to received messages. For more information, see **Configure How Responses to Messages Are Handled**.

Copy an Import Message Configuration

1. Right-click the row header of the Import Message Configuration to copy and select **Copy row**.
2. Right-click the same row header again and select **Paste row**. The new Import Message Configuration row contains the same Message Type as the one copied with '(Duplicate)' prepended.
3. Edit the new row as needed, for example, update the message type.

Delete an Import Message Configuration

1. Right-click the row header of the Import Message Configuration to delete and select **Remove**.
2. The deleted row is removed from the Import Message Configuration flipper.

Configure How Responses to Messages are Handled

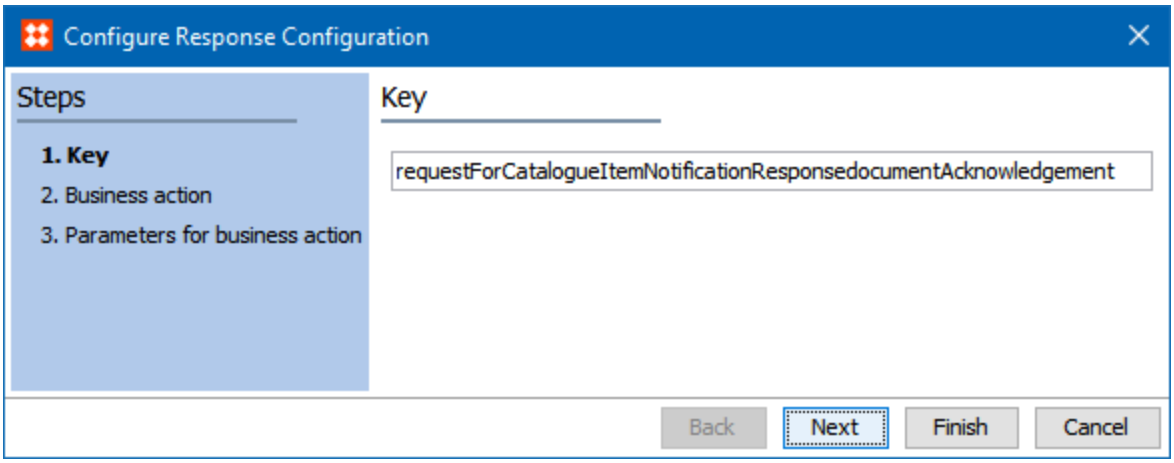
In the Message response configuration area, specify how GDSN responses from the GDSN data pool are handled by the GDSN receiver. This is, for example, responses to subscription requests (CIS message) or responses to catalog item confirmation (CIC) requests.

1. In the **Tree**, locate and expand the relevant data pool entity.
2. Select **Data pool format** and click the **Inbound** tab.
3. In the **Message response configuration** area, click the ellipsis button (...) next to the item you want to edit.

   The **Configure Response Configuration** wizard is displayed.

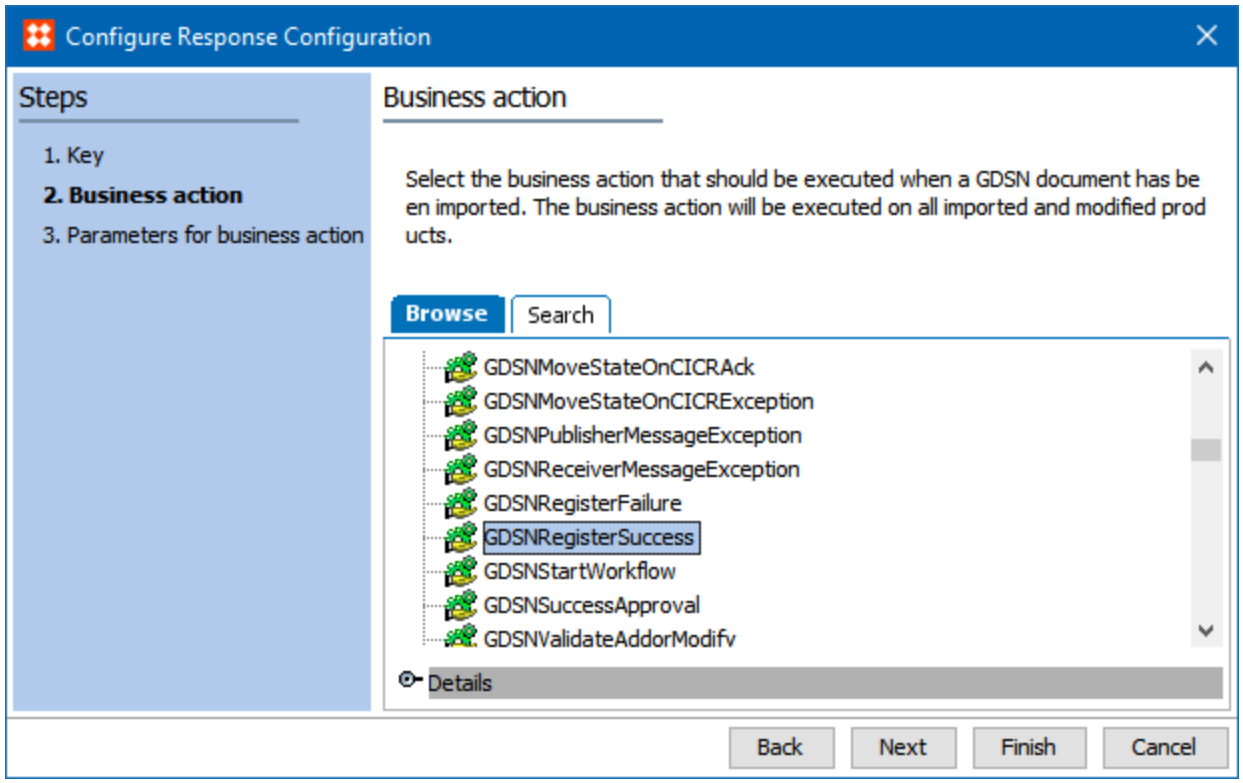
Step 1: Key

Configure the key of the format. The key is used with the "Message Type" XPath parameter to identify the response configuration to be used when a GDSN response message is received.



Step 2: Business Action

Select the business action that is executed when a response message is received.

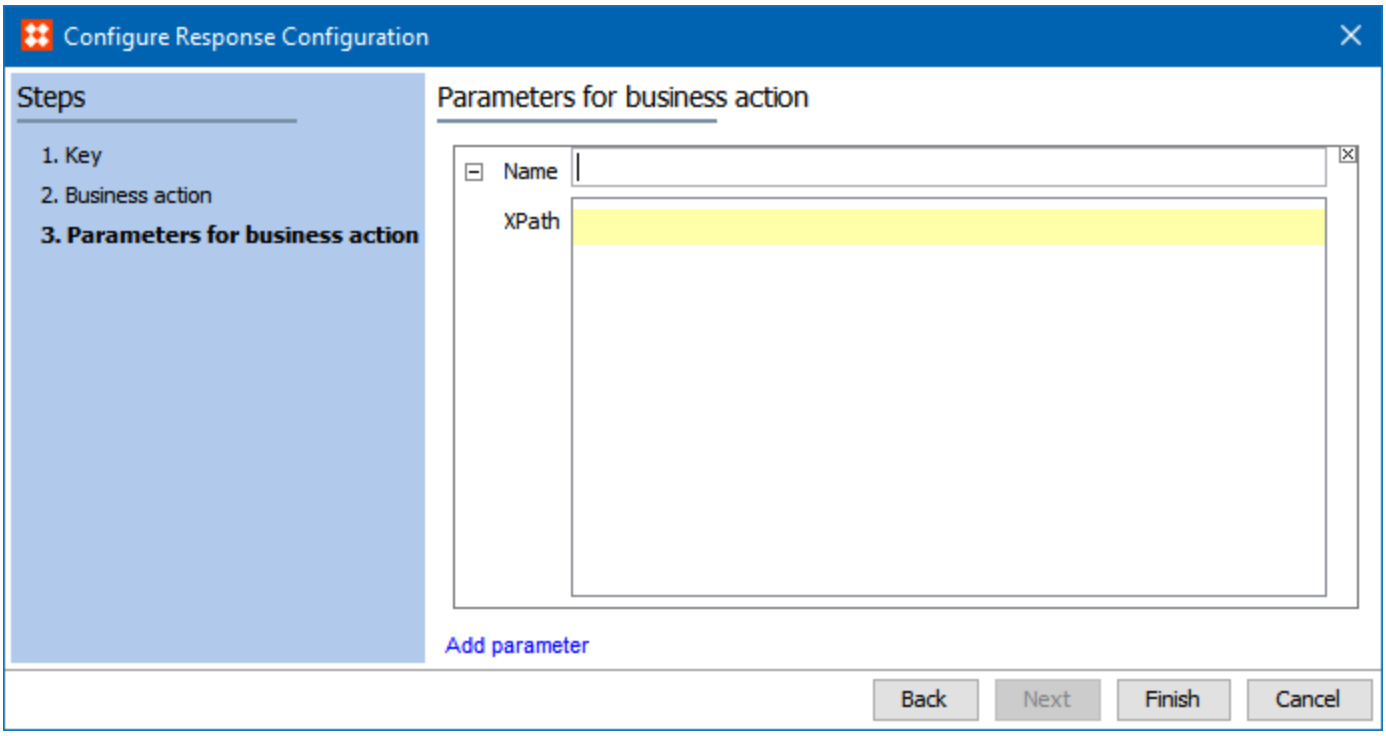


Step 3: Parameters For Business Action

Configure the parameters used by the business action that you specified in the previous step. To add new parameters, click the **Add parameter** link. The parameters can extract additional data from the document XML if required by the business action.

In **Name** field, enter a name that is used to identify the parameter. The **XPath** is used to find the information needed in the XML document.

Use the JavaScript plugin and bind in the GDSN Data Map for the business action. The data can now be found using the parameter name.

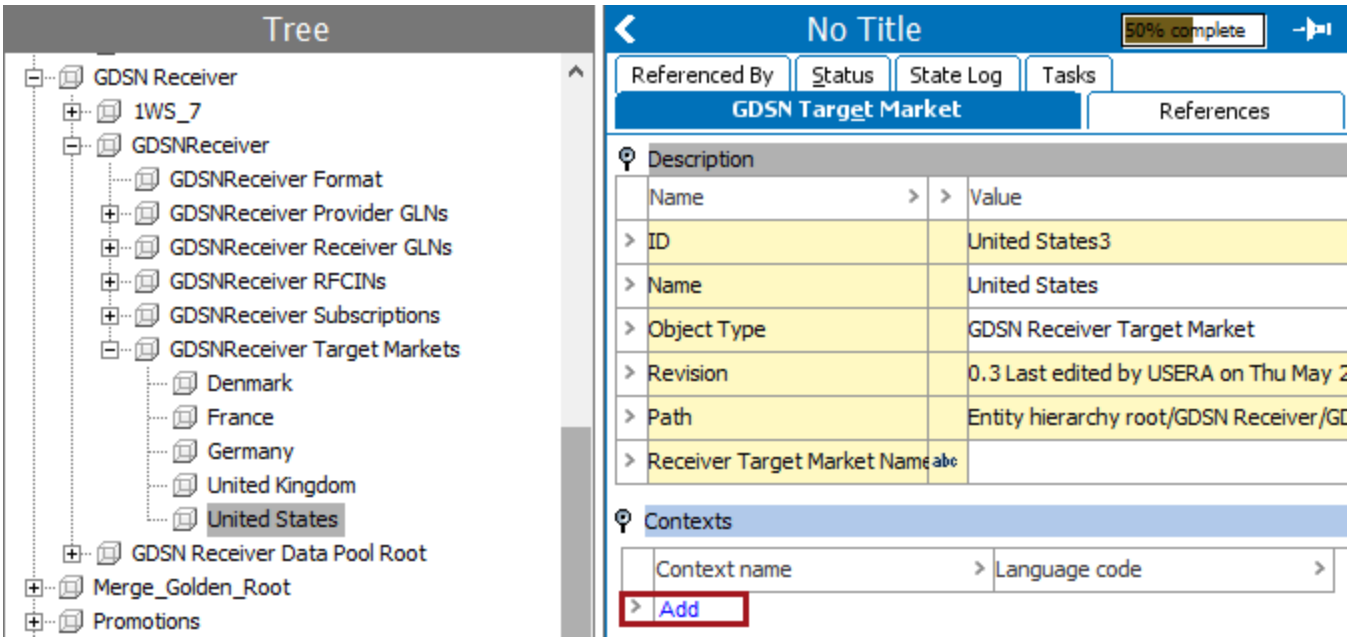

Configure Response Configuration
Steps
1. Key
2. Business action
3. Parameters for business action
Parameters for business action
Name
XPath
Add parameter
Back
Next
Finish
Cancel

Mapping Multiple Languages and Qualifiers in the Inbound Message Format

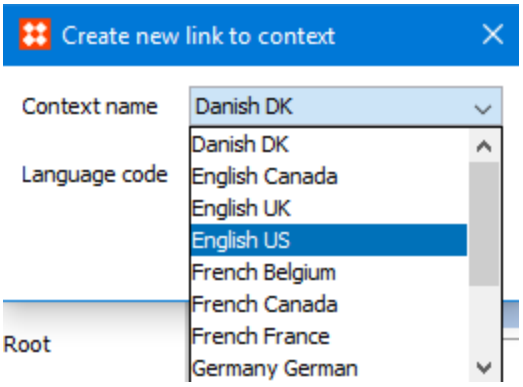
Multiple languages or language qualifiers for a target market can be configured for the CIN using the following instructions.

Set-up for Language Qualifiers

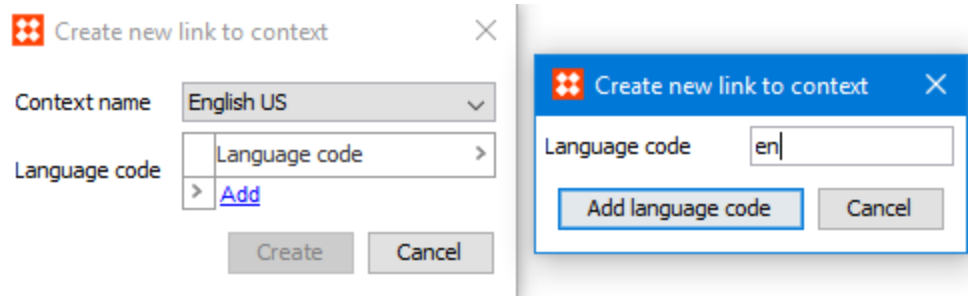
1. On the **GDSN Receiver Target Market** object type, select the 'Add' link.



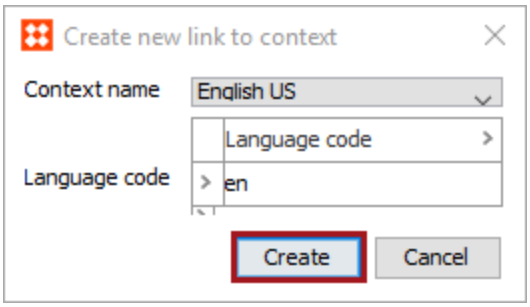
2. Select the **Context name** that is used for the target market.



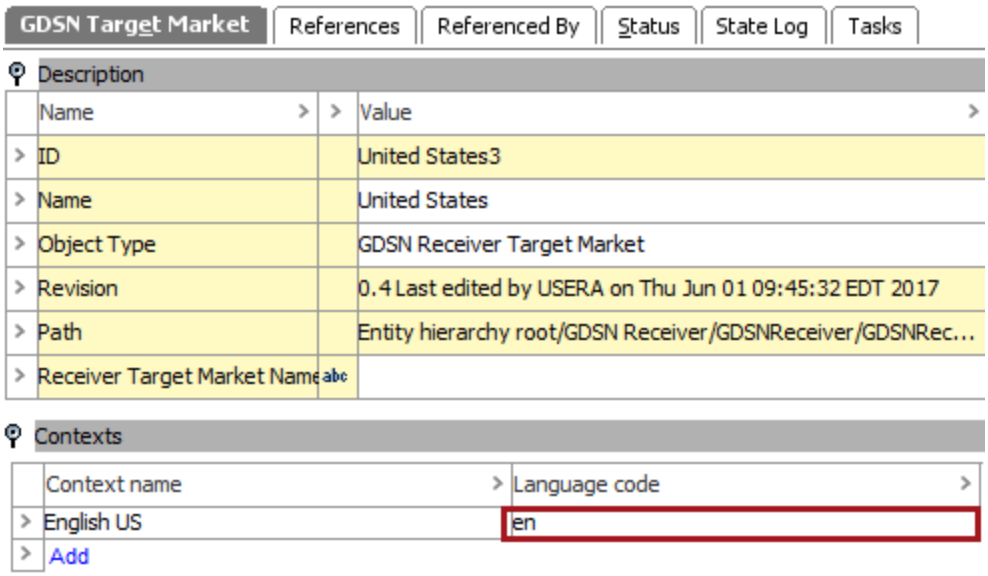
3. After selecting the Context name, click the 'Add' link for the **Language code** and enter the language code. Click the 'Add language code' button. This will be the language qualifier your are expecting from the data pool.



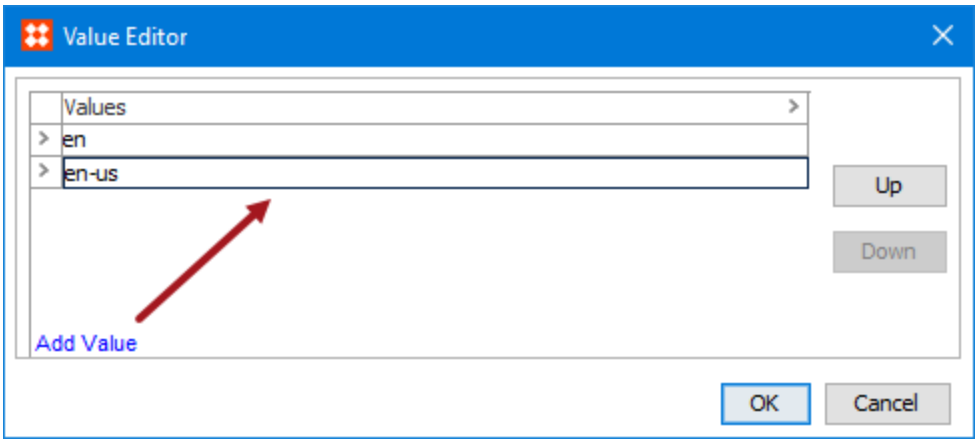
4. If additional languages are required for the same context, use the 'Add' link to supply them.
5. Click on **Create**.



6. To enter additional language qualifiers once the context has been created, double-click within the language code parameter.



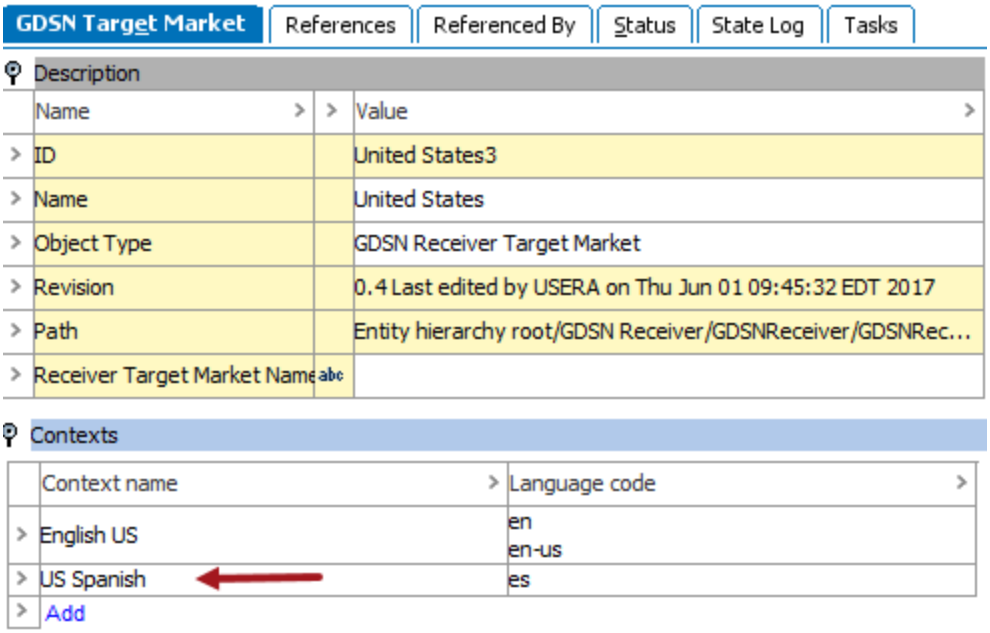
7. This will bring up the **Value Editor**. Click on the 'Add Value' link and an additional entry will appear and an additional value can be entered. This can be done for as many language qualifiers as you are expecting in the inbound CIN for that context.



Note: Additional configurations and mappings need to be made for the language qualifiers to come through correctly. See the **Configuring the Import Message for Language Mappings** in the subsection below.

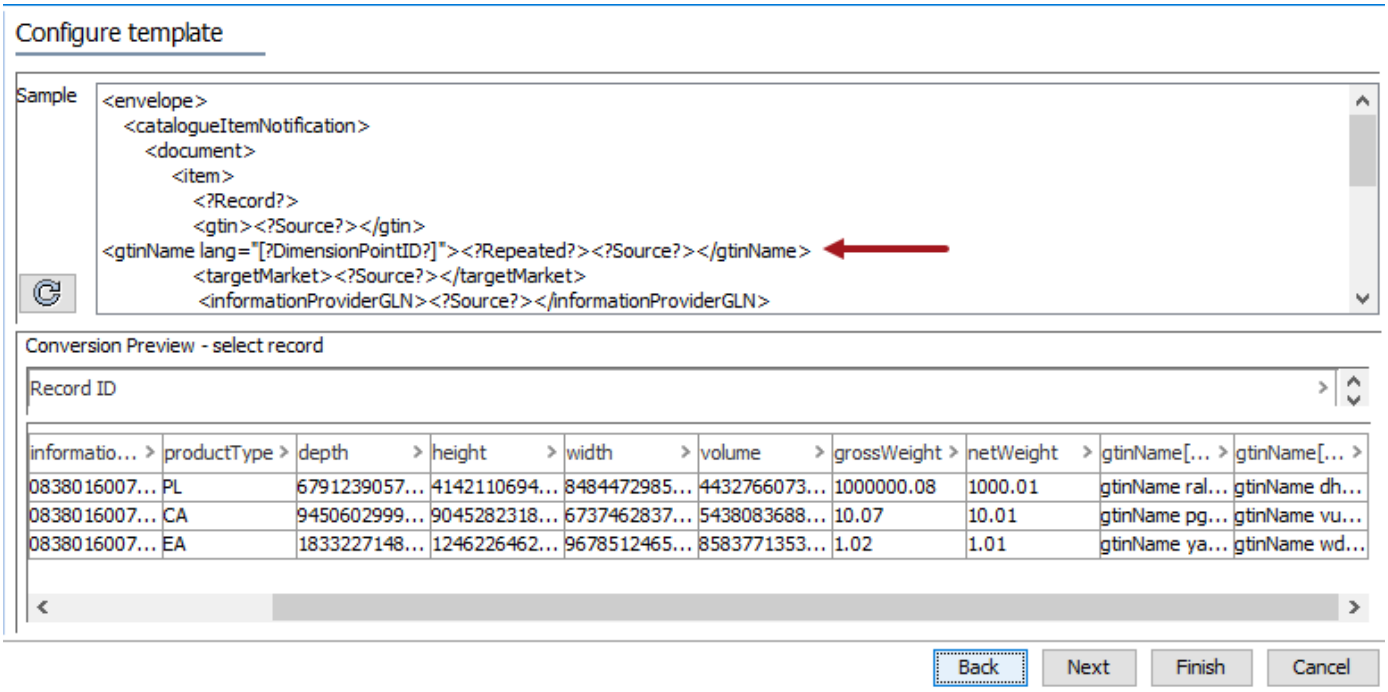
Mapping Multiple Languages

In addition to mapping multiple language qualifiers for a single context, multiple languages can be mapped for a target market. For instance, the target market may be US but you want to support US Spanish in addition to English. This means a different context would need to be used and the supporting language qualifiers would need to be added for that context. Follow the same instructions for Mapping Language Qualifiers and you will see the additional context in the target market as shown in the image below.

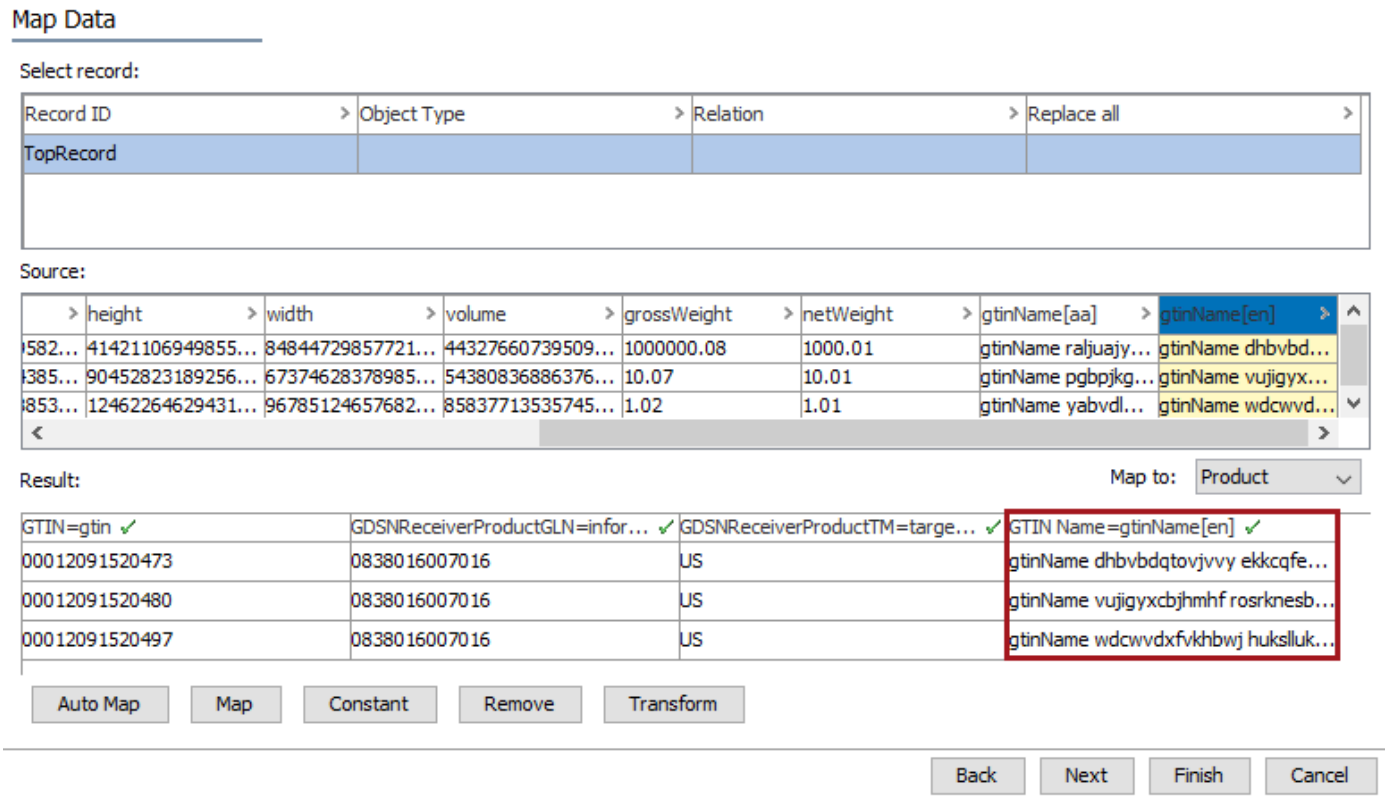


Configuring the Import Message for Language Mappings

In order for the additional language codes to work, the CIN Import Configuration needs to be updated and mapped. In the example below, the GTIN name is language dependent and has been added to the **Configure template**. Note that two 'gtinName' columns appear in the Record ID. This is because of the two records in the sample file.



When **Next** is selected to map the data, both of the 'gtinName' columns appear. Only one of these columns needs to be selected and mapped. This will be true for every language-dependent field that has two values in the sample file.



For more information about configuring inbound CIN messages, see **Configure How Products are Imported when a CIN Message is Received**.

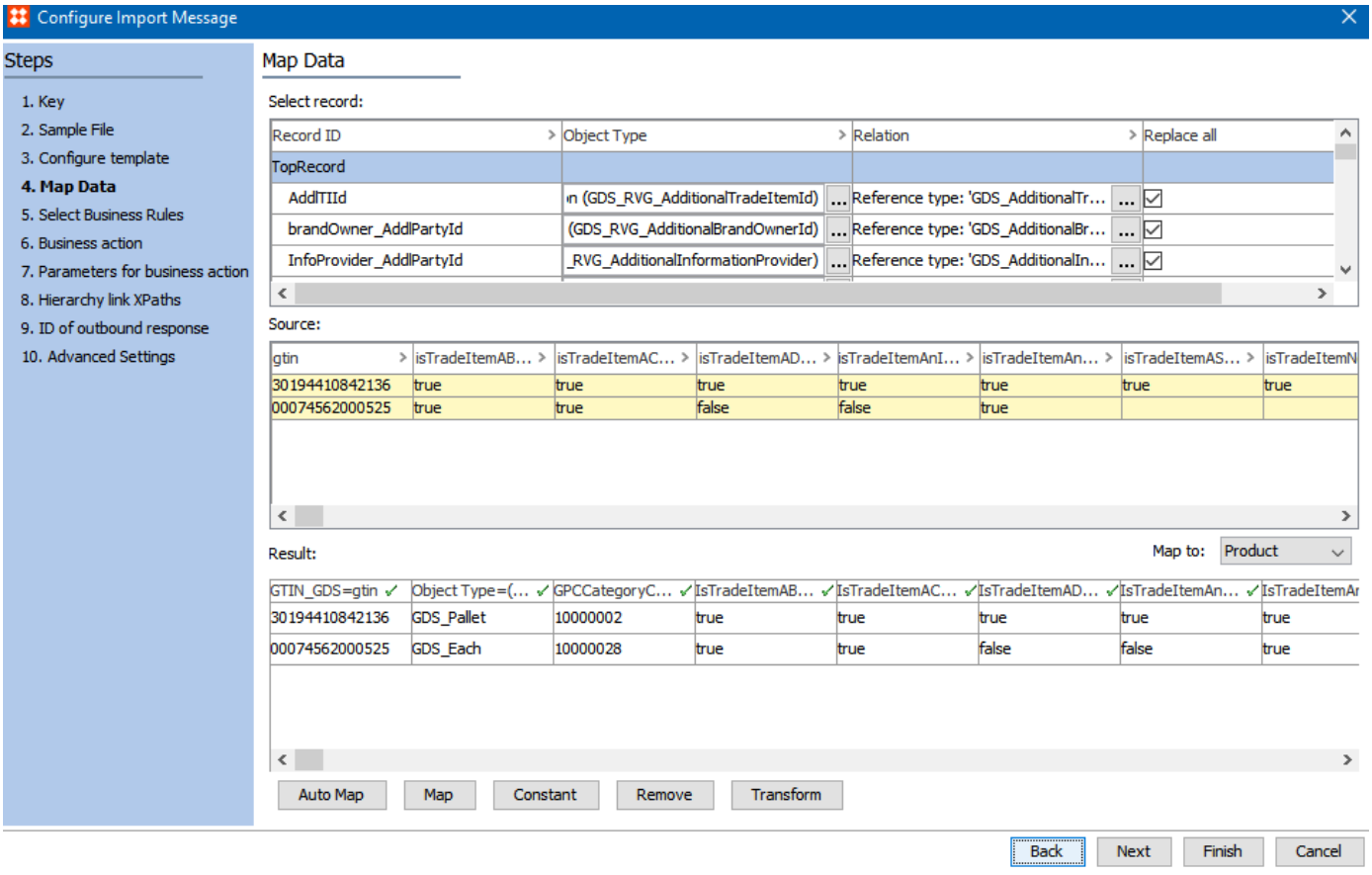
Receiving Products from the GDSN

After setting up the data model, the data pool and the inbound and outbound message formats, the system is ready to receive products from GDSN.

Product Import and Hierarchy Linking

A product import starts when STEP receives a CIN file from GDSN. In the inbound format, the CIN file is identified and the correct row in the format is invoked.

First, the subscription is identified and then all products are linked to the subscription to make it easy to identify where a product came from. Many of the XPaths specified in the inbound format are used to locate the subscription. The importer uses the mappings from the import configuration as shown in the following image.



In this example, the **productType** column is mapped to the available object types in the hierarchy. Accurate mapping is important since it allows the correct attributes and references to be available at each level of the packaging hierarchy for imported items. The default CIC workflow is configured to start when a new pallet product is imported.

When the import is completed, there are two different business action options. The business actions specified in step 5 of the **Configure Import Message** wizard are run immediately after the products are created.

The business actions specified in step 6 of the wizard, however, are run when the products in a document in a GDSN message have been imported and after the linking has occurred. The package hierarchy must also have been created. These rules can include parameters that can extract additional data from the CIN document.

The package hierarchy is created after the products are imported. The package hierarchy is created based on the hierarchy link XPaths specified in step 8 of the wizard.

For more information, see **Configure How Products are Imported when a CIN Message is Received**.

The Product Root and Auto-classification

When products are imported, they are initially placed in the GDSN Product Root specified in the component model and the data pool set up.

If you have selected the business rule References and Links > Automatic Classification in step 6 of the wizard, auto-classification rules are used to move the imported products into different folders and classifications. The auto-classification rules must have been set up separately beforehand.

For more information on setting up auto-classification, see **About Automatic Classification**.

Unique Keys

When a product is imported via a CIN import, the three attributes GTIN, Provider GLN and Target Market are applied to the product. The attributes are used to create a unique key that identifies the product.

If an update of an already existing product is received from GDSN, the importer uses the unique key to identify and update the product.

The unique key is created by the format when running the **Easy setup of GDSN Receiver data pool** from the Component Model.

Sending the CIN Response Message

When STEP receives a CIN message, the GDSN expects a response message containing information about the state of each document import. If a document import fails, a Document Exception is sent. When a document import succeeds, a Document Acknowledgment is sent.

The inbound format creates an XML document that contains all successes and failures, which can then be transformed in the outbound format via XSLT. This message is sent when the import is complete and the products have been linked.

Managing GDSN Receiver Subscriptions in Web UI

You can manage your organizations GDSN subscriptions from the Web UI. You have the following options:

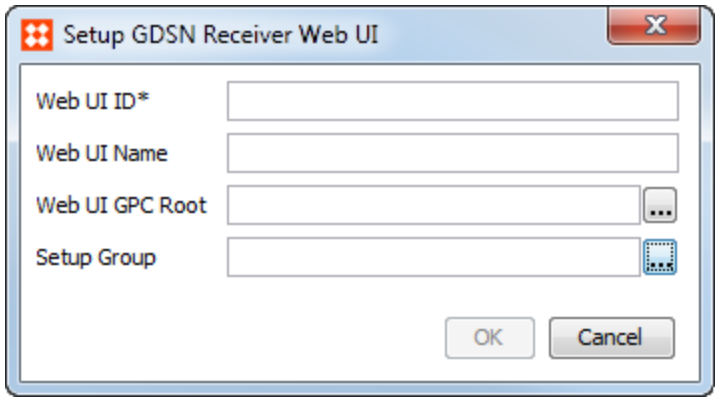
- Create GDSN subscriptions
- Import subscriptions from Microsoft Excel spreadsheets
- Unsubscribe from a GDSN subscription
- View subscriptions and the products received from the subscription
- View CIC status and date on the link between a subscription and a product received from GDSN

You can add GDSN components to any existing Web UI. However, we recommend that you create a standard GDSN receiver Web UI from within STEP Workbench.

Create a GDSN Receiver Web UI

Important: When you create a standard Web UI it is not ready to be used in production. It is meant as a starting point for creating a GDSN receiver Web UI that matches your organizational requirements.

1. In STEP Workbench, in the **Tree**, locate and select the relevant data pool.
2. Right-click the data pool, and then select **Create GDSN Receiver Web UI**. The **Setup GDSN Receiver Web UI** dialog displays.



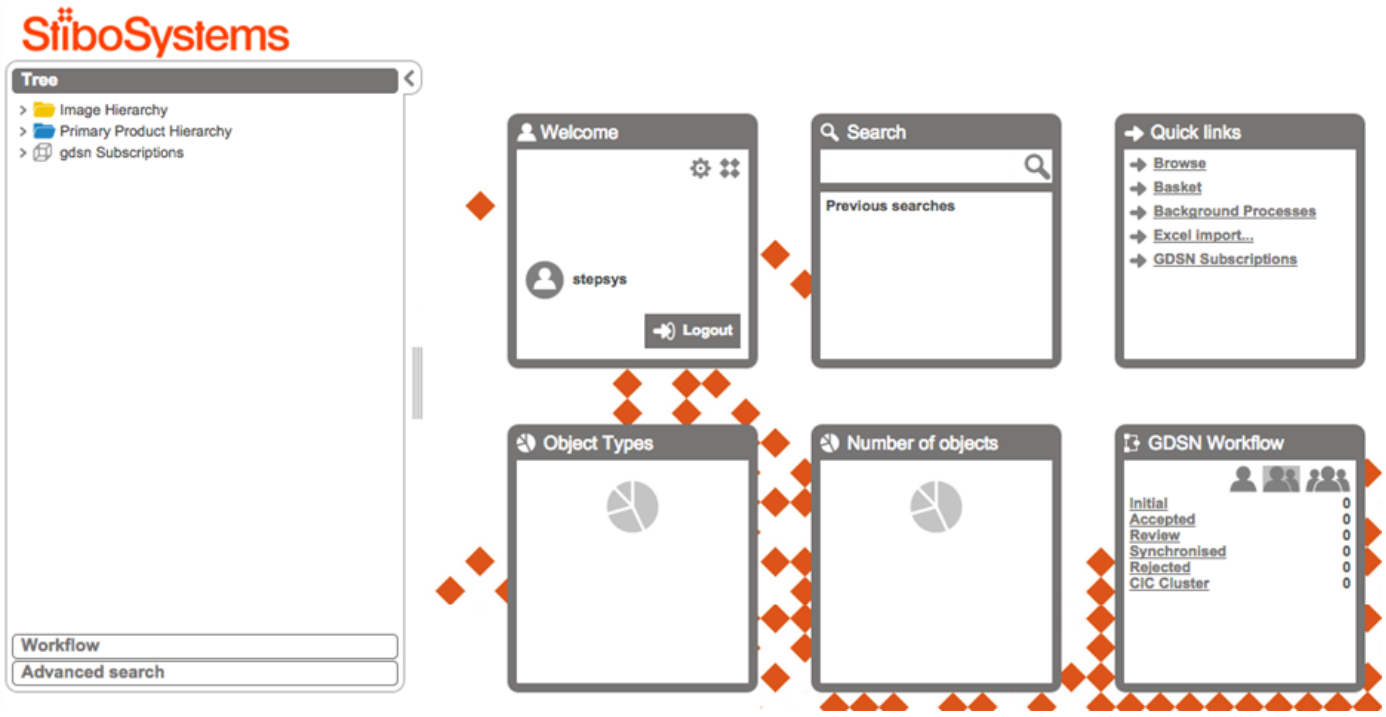
3. Specify the following information:
   - **Web UI ID**: enter the ID of the Web UI. The ID is used as Web UI ID in the browser. For example, http://host/webui/ID.
   - **Web UI Name**: enter a descriptive name for the Web UI. This field is optional and is only used in the Workbench.

- **Web UI GPC Root**: enter the root of the Global Product Classification hierarchy. This field is optional. If provided, the create subscription dialog can validate the GPC selection.
- **Setup Group**: Specify the setup group that you want the Web UI to belong to.

4. Click **OK**. A new Web UI is created in the specified setup group.

The GDSN Web UI Home Page

When you have logged in to the Web UI, you can see the GDSN Workflow component, and you can browse the current GDSN subscriptions in the Tree.

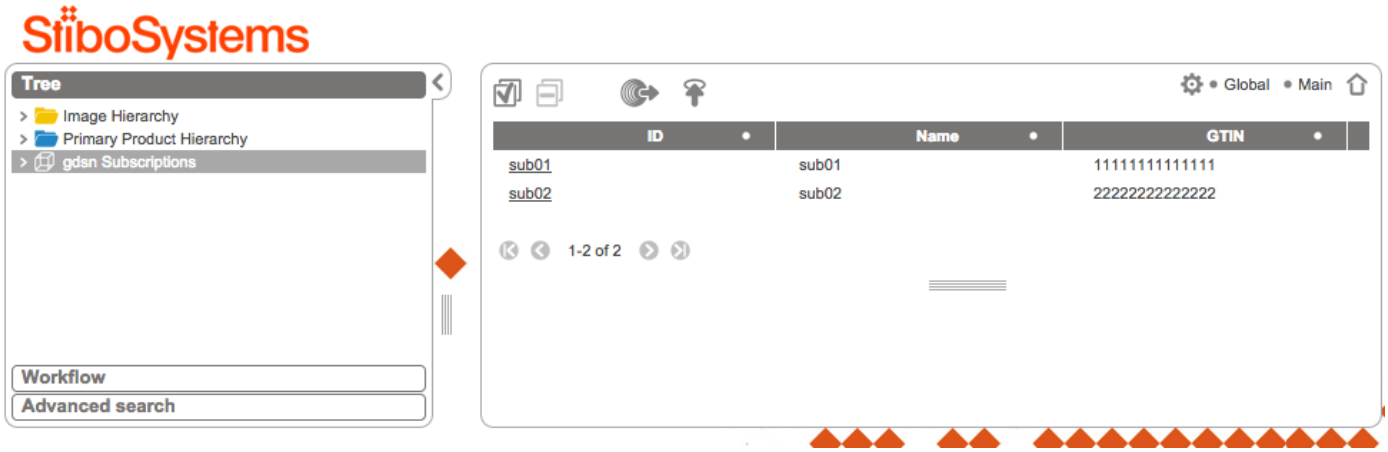


GDSN Subscriptions Overview

- In the **Tree**, click the **GDSN Subscriptions** top node to view a list of all subscriptions.

In the Subscriptions screen, you have the following options:

- Create subscriptions
- Import subscriptions from a Microsoft Excel spreadsheet
- Inspect products received from a GDSN data pool
- Submit unsubscribe requests to a GDSN data pool

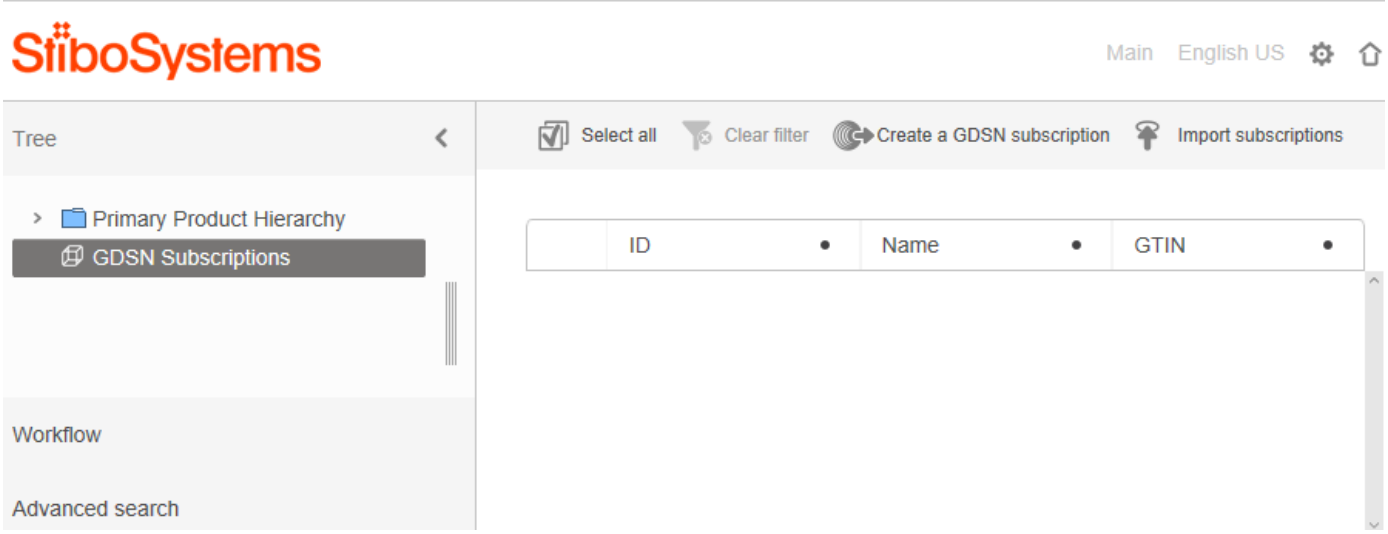

StiboSystems
Tree
Image Hierarchy
Primary Product Hierarchy
gdsn Subscriptions
Workflow
Advanced search
Global
Main
ID
Name
GTIN
sub01
sub01
11111111111111
sub02
sub02
22222222222222
1-2 of 2

Creating and Importing GDSN Subscriptions in the Web UI

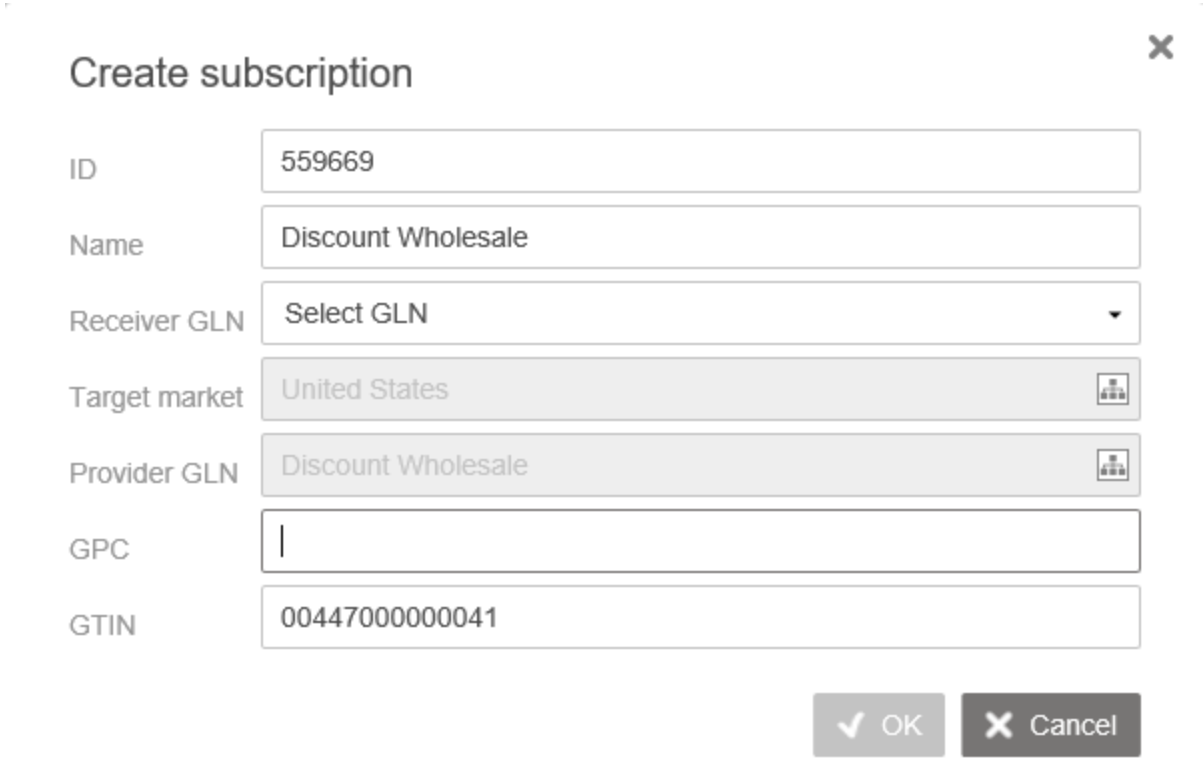
You can create subscriptions in Web UI, or you can import a Microsoft Excel spreadsheet that contains the subscriptions. The import function is useful if you want to create many subscriptions at a time.

Create a GDSN Subscription in Web UI

1. From the Web UI Tree, click on the GDSN **Subscriptions** entity.

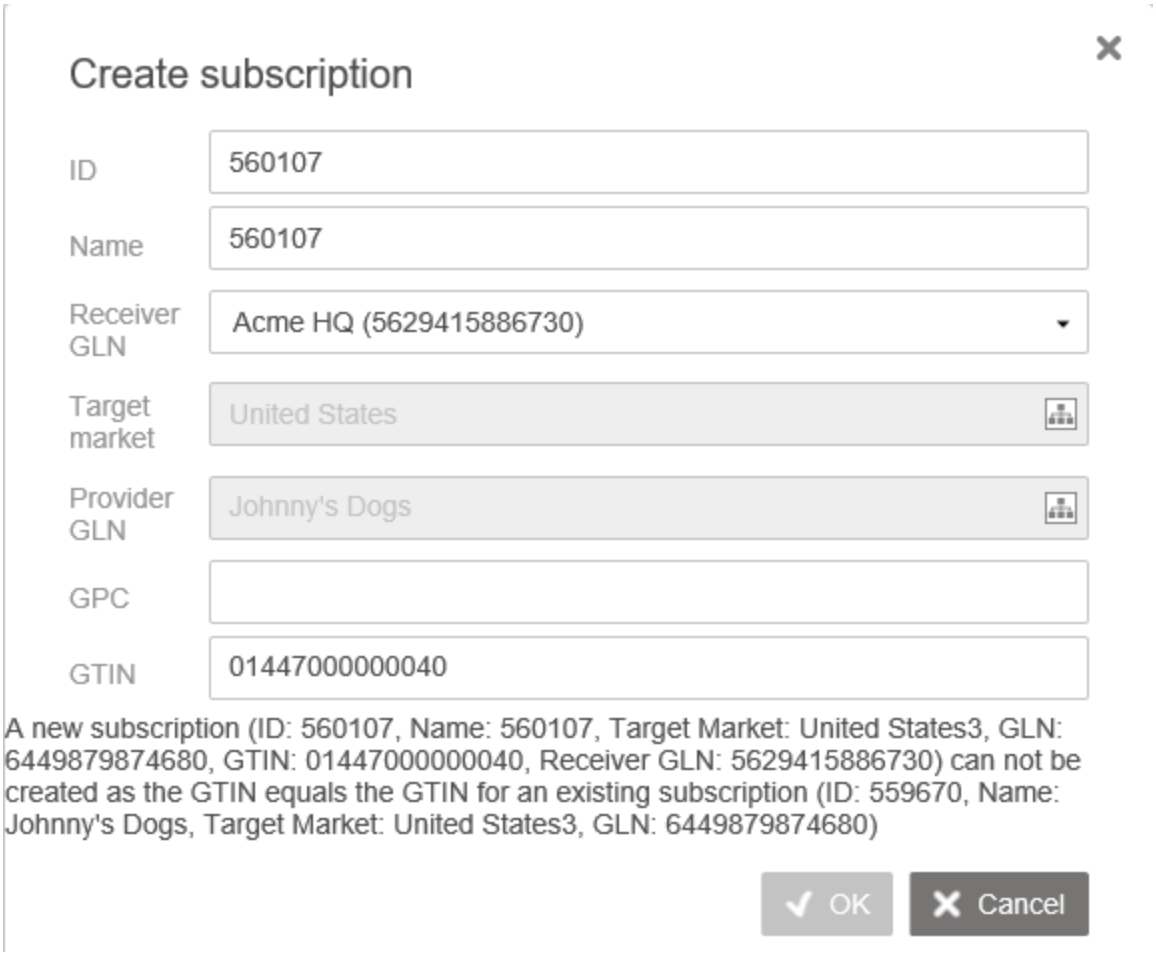


2. Click the GDSN subscription icon and the **Create subscription** dialog appears.



3. Provide the following information:
   - The subscription ID
   - A name for the subscription (optional)
   - The Receiver GLN, (Global Location Number). Select the valid receiver GLN from the dropdown menu for which you want the subscription for. It is assumed that the Receiver GLNs have already been set up in STEP Workbench.
   - The GDSN target market. Select the target market from a list of valid target markets. The target markets must have already been created in STEP Workbench.
   - The GDSN Provider GLN. Select the GLN from a list of valid providers. The providers must have already been created in STEP Workbench.
   - Either the GPC (Global Product Classification) or the GTIN (Global Trade Item Number).

   When you have entered all the required information, the **OK** button becomes available. If the information you provide is not valid, a message is displayed at the bottom of the dialog that describes the problem. The OK button remains unavailable until you have provided the correct information. Below is an example of a error message for a duplicate subscription using the same GLN/GTIN combination.



4. Click **OK**. A CIS (Catalogue Item Subscription) is sent to GDSN, and a message is displayed stating: **Request for subscription submitted to datapool <GTIN>**. When the system receives a CIC (Catalogue Item Confirmation), the subscription is ready to begin receiving products from the data pool, and the subscription is listed in the **Tree** and a subscription object holding information about the subscription is created in STEP.

Import GDSN Subscriptions into the Web UI

If you want to create more GDSN subscriptions at the same time, you can import an Excel spreadsheet that contains all the subscriptions into the Web UI.

Required Columns and Column Headings

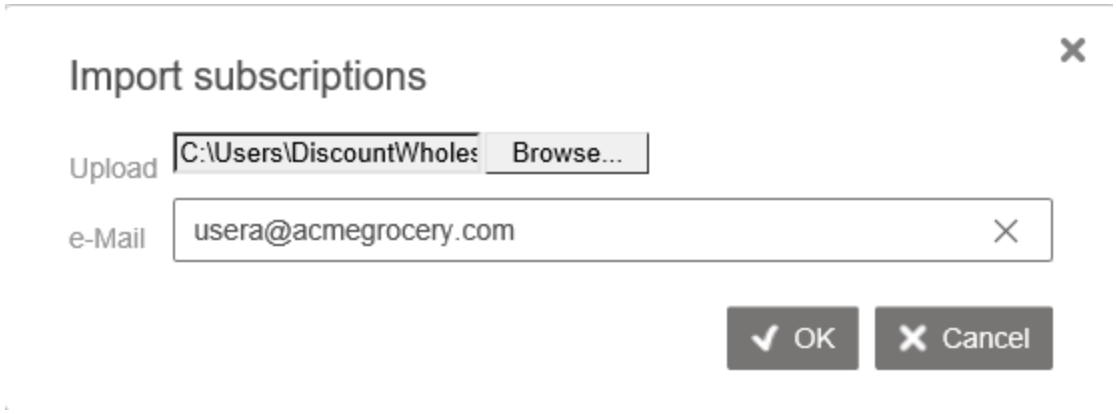
Before you import the Excel sheet verify that it contains the following column headings:

- **ID**: ID of the subscription
- **Name**: Name of the subscription
- **Target Market**: Target market of the subscription
- **Provider GLN**: Provider GLN of the subscription

- **GTIN**: GTIN - GPC of the subscription, this will exclude GPC from the subscription as it's either the GTIN or GPC
- **GPC**: GPC - GTIN of the subscription, this will exclude GTIN from the subscription and it's either the GPC or the GTIN
- **Receiver GLN**: Receiver GLN of the subscription

Import An Excel Sheet with GDSN Subscriptions

1. In the **Web UI Tree**, click **GDSN Receiver Subscriptions**.
2. Click the **Import subscriptions** icon . The **Import subscriptions** dialog appears.



3. In **Upload**, locate and select the Excel file that you want to import.
4. In the **Email** field, enter the email address of the user that you want to send information about the subscription to. The email is sent when the background creation of the subscriptions has completed.
5. Click **OK**. A message is displayed stating: **Import of subscriptions scheduled for datapool gdsn background process: <BGP_XXXX>**.

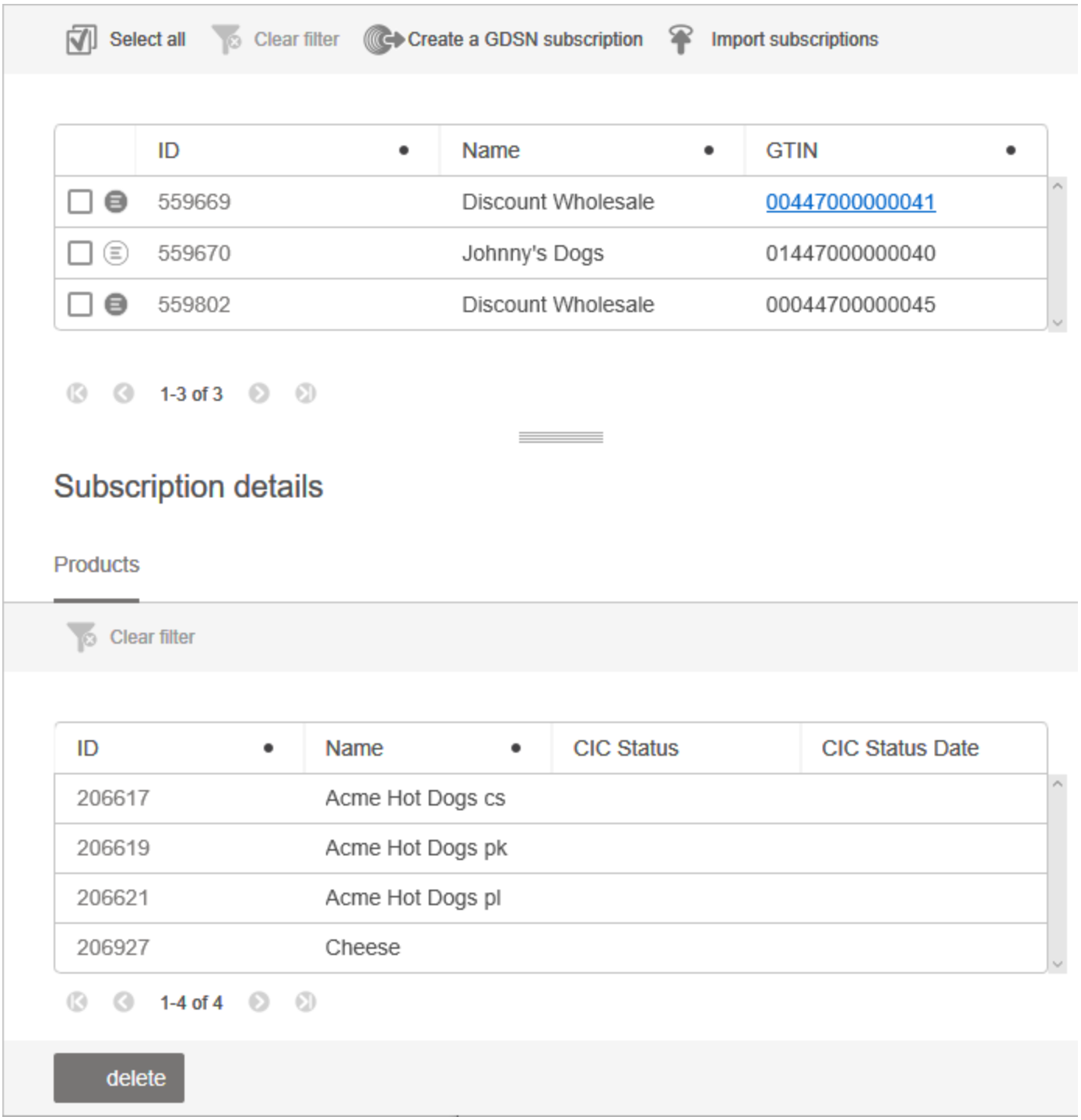
Viewing Products Received From a Subscription

When a subscription has been set up and the subscription response has been received, the subscription begins to receive the relevant products from GDSN. The products are imported into the GDSN root hierarchy, and the attributes which were mapped when the inbound format was configured are made available.

When the products have been imported, you can optionally use auto-classification in STEP Workbench to move the products to other locations.

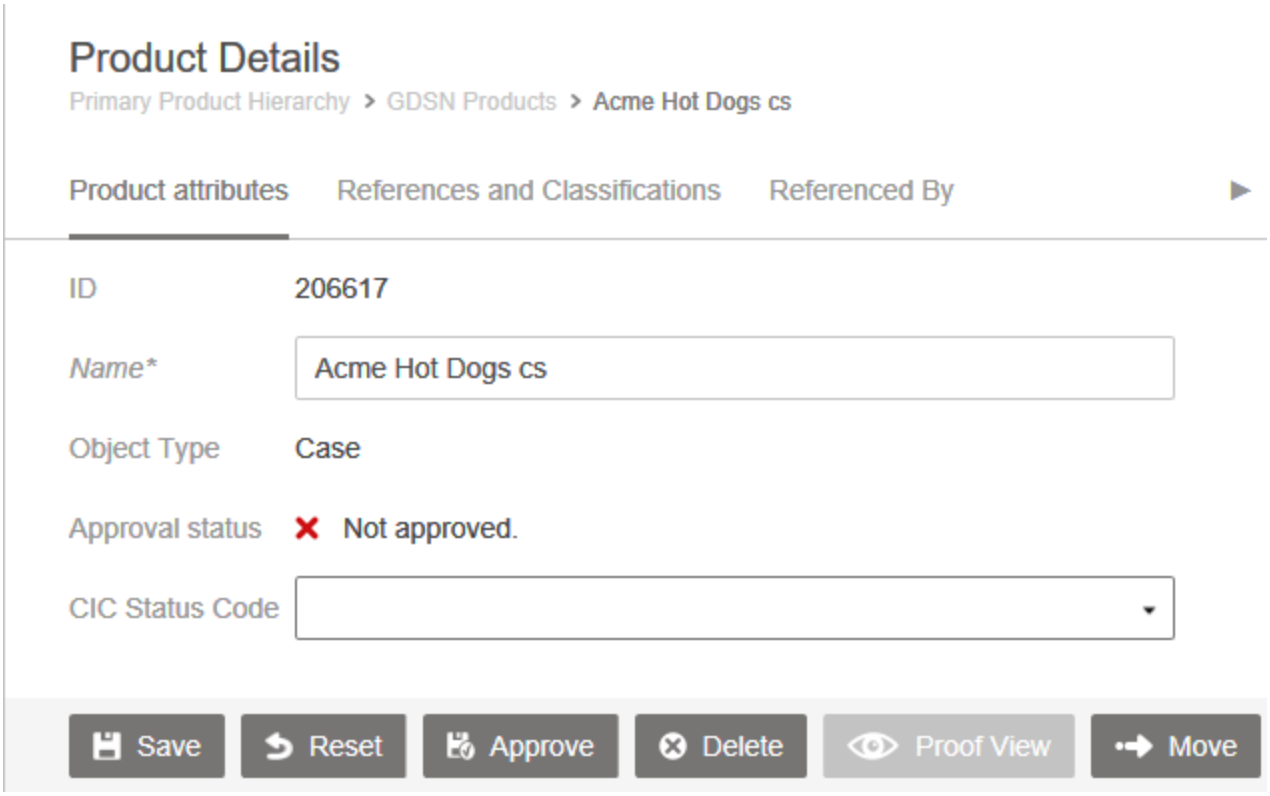
View Details About Imported Subscriptions in Web UI

1. In the **Tree**, click **GDSN Receiver Subscriptions**.
2. In the **Subscriptions** screen, click the relevant subscription. The subscription details such as the imported products are displayed at the bottom of the screen.



3. Click a product link to go to the **Product Details** screen. This screen contains basic information about the product. In the Product Details screen, you can also set a CIC status code and, if required, a CIC status text on the link between the subscription and the product.

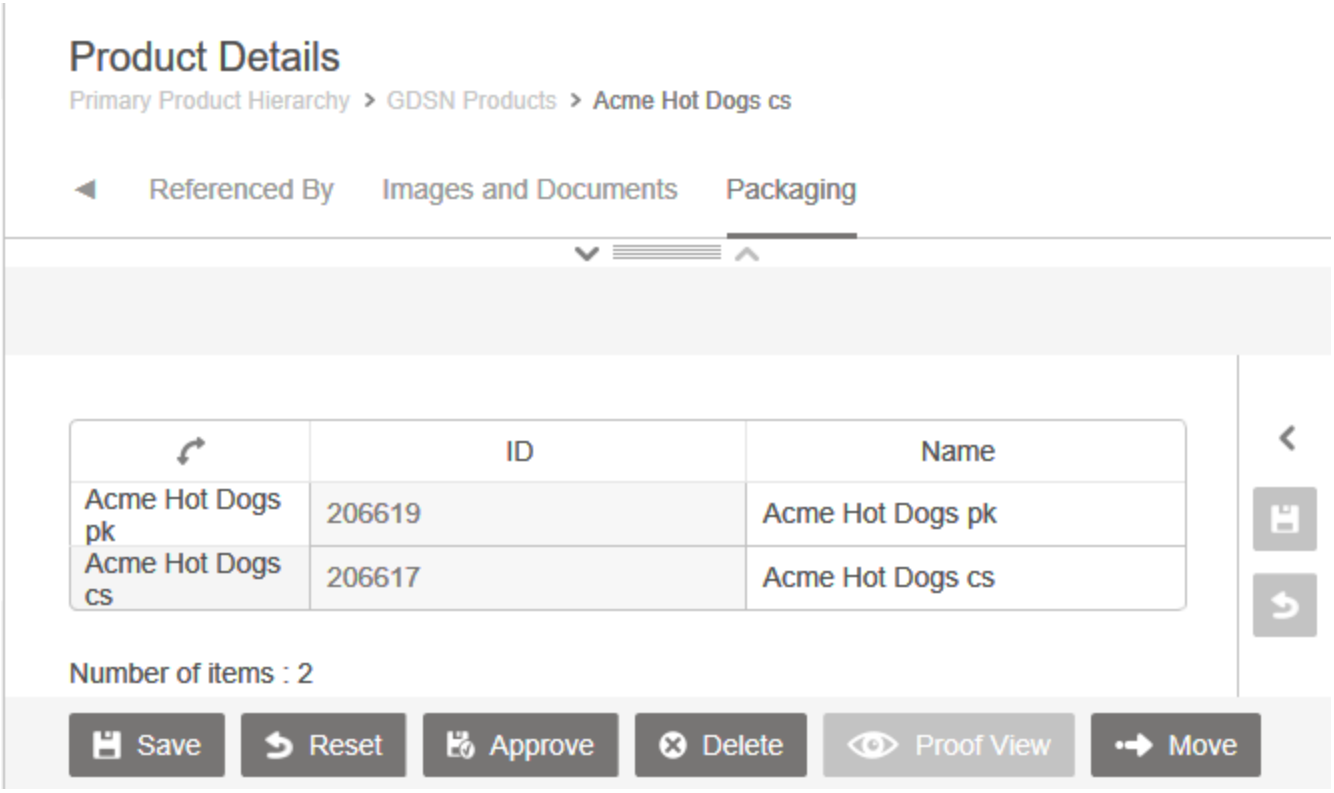
   For more information about the CIC, see Managing the CIC Messages Workflow.



Inspect the Package Hierarchy

- Click the Packaging Hierarchy tab to inspect a particular product in the package hierarchy.
- Click the child products to view the Product Details screen for a specific child product.

In the following image, the package hierarchy of the product named Acme Hog Dogs is displayed. The product has two child products in the package hierarchy.



Errors Related to GDSN Subscriptions

Errors that occur when you try to create a subscription are often related to either the validation of the individual parameters.

The following two conditions must be met for the subscription to succeed:

1. Validation of GTIN and GLN formats must adhere to the limitations specified in the GDSN specification. The STEP attributes for GTIN and GLN adhere to these limitations:
    - The GTIN must be exactly 14 integers and have a valid check digit.
    - The GLN must be exactly 14 integers and have a valid check digit.
    - The target market must exist in STEP as an entity node below **Data Pool** > **Target Markets**.
    - The GPC must be exactly 8 integers.

Note: It is highly recommended the GLN and GTIN Validation Base Type attributes are used. These attributes are pre-configured for the correct numerical length and they validate whether the check digit at the end of the number is correct. These are the default attributes that are used int the **Easy setup of GDSN receiver component model**.

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2. The hierarchy of the subscriptions must not overlap:

- GTINs must not overlap: No two subscriptions for the same GTIN must exist for the same target market.
- GPC must not overlap: No two subscriptions must exist for the same subset of GPC and target market. For a specific Target Market this means that you cannot have a subscription for a GPC that is located below another GPC in the hierarchy if you already have a subscription for the enclosing GPC.
- If you have a subscription by GLN, you cannot have one with a GTIN or GPC for the same GLN.

Unsubscribe from GDSN

1. In **STEP Workbench**, unlink all products that are linked to the subscription.
2. In the **GDSN Web UI Tree**, click **GDSN Receiver Subscriptions**.
3. In the **Subscriptions** screen, click the relevant subscription.
4. Click the **Delete** button in the lower left corner. A message is displayed stating **Unsubscribe message sent to GDSN**.

When the response to the unsubscribe request is received from GDSN, the subscription is marked 'Unsubscribed.'

Once a subscription has been used to receive products, it must remain in the system until all the products that were received from the subscription have been deleted.

Managing the CIC Messages Workflow

When a product hierarchy has been imported into STEP using the CIN import, it is possible to send a Catalog Item Confirmation (CIC) message to the data provider. The purpose is to let the provider know about the status of the received products.

The CIC message status options are: Accepted, Rejected, Review and Synchronized.

- **Accepted**: Notifies the provider that the product has been received.
- **Rejected**: Indicates that the recipient is not interested in the product. All synchronization is terminated.
- **Review**: Sends a request for the revision of the product to the provider because the data cannot be synchronized.
- **Synchronized**: Notifies the provider that the received data has been synchronized with the recipient's system.

Default CIC Workflow

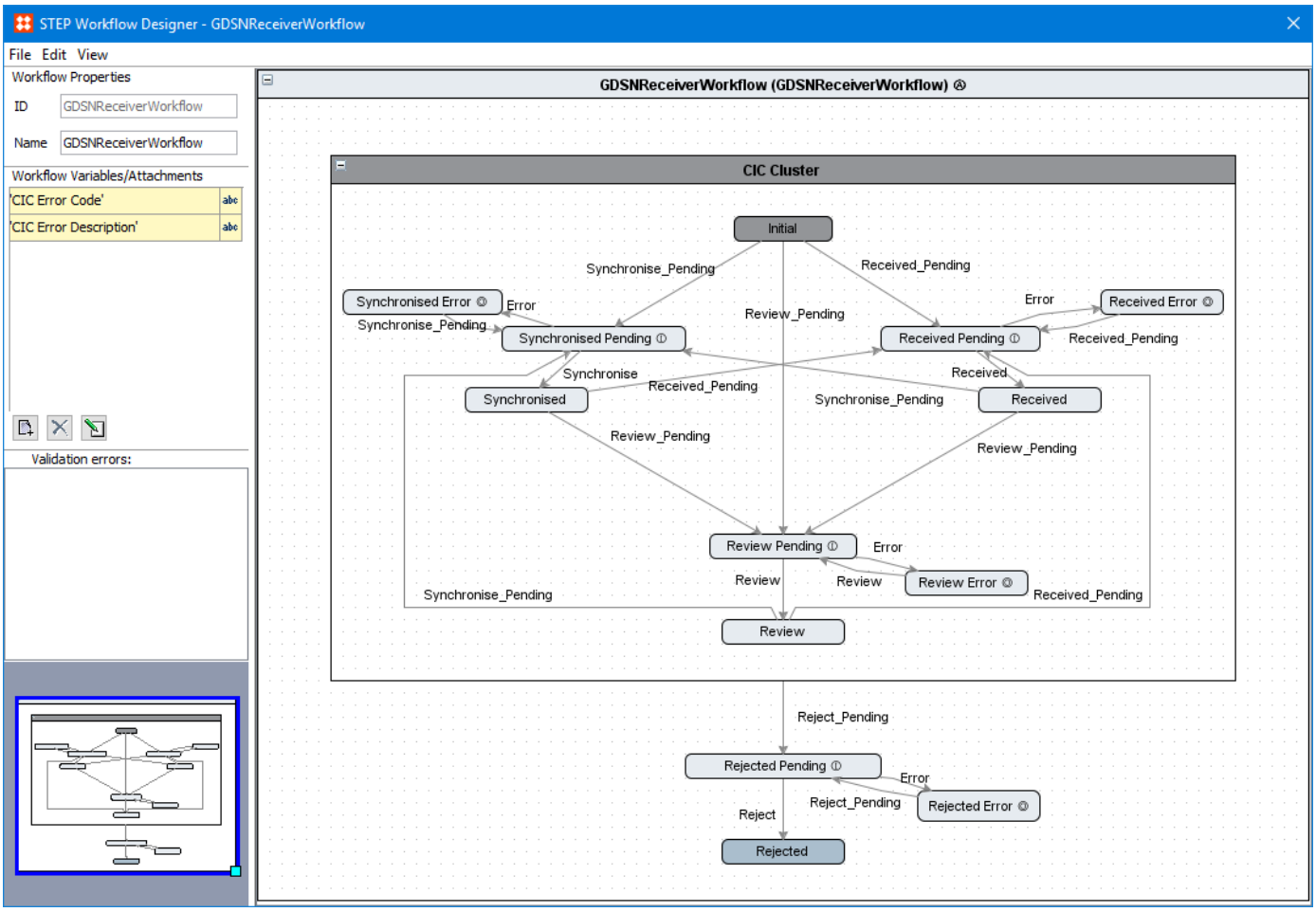
When the CIN import has completed, one or more product hierarchies have been imported. For each of these hierarchies, the Pallet top node is automatically initialized in the workflow called, GDSNReceiverDefaultFlow, and placed in the initial state. This is important because the workflow enables you to send CIC messages about this hierarchy to GDSN.

From the initial state in the workflow, a product can go to the pending states of the four different CIC status items. When a product enters one of the pending states, a CIC message is automatically sent to the provider. This workflow and the associated business rules were created when the administrator ran the 'Easy setup of GDSN receiver data pool.'

You can manage the CIC workflow from the GDSN Web UI.

Default CIC Workflow Diagram

The default GDSN Receiver workflow is set up in STEP Workbench as follows:

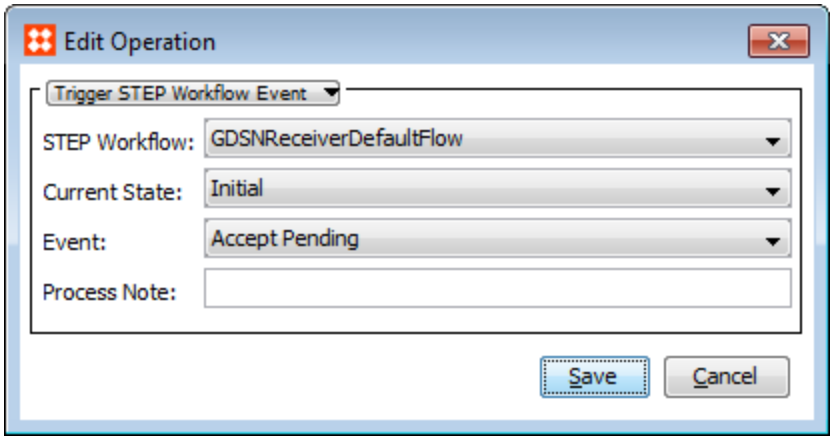

STEP Workflow Designer - GDSNReceiverWorkflow
File Edit View
Workflow Properties
ID GDSNReceiverWorkflow
Name GDSNReceiverWorkflow
Workflow Variables/Attachments
'CIC Error Code'
'CIC Error Description'
Validation errors:
GDSNReceiverWorkflow (GDSNReceiverWorkflow)
CIC Cluster
Initial
Synchronise_Pending
Received_Pending
Synchronised Error
Error
Synchronise_Pending
Synchronised Pending
Review_Pending
Error
Received Error
Received Pending
Received_Pending
Synchronise
Received_Pending
Synchronised
Received
Synchronise_Pending
Review_Pending
Review_Pending
Review Pending
Error
Review
Review
Review Error
Synchronise_Pending
Received_Pending
Review
Reject_Pending
Rejected Pending
Error
Reject_Pending
Rejected Error
Reject
Rejected

Sending a CIC Message Automatically on Import

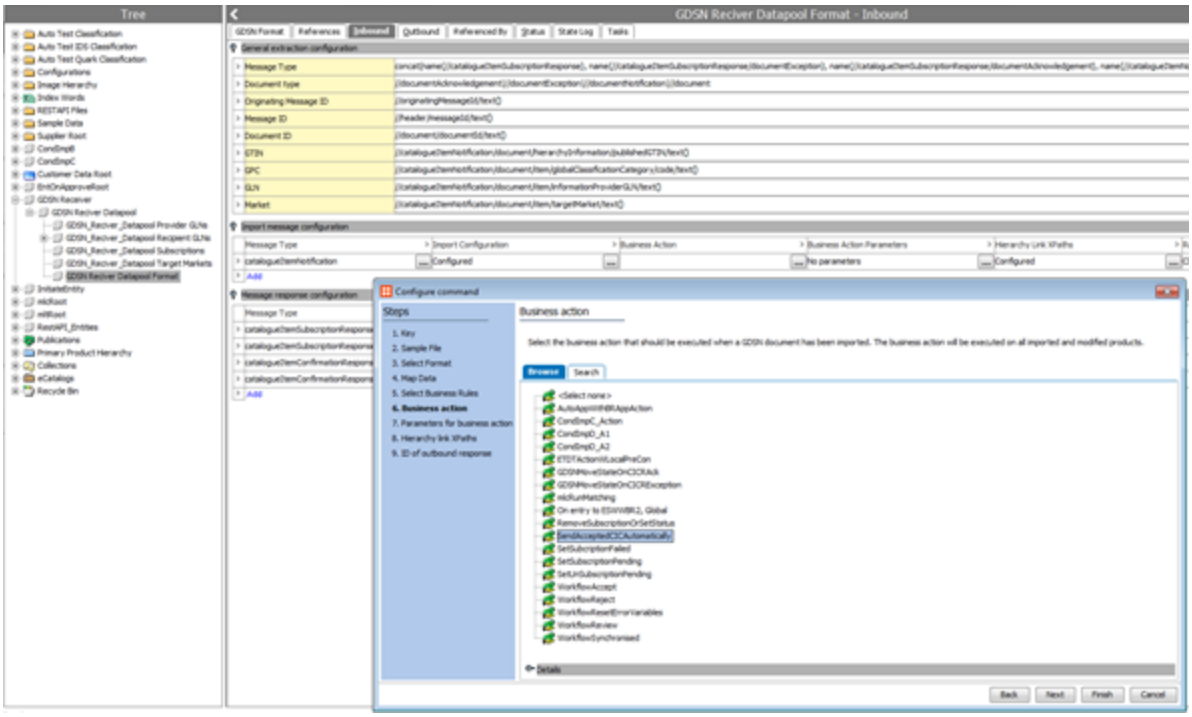
It is possible to send a CIC message automatically when a product is imported, though it is not a part of the standard setup. To do so you create a Trigger STEP Workflow Event business rule that can move a product from one state to another. The following steps outline how to send an Accepted CIC message automatically for all hierarchies when they are imported.

Send a CIC Message Automatically on Import

1. In **STEP Workbench**, in **System Setup**, create a business action.
2. On the **Business Rule** tab, in the lower left corner, click **Edit Business Rule**.
3. Click **Add New Business Action**, and then click the **Edit Operation** icon.
4. In the **Edit Operation** dialog, from the drop-down list, point to **Workflow**, and then select **Trigger Step Workflow Event**.
5. In the **Step Workflow** list select **GDSNReceiverDefaultFlow**.
6. In the **Current State** list, select **Initial**.
7. In the **Event** list, select **Accept Pending**.
8. Add a **Process Note**, and then click **Save**.
9. Make the business action valid for the Pallet object type



10. In the **Tree** locate and expand the relevant data pool, and then select **Data Pool Format**.
11. On the **Inbound** tab, in the **Import message configuration** area, in the CIN row, click the ellipsis button (...).
12. In the **Configure command** wizard go to step 6, and then add the business action you just created.



When you have completed these steps, every top hierarchy node will automatically be moved to the accept_ pending state, and a CIC will be sent for that hierarchy.

For more information, see **Triggering Workflow Events From Imports** in the **Workflow** documentation and **Business Action: Trigger Step Workflow Event** in the **Business Rules** documentation.

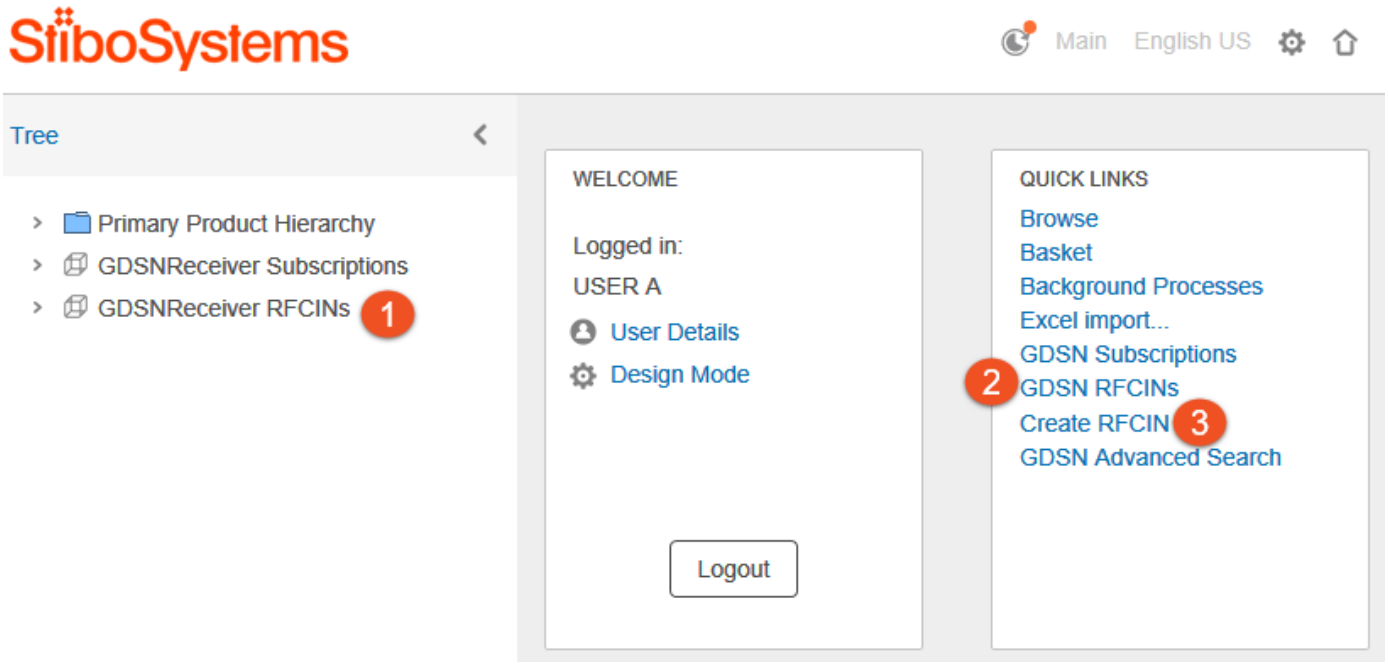
GDSN Receiver Support for RFCIN Messages

There are occasions when a data receiver needs to get a new data load for specific items, usually as a result of some catastrophic failure of a system where the item information must be rebuilt. The GDSN standard message type for this request is the Request for Catalog Item Information, (RFCIN). This section explains how to send RFCINs from the STEP platform.

Navigating the RFCIN Actions in the Web UI

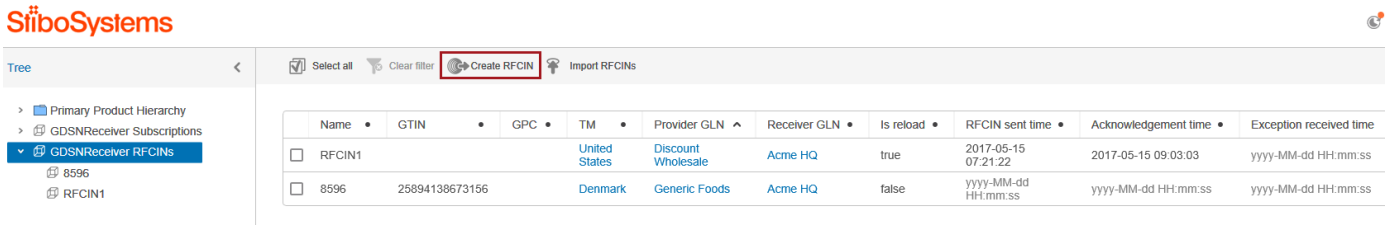
On the GDSN Receiver Homepage, there are three RFCIN links.

1. The GDSN RFCIN Group root node for the GDSN RFCIN object types.
2. The GDSN RFCINs link. This also will take you to the GDSN RFCIN Group root node for the GDSN RFCIN object types.
3. The Create RFCIN link. This link allows a user to create an RFCIN directly from the Homepage.

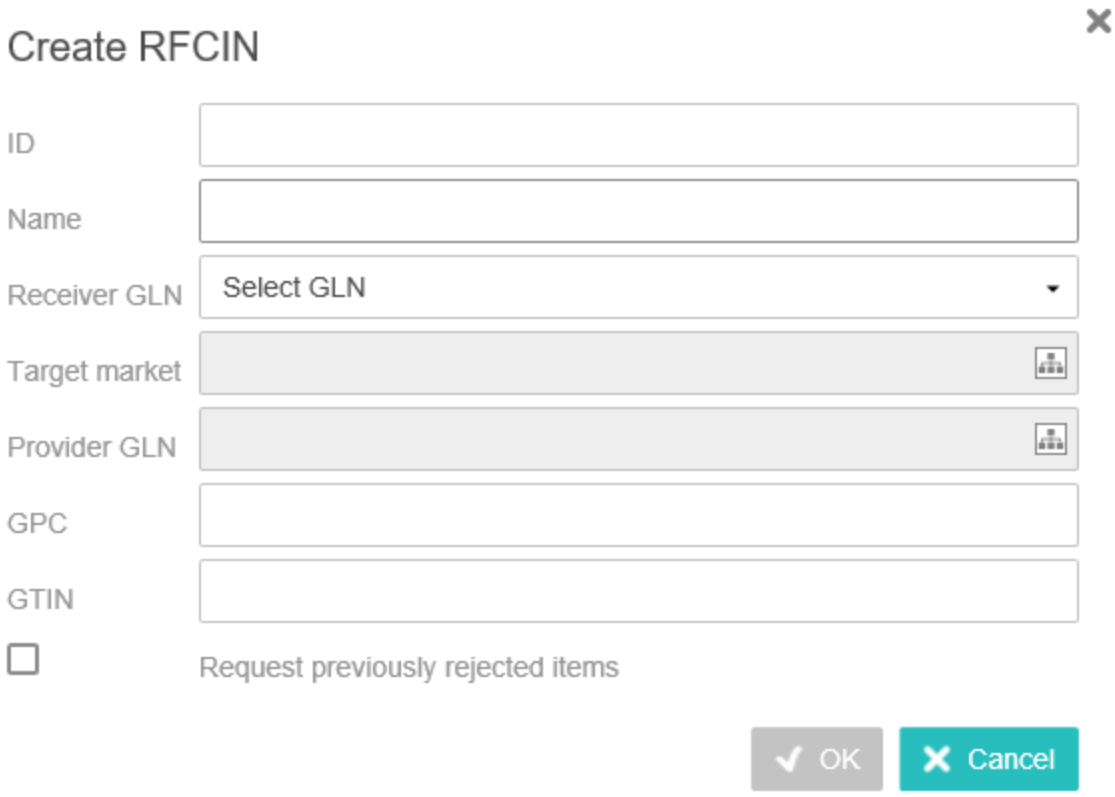


Creating an RFCIN

RFCINs can be created by either clicking the 'Create RFCIN' link in the GDSN Receiver Homepage or from the GDSN Receiver Group root node by clicking on the 'Create RFCIN' action button as shown in the image below.

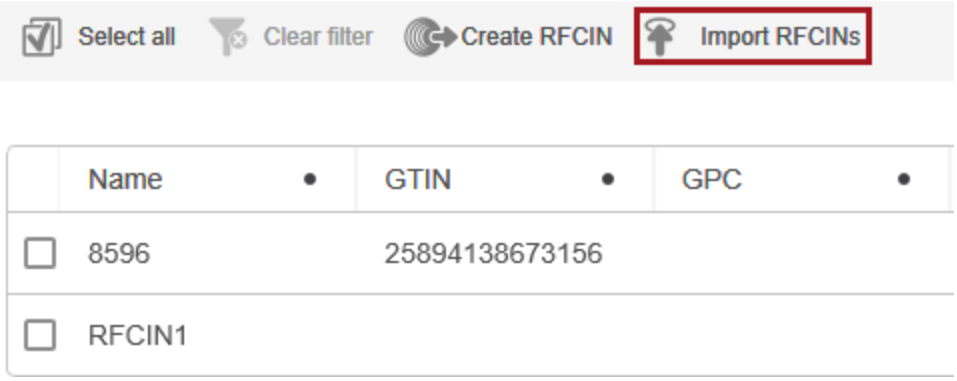


Regardless of how it is created, the same dialog box appears as shown in the image below. STEP supports sending RFCIN criteria based on GLN and Target Market, and optionally the GTIN or GPC code. Users can indicate to the Data Source the type of notification they want to receive back. For instance, they can request all synchronized items, or they can request all synchronized and previously rejected items via the 'Request previously rejected items' option indicator in the Create RFCIN request dialog.

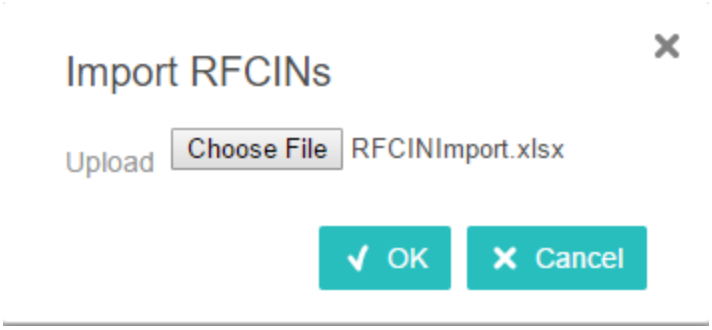


Importing RFCINs

Users can also import RFCINs via an Excel spreadsheet using the 'Import RFCIN' action button as shown in the image below.



Clicking on the Import RFCINs action button brings up the following Dialog. Click 'Choose File', select the RFCIN file that you need, and choose OK. A background process will run and send the RFCIN(s) to the Outbound Hotfolder.



Formatting the Excel Spreadsheet

The Excel spreadsheet should be formatted in the following way and in the following order across columns.

- **ID:** The ID of the RFCIN.
- **Name:** The name of the RFCIN.
- **TM:** The target market for the RFCIN. This is not case sensitive.
- **Provider GLN:** The provider GLN from whom you are requesting the RFCIN.
- **GTIN:** The GTIN or GTINs for which you are requesting the RFCIN. If you are requesting specific GTIN(s), the GPC cannot be used.
- **GPC:** The GPC or GPCs for which you are requesting the RFCIN. If you are requesting GPC(s), the GTINs cannot be used.
- **Receiver GLN:** The Receiver GLN for which the RFCIN is needed.
- **Is Reload:** This is used to request previously rejected items. Set 'TRUE' if requesting previously rejected items. Set 'FALSE' if not requesting previously rejected Items.

Note: The actual names in the top row are not read on import. The first row is skipped on import.

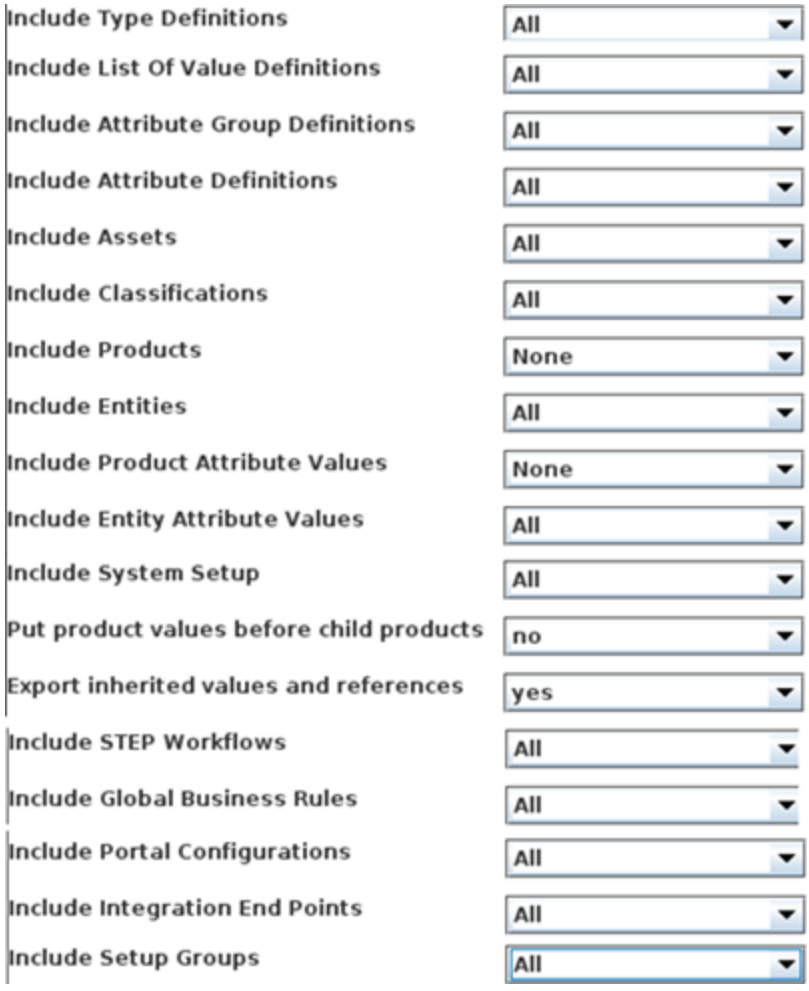
	A	B	C	D	E	F	G	H
1	ID	Name	TM	Provider GLN	GTIN	GPC	Receiver GLN	Is Reload
2	RFCINImport1	RFCINImport1	fr	6449879874680			1110959763341	TRUE
3	RFCINImport2	RFCINImport2	de	6683599124858	58467291734866		5629415886730	TRUE
4	RFCINImport3	RFCINImport3	us	9334225677343		54000	5864782936767	TRUE

Moving a GDSN Setup to a New System

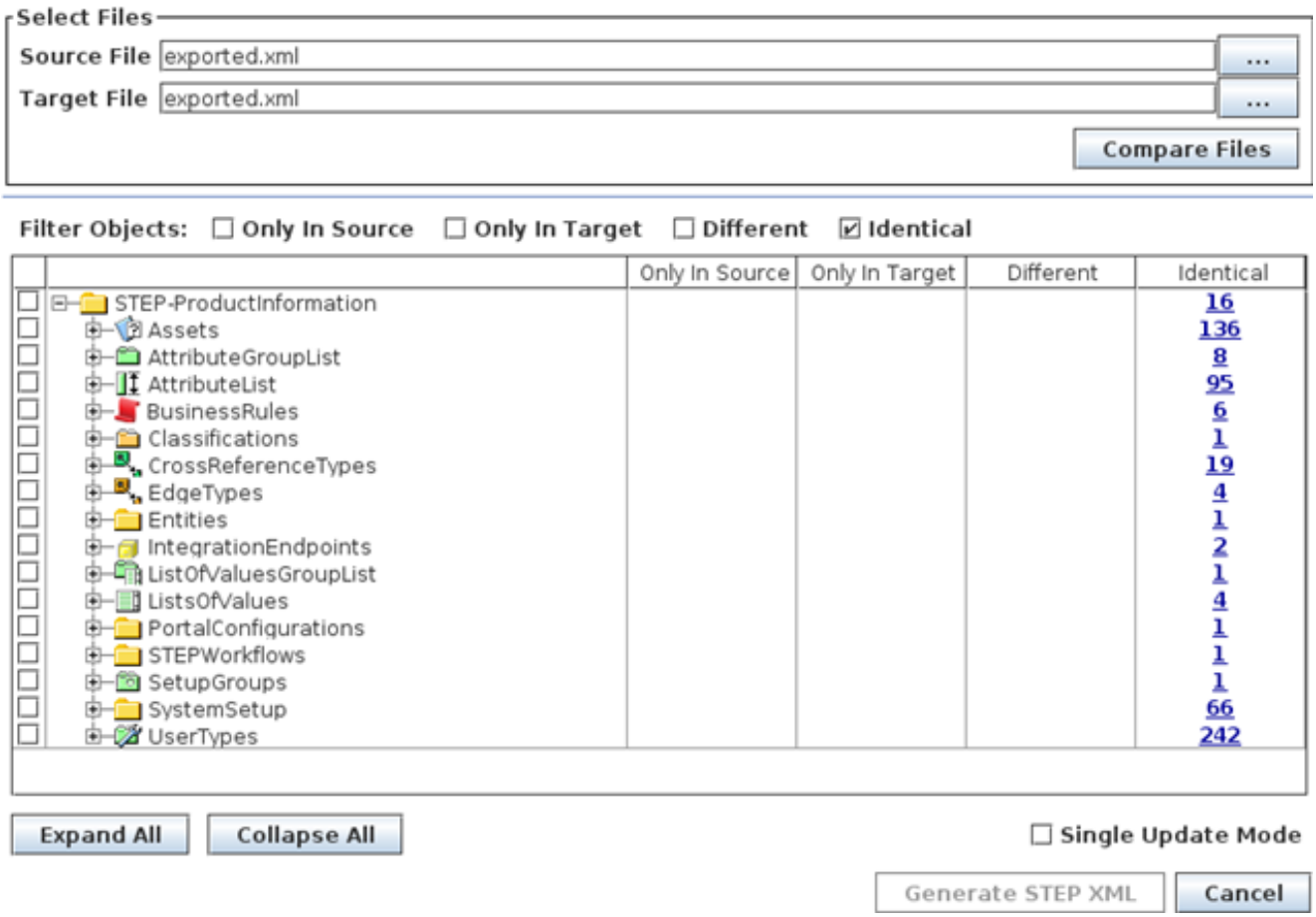
For both **GDSN Receiver** and **GDSN Provider**, the following describes how to move a system that has been set up with the easy setup wizard. Although this is the DTAP-recommended approach (Development-Test-Acceptance-Production), the scenario should be modified to meet your company requirements.

To move a GDSN setup from one system to another, use the Export Manager's STEPXML format and the Export Comparison tool. For information about exporting data and assets, see the **Creating a Data Export** topic or the **Exporting Assets** topic.

1. In the **Tree**, locate the XSD asset that has been uploaded for GDSN.
2. Right-click the XSD asset and click **Export Images & Documents**.
3. In the Tree, right-click the relevant data pool and click **Export data below** to export the remaining system setup. The export must not include the component model. This image shows the relevant STEPXML options.



4. From the **File** menu, point to **Export** and click **Compare System Setup Exports**. Remove any exported elements that should not be imported into the new system.



5. For **Source File** and **Target File**, locate the XML file exported and check the Filter Objects **Identical** option.
6. Select the elements needed for the import and click **Generate STEP XML**. A new export file is created that can be imported.
7. Import the export file into the new system.

Note: For **GDSN Receiver** solutions only, when the file is imported, three errors are generated in the BGP Execution Report since references point to objects that do not yet exist. The Data Pool Entity references the product folder 'GDSN IMPORT ROOT' and the assets 'GDSN Receiver DatapoolCINSample' and 'GDSN Receiver DatapoolXSD.' This is expected and does not affect the system import.

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8. Import the XSD asset on top of the one that is already in the system to get the content. If the object type of the XSD asset is Zip file, change it to the correct file type as specified in the component model.
9. Manually set the references on the **Data Pool Format Entity** references tab.
10. Create a Import Root product folder on the target system.
11. Set the reference to the Import Root product folder on the **Data Pool Entity** references tab.

12. Locate the component model, and specify the correct object types, attributes and references.