Sterling e-Invoicing

IBM

Services and Adapters

14, for Sterling B2B Integrator 5.2.2

Sterling e-Invoicing

Services and Adapters

1.4, for Sterling B2B Integrator 5.2.2

IBM

Contents

Services and Adapters

Several services and adapters are available for Sterling e-Invoicing using Sterling B2B Integrator.

eInvoice Agreement Lookup Service

The eInvoice Agreement Lookup service is used to obtain agreement information when processing e-Invoices.

The following table provides an overview of the eInvoice Agreement Lookup service:

System Name
eInvoiceAgreementLookupService

Graphical Process Modeler (GPM) categories)
All Services and eInvoicing

Description
The eInvoice Agreement Lookup service is used to find an e-Invoice agreement.

Business usage
This service is used in processing e-Invoices to obtain agreement information.

Usage example
This service is only called by the e-Invoice process workflow. The first step in the e-Invoice process workflow is to call this service to look up the agreement information and populate ProcessData so that the appropriate workflows and services are invoked properly.

Preconfigured?
eInvoiceAgreementLookupService

Requires third party files?
No

Platform availability
All supported Sterling B2B Integrator platforms.

Related services
- eInvoice Archive service
- eInvoice Archive Status Update service
- eInvoice Event service
- eInvoice Time Stamping Request service

Sterling B2B Integrator requirements
At least two identities must either already exist or be created (one for supplier and one for buyer). Additionally, at least one agreement must exist or be created using the supplier/buyer identities.

Initiates business processes?
This service does not initiate a business process directly but it determines

which subsequent workflows are run as part of the e-Invoice processing. This service is not designed to be used outside the e-Invoice process workflow.

Invocation
Should only be invoked by the e-Invoice process.

Business process context considerations
ProcessData MUST contain either SupplierVAT and BuyerVAT or SupplierLookupID and BuyerLookupID. An optional MessageType can also be specified, if needed.

Returned status values
Success = Agreement found

Error = Advanced status and status report that describes the error that occurred as follows:
- MissingParms – no lookup parameters found (VATs or LookupIDs)
- NoAgreement – no agreement found for given lookup values
- MultipleAgreements – more than one agreement found for given values
- MissingVAT – the specified VAT was null
- InvalidVAT – the specified VAT is missing country or region code

Note: This does not validate the county or region code.
- LicenseError – service not licensed for use
- NoPrimaryDocument – error occurs if the PrimaryDocument does not exist
- NoPermission – error occurs if the user does not have permission to access VAT
- NoSupplierId - error occurs when no enabled supplier identity is found for the lookup criteria
- NoBuyerId - error occurs when no enabled buyer identity is found for the lookup criteria
- NoConnection - error occurs if no database connection was obtained

Restrictions
None

Persistence level
Does not set the persistence level, therefore the persistence level defaults to the workflow.

Testing considerations
To test this service, invoke it from a business process (see "Business Process Example" on page 5). Log (error) information for this service is located at:

Operations > System > Logs > eInvoicing

How the eInvoice Agreement Lookup Service Works

The eInvoice Agreement Lookup service is used in processing e-Invoices to obtain agreement information.

This service is only called by the e-Invoice process workflow. The first step in the e-Invoice process workflow is to call this service to look up the agreement information and populate ProcessData so that the appropriate workflows and services are invoked properly.

Note: The eInvoice Agreement Lookup service does not return agreements between identities that are disabled.

Implementing the eInvoice Agreement Lookup Service

To implement the eInvoice Agreement Lookup service, drop this service into a workflow.

Configure the eInvoice Agreement Lookup Service

1. Select **Deployment** > **Services** > **Configuration**.
2. Search for eInvoice Agreement Lookup service or select it from the list and click **Go!**.
3. Click **Edit**.
4. On the Confirm page, verify that the **Enable Service for Business Processes** check box is selected.
5. Create a business process and specify field settings in the business process (see the description of parameters in "Parameters Passed from Business Process to the Service").

Parameters Passed from Business Process to the Service

The following table contains the parameters passed from the business process to the eInvoice Agreement Lookup service:

Parameter
>   **Description**

SupplierVAT
>   The supplier VAT identifier. Required if lookup IDs are not used to find the agreement (if this value was already specified when performing the agreement lookup; if this value does not already exist in ProcessData then this service must populate it).

BuyerVAT
>   The buyer VAT identifier. Required if lookup IDs are not used to find the agreement (if this value was already specified when performing the agreement lookup; if this value does not already exist in ProcessData then this service must populate it).

SupplierLookupID
>   The supplier lookup identifier code. Required if VAT IDs are not used to find the agreement (if this value was already specified when performing the agreement lookup; if this value does not already exist in ProcessData then this service must populate it).

BuyerLookupID
>   The buyer lookup identifier code. Required if VAT IDs are not used to find the agreement (if this value was already specified when performing the agreement lookup; if this value does not already exist in ProcessData then this service must populate it).

MessageType
>   The message type. Optional.

ErrorWhenNo
AgreementFound

> Whether to set the workflow status to Success or Failed if an agreement is not found. Valid values are: True (default - set status to Failed) and False (set status to Success). Optional.

PostProcessWhenNo
AgreementFound

> Specifies a workflow (business process) to run when ErrorWhenNoAgreementFound is set to False and no agreement is found. Optional.

Parameters Passed from the Service to the Business Process

The following table contains the parameters passed from the eInvoice Agreement Lookup service to the business process:

Parameter
> **Description**

DocumentFormat

> The document format. Valid values are: Generic, PDF, and XML. Required.

DigitalSignatureFormat

> The format of the digital signature used. Valid values are: PKCS7, SMIME, XMLSIG, XMLCON, and PDF. Required.
>
> **Note:** Use the XMLCON format if you need to produce XML signatures that support a double-signature (for example, signatures for two countries or regions). We recommend you use XMLCON format instead of XMLSIG. The XMLCON signature format is not valid with PDF or GENERIC document formats; it is only valid with XML-formatted documents.

TestProdIndicator

> Indicates whether the e-Invoice process is test or production. Valid values are: 1 (test) and 2 (production). Required.

TranslationMap

> The map used to translate the invoice to the canonical format. Required.

ReceiverTag

> The buyer country or region code. Required.

SenderTag

> The supplier country or region code. Required.

SupplierArchiveType

> The type of supplier-side archive. Valid values are: INTERNAL, EXTERNAL, and CUSTOM. Required if performing supplier processing.

BuyerArchiveType

> The type of buyer-side archive. Valid values are: INTERNAL, EXTERNAL, and CUSTOM. Required if performing buyer processing.

SupplierArchiveProcess

> The archive process to run if the SupplierArchiveType is EXTERNAL or CUSTOM. Required if the SupplierArchiveType is EXTERNAL or CUSTOM.

BuyerArchiveProcess

> The archive process to run if the BuyerArchiveType is EXTERNAL or CUSTOM. Required if the BuyerArchiveType is EXTERNAL or CUSTOM.

SupplierEmail
> The e-mail address for the supplier (used to notify if errors occur). This field is populated only if the **NotifySupplier** flag is set to **true** and the Error Notification E-mail is specified in the identity.

BuyerEmail
> The e-mail address for the buyer (used to notify if errors occur). This field is populated only if the **NotifyBuyer** flag is set to **true** and the Error Notification E-mail is specified in the identity.

NotifySupplier
> Whether to notify the supplier when errors occur. Valid values are: true (notify) and false (do not notify). Required.

NotifyBuyer
> Whether to notify the buyer when errors occur. Valid values are: true (notify) and false (do not notify). Required.

Buyer_Archive_Doc_
GUID Preassigned Globally Unique Identifier. Required.

Buyer_Details_Doc_
GUID Preassigned Globally Unique Identifier. Required.

Supplier_Archive_Doc_
GUID Preassigned Globally Unique Identifier. Required.

Supplier_Details_Doc_
GUID Preassigned Globally Unique Identifier. Required.

SupplierProcessName
> The supplier business process to run. Required if the supplier is processing invoices.

BuyerProcessName
> The buyer business process to run. Required if the buyer is processing invoices.

PostProcessName
> This is the business process to run after the e-Invoicing business process is executed. Required if specified in the agreement.
>
> **Note:** For example, if prior to implementing the e-Invoicing Compliance Solution, you would create invoices using one of the enveloping services (X12 Enveloping service, EDIFACT Enveloping service, Generic Envelope service, and so forth) and the invoice envelope definition would contain a business process that would run after the enveloping was finished (to send the invoices to your trading partner). That business process is considered to be your "post-process." For e-Invoicing, the post-process is replaced by the e-Invoicing process. This parameter allows you to specify that the post-process will be automatically run after the e-Invoicing process.

Business Process Example

The following is an example of how the eInvoice Agreement Lookup service is called. However, this service should only be called from the included e-Invoice process provided as part of Sterling e-Invoicing.

```
<process name="example">
  <sequence>
    <operation>
      <participant name="eInvoiceAgreementLookupService"/>
```

```
          <output message="toService">
            <assign to="." from="*"/>
          </output>
          <input message="fromService">
            <assign to="." from="*"/>
          </input>
        </operation>
      </sequence>
    </process>
```

eInvoice Duplicate Check Service

The eInvoice Duplicate Check service checks the e-Invoicing internal archive database for duplicate invoices. When checking the duplicate invoices, the Transaction Register is checked first for the duplicates, and then the archive database is checked.

The following table provides an overview of the eInvoice Duplicate Check service:

System Name
> eInvoiceDuplicateCheck

Graphical Process Modeler (GPM) categories)
> All Services and eInvoicing

Description
> The eInvoice Duplicate Check service checks the Transaction Register for duplicate invoices, and then checks the internal archive database.

Business usage
> This service is used by the supplier and buyer processes to determine if an invoice that is being processed was already added to the database.

Usage example
> This service is called automatically by the supplier and buyer processes. It may also be called by business processes you create, if you want to check whether an invoice exists in the internal archive database.

Preconfigured?
> eInvoiceDuplicateCheckService

Requires third party files?
> No

Platform availability
> All supported Sterling B2B Integrator platforms.

Related services
> No

Sterling B2B Integrator requirements
> You must execute the e-Invoice archive install script before using this service. This script creates the necessary configuration to connect to the archive database and check in the fact models that are required by the Mapped Extraction service. During the install script execution, you must provide all information about the database that will be used as the e-Invoice archive database.

Initiates business processes?
> No

Invocation
> This service is invoked to run during normal processing prior to adding an invoice to the archive.

Business process context considerations
> None

Returned status values
> Success = No duplicate invoices were found.
>
> Error = Duplicate invoices were found.

Restrictions
> None

Persistence level
> System default

Testing considerations
> Create a business process to call the service and fill in all the parameters. See "Business Process Example" on page 10 for a sample business process.
>
> Error (log) information for this service is located at:
>
> Operations > System > Logs > eInvoicing

How the eInvoice Duplicate Check Service Works

The eInvoice Duplicate Check service checks the Sterling e-Invoicing internal Integrated Archive database for duplicate invoices. This service is used by the supplier and buyer processes to determine if an invoice that is being processed was already added to the database, and is called automatically by the supplier and buyer processes. It may also be called by business processes you create, if you want to check whether an invoice exists in the internal archive database.

This service adds an entry to Transaction Register when it runs. This entry is checked by subsequent runs of the eInvoice Duplicate Check service before it looks at the database. The Transaction Register is always checked, regardless of the type of archive used. If the archive used is the internal Integrated Archive, it also checks the database if there is no duplicate found in the Transaction Register.

After the Duplicate Check is run, if you need to restart the Supplier process or Buyer process, the duplicate check will fail because it has already stored the primary key information in the Transaction Register. If this occurs you must clear that information from the Transaction Register, before restarting the Supplier or Buyer process.

See "Clearing Information from the Transaction Register" on page 9 for more information.

You can also change how long the invoice primary key information stays in the Transaction Register by setting the **mapper.maximumTransactionRegisterAge** property (from the **translator.properties** file) to the number of days the information should be retained. It should be noted that this will change the retention period for all Transaction Register entries, not just Sterling e-Invoicing entries.

See "Setting the Number of Days Information is Retained in the Transaction Register" on page 10 for more information on setting this property.

Implementing the eInvoice Duplicate Check Service

To implement the eInvoice Duplicate Check service, execute the e-Invoice archive install script before using this service. This script creates the necessary configuration to connect to the archive database and check in the fact models that are required by the Mapped Extraction service. During the install script execution, you must provide all information about the database that will be used as the e-Invoice archive database.

Configure the eInvoice Duplicate Check Service

1. Select **Deployment** > **Services** > **Configuration**.
2. Search for eInvoice Duplicate Check service or select it from the list and click **Go!**.
3. Click **Edit**.
4. Specify field settings in the GPM (see the description of parameters "Setting Up the Service in the GPM").
5. Specify field settings in the business process (see the description of parameters in the section "Parameters Passed From Business Process to Service").
6. On the Confirm page, verify that the **Enable Service for Business Processes** check box is selected.

Setting Up the Service in the GPM

Use the field definitions in the following table to set up the service configuration in the GPM, if necessary:

Parameter
> **Description**

ArchiveRole
> Specifies which participant created the invoice. Optional.

BuyerVatID
> The buyer's transaction tax code. Optional.

InvoiceDate
> The date the invoice was sent. Optional.

InvoiceNumber
> The number of the invoice for which you want to search. Optional.

SupplierVatID
> The supplier's transaction tax code. Optional.

Parameters Passed From Business Process to Service

The following table contains the parameters passed from the business process to the eInvoice Duplicate Check service:

Parameter
> **Description**

InvoiceNumber
> The number of the invoice for which you want to search. Optional.

InvoiceDate
> The date the invoice was sent. Optional.

SupplierVatID
>The supplier's transaction tax code. Optional.

BuyerVatID
>The buyer's transaction tax code. Optional.

ArchiveRole
>Specifies which participant created the invoice. Optional.

Invoice Identifier
>A descriptor to uniquely identify the invoice. Optional.
>
>**Note:** You define the Invoice Identifier in the map. This allows you to decide which fields are used as the criteria to uniquely identify the invoice, and allows you to change the key based upon the particular partner, business division, and so forth. Typically, this field is a concatenation of fields such as Supplier ID, Buyer ID (or possibly VAT ID), and invoice number. If two invoices have the same Invoice Identifier , they are considered duplicates of each other. The first invoice that is archived is considered a good invoice and any invoice with the same Invoice Identifier and Role that is archived after that is considered to be a duplicate. If this field is not provided in canonical invoice, the combination of the following fields from the canonical invoice are used to uniquely identify the invoice: INVOICE_NUMBER, INVOICE_DATE, SUPPLIER_VAT_ID, BUYER_VAT_ID, and ROLE.

Clearing Information from the Transaction Register

After the Duplicate Check is run, if you need to restart the Supplier process or Buyer process, the duplicate check will fail because it has already stored the primary key information in the Transaction Register. If this occurs you must clear that information from the Transaction Register, before restarting the Supplier or Buyer process.

The Transaction Register fields correspond to the following primary key information:

Transaction Register Field
>**Primary Key Information**

FIELD1
>ArchiveRole
>
>**Note:** When INVOICE_IDENTIFIER is in the Canonical invoice, this entry is logged in the transaction register as INVOICE_IDENTIFIER.

FIELD2
>InvoiceNumber
>
>**Note:** When INVOICE_IDENTIFIER is in the Canonical invoice, this entry is logged in the transaction register as ArchiveRole.

FIELD3
>SupplierVatID

FIELD4
>BuyerVatID

FIELD5
>InvoiceDate

Complete the following steps to clear the Transaction Register:

1. Select **Trading Partner** > **Document Envelopes** > **Transaction Register**.
2. In the Search area, type a value in Field 1 through Field 6 to narrow your search and click **Go!**
3. Delete the necessary records by clicking **delete** next to each duplicate record.

Setting the Number of Days Information is Retained in the Transaction Register

IBM® Sterling B2B Integrator supports the use of a customer override (edit) property file to override default property settings in the property files. The customer override property file is not changed during installation of the IBM Sterling B2B Integrator or IBM Sterling B2B Integrator upgrades or patches. To prevent having your customized settings overwritten, use overrides whenever possible rather than editing the actual property file.

If you have made changes to the property file, either directly or by editing the associated .in files in a previous IBM Sterling B2B Integrator version, your changes may be overwritten when a patch is applied. To prevent this, create a customer_overrides.properties file and reapply your modifications using overrides to the applicable property files in the customer_overrides.properties file.

To set the number of days the information is retained in Transaction Register:

Note: This changes the retention period for all Transaction Register entries, not just Sterling e-Invoicing entries.

1. Create a **customer_overrides.properties** file.
2. Add the following line to the customer_overrides.properties file:

   ```
   translator.mapper.maximumTransactionRegisterAge=[number_of_days_to_retain_info]
   ```

   In this example, **translator** represents the translator.properties file where the original property is set, **mapper** represents the Sterling B2B Integrator Map Editor user interface, **maximumTransactionRegisterAge** represents the number of days that the Transaction Register will retain information before being purged, and **[number_of_days_to_retain_info]** is the actual number of days (for example, if you set this parameter equal to 30, the information is retained for 30 days).

Business Process Example

The following is an example of how the eInvoice Duplicate Check service is called:

```
<process name="TestEInvoiceDuplicateCheckService">
  <sequence>
    <operation name="TestEInvoiceDuplicateCheckService">
      <participant name="eInvoiceDuplicateCheck"/>
      <output message="Xout">
        <assign to="." from="*"></assign>
        <assign to="InvoiceNumber">123456789</assign>
        <assign to="InvoiceDate">2008-01-24</assign>
        <assign to="SupplierVatID">IT123</assign>
        <assign to="BuyerVatID">CZ123</assign>
        <assign to="ArchiveRole">1</assign>
      </output>
      <input message="Xin">
        <assign to="." from="*"></assign>
```

```
            </input>
        </operation>
    </sequence>
</process>
```

Enabling eInvoice Duplicate Check Document Tracking

When you are creating or editing your eInvoice Duplicate Check business process in the business process text editor, you can easily enable eInvoice Duplicate Check document tracking in the IBM Sterling B2B Integrator by selecting the **Document Tracking** check box on the Process Levels page. Set the following options as needed and leave the rest of the business process parameters as the defaults:

- On the Deadline Settings page, set the deadline and notification options, if necessary.
- On the Life Span page, set the life span, if necessary.

eInvoice Event Service

The eInvoice Event service is used to send e-mail notifications to the specified user(s) if a failure occurs during the e-Invoice business process execution. The following table provides an overview of the eInvoice Event service:

System Name
>   eInvoiceEventService

Graphical Process Modeler (GPM) categories)
>   All Services, e-Invoicing

Description
>   This service is responsible for sending e-mail notifications to the specified user(s) in case of any failures during the business process execution.

Business usage
>   This service is used to send e-mail notification in case of any failures that occur during e-Invoice business process execution, and thus alert the buyer or supplier and the IBM Sterling B2B Integrator administrator.

Usage example
>   E-mail notifications are sent to the specified users if any failure occurs while signing, validating, archiving, or timestamping of invoices. The e-mail addresses are configurable.

Preconfigured?
>   Yes, a default instance of the eInvoice Event service is created during the archive script install.

Requires third party files?
>   No

Platform availability
>   All supported Sterling B2B Integrator platforms.

Related services
>   None

Sterling B2B Integrator requirements
>   None

Initiates business processes?
>   No

Invocation

Should only be invoked by the e-Invoice process.

Business process context considerations

See "Configure the eInvoice Event Service" on page 13 for more details.

Returned status values

Success = The service successfully creates the e-mail notification and is triggered. Also, the business process that was invoked does not have an error.

Failure = The service fails to send the e-mail notification or the notification is triggered successfully but the business process that was invoked contained an error.

Restrictions

No

Persistence level

Does not set the persistence level, therefore the persistence level defaults to the workflow.

Testing considerations

Debug information for this service is located at:

Operations > System > Logs > eInvoicing

How the eInvoice Event Service Works

The eInvoice Event service sends e-mail notifications to the specified user(s) if any failure occurs during the business process execution.

The eInvoice Event service sends e-mail notifications to the specified user(s) in the following scenarios:

- On the supplier side, if signing fails, the business process that handles the signing process invokes the eInvoice Event service and sends the relevant information (include the reason for failure and failure code, if any). An e-mail is sent to the specified supplier stating that the signing process failed.
- On the buyer side, if validation fails, then the business process that handles the validation process invokes the eInvoice Event service and sends the relevant information (include the reason for failure and failure code, if any). An e-mail is sent to the specified buyer stating that the validation process failed.
- Notifications are sent if the external or internal archiving fails, including failure to store canonical data, timestamp data, raw invoice, or audit information. Notifications are also sent if an attempt is made to archive an already archived invoice (duplicate invoice).

Note: E-mail addresses of all the users are configurable.

The eInvoice Event service prevents e-mail spam when a problem is causing repeated failures while executing the e-Invoice business processes. Examples of problems that may cause a failure are; if there is a missing or bad canonical map, or lack of connectivity to the integrated archive database. Unchecked, the rate of notification e-mails could overwhelm a customer's e-mail system and personal e-mail account.

Implementing the eInvoice Event Service

To implement the eInvoice Event service, specify field settings for the service configuration in the GPM as necessary. See "Configure the eInvoice Event Service."

Configure the eInvoice Event Service

1. Select **Deployment** > **Services** > **Configuration**.
2. Search for eInvoice Event service or select it from the list and click **Go!**.
3. Click **Edit**.
4. Specify field settings in the GPM (see the description of parameters on page 23)
5. In the Confirm page, verify that the **Enable Service for Business Processes** check box is selected.

Setting Up the Service in the GPM

Use the field definitions in the following table to set up the service configuration in the GPM, if necessary:

Parameter
> **Description**

eventNotificationType
> Type of event notification. Valid values are:
> - 0 = information
> - 1 = warning
> - 2 = error
>
> Required.

eventMailTo
> E-mail address of the users to whom the event notifications are to be sent. Required.

eventMailSubject
> Subject for the event notification e-mail. Required.

eventResponseCode
> Response code or failure code from an external system. Optional.

eventDescription
> Detailed description of the information, warning, or error. Required.

eventNotifyEntity
> Whether or not to send the notification to the buyer or supplier. Valid values are:
> - True
> - False
>
> Default is True. Optional.

eventNotifyAdmin
> Whether or not to send the notification to the IBM Sterling B2B Integrator administrator. Valid values are:
> - True
> - False
>
> Default is True. Optional.

eventCallerOnError

Whether the calling process is facing an error. Valid values are:

- True
- False

Optional.

Business Process Example

The following is an example of how the eInvoice Event service is called. However, this service should only be called from the included e-Invoice process provided as part of Sterling e-Invoicing.

```
<process name="TestEInvoiceEventService">
 <sequence>
   <assign to="eventDescription">Maximum connections reached</assign>
   <assign to="eventMailSubject">Max conn reached</assign>
   <assign to="eventMailTo">test@test.com</assign>
   <assign to="eventNotificationType">2</assign>
   <assign to="eventNotifyEntity">true</assign>
   <assign to="eventNotifyAdmin">true</assign>
   <assign to="eventResponseCode">1122</assign>
   <assign to="eventCallerOnError">true</assign>
   <operation name="eInvoice Event Service">
    <participant name="eInvoiceEventService"/>
    <output message="eInvoiceEventServiceInputMessage">
    <assign to="." from="*"></assign>
        </output>
   <input message="inmsg">
     <assign to="." from="*"></assign>
   </input>
   </operation>
</sequence>
</process>
```

Enabling eInvoice Event Document Tracking

To enable eInvoice Event document tracking in the IBM Sterling B2B Integrator, select the **Document Tracking** check box on the Process Levels page. Set the following options as needed and leave the rest of the business process parameters as the defaults:

- On the Deadline Settings page, set the deadline and notification options, if necessary.
- On the Life Span page, set the life span, if necessary.

eInvoice Time Stamping Request Service

The eInvoice Time Stamping Request service timestamps archived invoices with the country or region code IT (Italy). The following table provides an overview of the eInvoice Time Stamping Request service:

System Name

eInvoiceTimeStampingRequestService

Graphical Process Modeler (GPM) categories)

All Services and e-Invoicing

Description

This service, when invoked, searches for all the invoices that have the supplier or buyer VAT ID equal to IT (Italy) and are not yet timestamped. This service creates a hash XML file of the invoice data and sends it to be

timestamped. If there are multiple invoices from the same supplier or buyer (same VAT ID), then those invoices are grouped and a hash XML file is created for such invoices. Each hash XML file has multiple hashes based on the number of invoices having the same VAT ID within the group. The For Each Document service is used to pick up the hash XML files individually, and the TrustWeaver™ e-Invoicing business process is invoked to timestamp the files.

Business usage
> Per the directives of the European Council, all archived invoices that are from Italy need to be timestamped (an additional signature). The eInvoice Time Stamping Request service creates hash XML files of the archived invoices to send it to TrustWeaver to be timestamped.

Usage example
> If you are using Sterling e-Invoicing, it requires you to send the archived invoices from Italy (IT) to be timestamped. This service is used by the business processes to get the hash XML files of the archived invoices (based on the VAT IDs of the buyer and supplier) and send them to the TrustWeaver server to be timestamped.

Preconfigured?
> eInvoiceTimeStampingRequestService

Requires third party files?
> No

Platform availability
> All supported Sterling B2B Integrator platforms.

Related services
> This service is used in conjunction with Trustweaver Request service, Trustweaver Response service, eInvoice Archive service, and For Each Document Service.

Sterling B2B Integrator requirements
> You must execute the archive install script before using this service. This script creates the necessary configurations to communicate with the archive database and checks in the fact models that are required by the Mapped Extraction service, which is in turn used by the eInvoice Archive service. While the install script is running, you will be asked to provide all information about the database to be used as the e-Invoice Archive database.

Initiates business processes?
> No

Invocation
> This business process can be scheduled to execute at a particular time. It can also be executed directly by you.

Business process context considerations
> This service puts the hash XML files into the workflow.

Returned status values
> Success = Successfully created the hash XML file from the invoice data.
>
> Error = If there are no invoices to be timestamped or if the service is not able to successfully create the hash XML file from the invoice data.

Restrictions
> N/A

Persistence level
> N/A

Testing considerations
> Debug information for this service is located at:
>
> Operations > System > Logs > eInvoicing

How the eInvoice Time Stamping Request Service Works

The eInvoice Time Stamping Request service, when invoked, searches for the archived invoices with the country or region code IT (Italy) that have not been timestamped. For timestamping, it is not required to send the whole document, so the eInvoice Time Stamping Request service creates a hash of the invoice data, which is a hexadecimal string. This hash is then placed in a hash XML file, where the identifier is the invoice ID and is followed by the hash. If there are multiple invoices from the same supplier or buyer (same VAT ID), then those invoices are grouped and a hash XML file is created for such invoices. Each hash XML file has multiple hashes based on the number of invoices having the same VAT ID within such a group. Thus, the For Each Document service is used to pick up the hash XML files individually, and the TrustWeaver e-Invoicing business process is invoked to timestamp the files.

A predefined business process, EInvoiceTimeStamping is provided for timestamping. When you set up the integrated archive, this business process is automatically scheduled to run every day at midnight.

Implementing the eInvoice Time Stamping Request Service

To implement the eInvoice Time Stamping Request service, complete the following tasks:

1. Install the e-Invoice Archive script. See the Implementation Guide for more information. This script creates the necessary configurations to establish communication with the archive database and checks in the fact models that are required by the Mapped Extraction service.
2. While the install script is running, you need to provide all the details about the database that will be used as the e-Invoice Archive database.

Configure the eInvoice Time Stamping Request Service

1. Select **Deployment** > **Services** > **Configuration**.
2. Search for eInvoice Time Stamping Request service or select it from the list and click **Go!**.
3. Click **Edit**.
4. In the Confirm page, verify that the **Enable Service for Business Processes** check box is selected.

Business Process Example

The following example illustrates how the eInvoice Time Stamping Request service can be used in a business process:

```
<sequence name="ForEachHashXML">
    <operation name="For Each Document">
      <participant name="ForEachDocument"/>
      <output message="ForEachDocumentTypeInputMessage">
        <assign to="DOCUMENT_KEY_PREFIX">TS</assign>
        <assign to="ITERATOR_NAME">DocExtract</assign>
```

```
          <assign to="." from="*"></assign>
        </output>
        <input message="inmsg">
          <assign to="." from="*"></assign>
        </input>
      </operation>

      <choice name="Choice Start">
        <select>
          <case ref="more_hashfile" activity="SendRequestForTimeStamping"/>
        </select>

       <sequence name="SendRequestForTimeStamping">
          <assign name="Assign" to="Original_Doc" from="PrimaryDocument/@*">
          </assign>
          <operation name="Invoke Sub-Process">
            <participant name="InvokeSubProcessService"/>
            <output message="InvokeSubProcessServiceTypeInputMessage">
              <assign to="INVOKE_MODE">SYNC</assign>
              <assign to="WFD_NAME">TrustWeaverEInvoicing</assign>
              <assign to="." from="*"></assign>
            </output>
            <input message="inmsg">
              <assign to="." from="*"></assign>
            </input>
          </operation>

          <assign name="Assign" to="Archive_Doc" from="PrimaryDocument/@*">
          </assign>
          <operation name="eInvoice Archive Service">
            <participant name="eInvoiceArchiveService"/>
            <output message="eInvoiceArchiveServiceInputMessage">
              <assign to="Mode">2</assign>
              <assign to="Type">0</assign>
              <assign to="." from="*"></assign>
            </output>
            <input message="inmsg">
              <assign to="." from="*"></assign>
            </input>
          </operation>

          <repeat name="repeater" ref="ForEachHashXML"/>

        </sequence>
      </choice>
    </sequence>
  </sequence>
</process>
```

Enabling eInvoice Time Stamping Request Document Tracking

To enable eInvoice Time Stamping Request document tracking in the , select the
Document Tracking check box on the Process Levels page. Set the following
options as needed and leave the rest of the business process parameters as the
defaults:

- On the **Deadline Settings** page, set the deadline and notification options, if
  necessary.
- On the Life Span page, set the life span, if necessary.

Semaphore Service

The Semaphore service works in the same manner as the Lock service, which enables a business process to request, renew, or delete a lock for a particular resource, except that the Semaphore service allows 1-n semaphores (locks) to exist on a particular resource instead of just one lock.

The following table provides an overview of the Semaphore service:

System Name
GetSemaphoreService and ReleaseSemaphoreService

Graphical Process Modeler (GPM) categories)
All Services

Description
The Semaphore service works in the same manner as the Lock service, except that it allows 1-n locks to exist on a particular resource.

Business usage
This service allows 1-n locks to exist on a particular resource that is to be used in a business process at run time. This allows access to be controlled as required by the IBM Sterling B2B Integrator or resource, which may have implication on performance due to resource limitations or any other reason.

Usage example
Generates a resource lock for a business process and releases the same lock at the end of business process.

Preconfigured?
GetSemaphoreService and ReleaseSemaphoreService

Requires third party files?
No

Platform availability
All supported Sterling B2B Integrator platforms.

Related services
Lock service

Sterling B2B Integrator requirements
None

Initiates business processes?
No

Invocation
Should only be invoked by the e-Invoice process flow.

Business process context considerations
None

Returned status values
Success, Error

Restrictions
None

Persistence level
Does not set the persistence level, therefore the persistence level defaults to the workflow.

Testing considerations

Error (log) information for this service is located at:

Operations > System > Logs > eInvoicing

How the Semaphore Service Works

The Semaphore service works in the same manner as the Lock service, which enables a business process to request, renew, or delete a lock for a particular resource, except that the Semaphore service allows 1-n locks to exist on a particular resource instead of just one lock.

The Semaphore service uses the semaphore identifier and time that you set in the GPM or business process to identify the lock to set and how long to keep the IBM Sterling B2B Integrator or resource locked.

Implementing the Semaphore Service

To implement the Semaphore service, complete the following tasks:

1. Specify field settings for each instance in the service configuration in the GPM as necessary. See "Setting Up the Service in the GPM or Business Process" or create a business process to supply the appropriate parameters. See "Parameters Passed From Service to the Business Process" on page 20.

2. Include two instances of the Semaphore service in your business process (one to lock resources, another to unlock them). Also ensure that you specify the same lock key for both.

Note: Use the GetSemaphoreService instance to set locks and the ReleaseSemaphoreService instance to release locks.

Configure the Semaphore Service

1. Select **Deployment** > **Services** > **Configuration**.
2. Search for Semaphore service or select it from the list and click **Go!**.
3. Click **Edit**.
4. Specify field settings in the GPM (see the description of parameters"Setting Up the Service in the GPM or Business Process").
5. On the Confirm page, verify that the **Enable Service for Business Processes** check box is selected.

Setting Up the Service in the GPM or Business Process

Use the field definitions in the following table to set up the service configuration in the GPM or add the appropriate parameters to your business process:

Note: If you need to overwrite the value that you have already configured in the service instance user interface page, you can pass the new value from the business process using the BPML parameters below.

Parameter

Description

Action

Specifies the action to grant a semaphore lock or release a semaphore lock. Valid values are:

- GRANT

- RELEASE

Required. BPML value is ACTION.

Semaphore
The name of the IBM Sterling B2B Integrator or resource on which the lock is applied. Required for GRANT action only.

Note: You cannot use spaces with this parameter value.

BPML value is SEMAPHORE.

Semaphore ID
The semaphore identifier for releasing a resource. Required for RELEASE action only. BPML value is SEMAPHORE_ID.

Max Count
The maximum number of locks that can be granted. Required for GRANT action only. BPML value is MAX_COUNT.

Time Out
The expiration time for the lock. The default is -1 (never). Optional. BPML value is TIME_OUT.

User The name of the user or resource holding the lock. Optional. BPML value is USER.

Wait Time
The length of time to wait if the request exceeds the maximum number of locks. The default value is -1 (no wait time). Optional. BPML value is WAIT_TIME.

Desc The description of the lock. Optional. BPML value is DESC.

Node Name
The cluster node name reserving the lock. This value enables the system to successfully clear the lock on startup without impacting any other nodes in a clustered environment. Optional. BPML value is NODE_NAME.

Clear on Start Up
Whether the semaphore reservation (lock) should expire on system restart. Valid values are TRUE (default--lock should expire on system restart) and FALSE. Optional. BPML value is CLEAR_ON_START_UP.

Note: Use when you want to ensure that the lock is always clear when the IBM Sterling B2B Integrator is restarted.

Parameters Passed From Service to the Business Process

The following table contains the parameter passed from the Semaphore service to the business process:

Parameter
Description

SEMAPHORE_ID
The semaphore identifier for releasing a resource. Required for RELEASE action only. BPML value is SEMAPHORE_ID.

GetSemaphoreService Business Process Example

The following is an example of how the Semaphore service is called to set a semaphore (lock).

Note: If more than one business process needs to share the same semaphore, ensure that the semaphore name used for each business process is the same.

```
<operation name="requesting semaphore">
  <participant name="GetSemaphoreService"/>
    <output message="Xout">
      <assign to="SEMAPHORE">getSemaphoreTest_3</assign>
      <assign to="MAX_COUNT">2</assign>
      <assign to="TIME_OUT">50</assign>
    </output>
    <input message="Xin">
      <assign to="." from="*"></assign>
    </input>
</operation>
```

ReleaseSemaphoreService Business Process Example

The following is an example of how the Semaphore service is called to release a semaphore (lock).

Note: SEMAPHORE_ID is mandatory. ReleaseSemaphoreService deletes the semaphore on SEMAPHORE_ID, which is set by GetSemaphoreService. After deleting, SEMAPHORE_ID is removed from process data. If nothing is deleted, no error is promulgated.

```
<operation name="releasing semaphore">
  <participant name="ReleaseSemaphoreService"/>
    <output message="Xout">
          <assign to="." from="*"></assign>
    </output>
    <input message="Xin">
          <assign to="." from="*"></assign>
    </input>
</operation>
```

Enabling Semaphore Document Tracking

When you are creating or editing your Semaphore business process in the business process text editor, you can easily enable Semaphore document tracking in the IBM Sterling B2B Integrator by selecting the **Document Tracking** check box on the Process Levels page. Set the following options as needed and leave the rest of the business process parameters as the defaults:

- On the Deadline Settings page, set the deadline and notification options, if necessary.
- On the Life Span page, set the life span, if necessary.

eInvoice Archive Service

The eInvoice Archive service is used to archive invoices. Depending on the type of archive you select, this service either archives the invoices in a canonical format to a database or provides the archive information to an external system through a business process.

The following table provides an overview of the eInvoice Archive service:

System Name
    eInvoiceArchiveService

Graphical Process Modeler (GPM) categories)
    All Services and eInvoicing

Description
    The eInvoice Archive service is used to archive invoices. Depending on the
    type of archive you select, this service either archives the invoices to a
    database or provides the archive information to an external system through
    a business process.

Business usage
    This service is used to store signed and validated invoices received from
    the buyer or supplier. It is also used to store timestamp information about
    an invoice and to audit operations performed on the invoices (Signing,
    Validation, Revalidation, Timestamping).

Usage example
    You must execute the e-Invoice archive install script before using this
    service. This script creates the necessary configuration to connect to the
    archive database and check in the fact models that are required by the
    Mapped Extraction service. During the install script execution, you must
    provide all information about the database that will be used as the
    e-Invoice archive database.

Preconfigured?
    eInvoiceArchiveService

Requires third party files?
    No

Platform availability
    All supported Sterling B2B Integrator platforms.

Related services
    Uses the Document Extraction service to split the e-Invoice batch (which
    contains one or more e-Invoices in canonical format) into individual
    e-Invoices, and then calls the Mapped Extraction service for each e-Invoice
    to store it in the archive database.

Sterling B2B Integrator requirements
    You must execute the e-Invoice archive install script before using this
    service. This script creates the necessary configuration to connect to the
    archive database and check in the fact models that are required by the
    Mapped Extraction service. During the install script execution, you must
    provide all information about the database that will be used as the
    e-Invoice archive database.

Initiates business processes?
    No

Invocation
    Should only be invoked by the e-Invoice process. The e-Invoice process is a
    wrapper process that normally invokes either the supplier or buyer
    process. This buyer or supplier process then invokes the eInvoice Archive
    service.

Business process context considerations
    None

Returned status values

Success = The service successfully processes an e-Invoice in canonical format and then invokes the Mapped Extraction service by passing the e-Invoice document to it.

Error = If the service fails to process the e-Invoice in canonical format or fails to invoke Mapped Extraction service. For a buyer process only, if there are duplicate invoices or some mandatory data is missing for an e-invoice, the service returns an error but the e-invoice data is written to the archive database.

Restrictions

None

Persistence level

Does not set the persistence level, therefore the persistence level defaults to the workflow.

Testing considerations

Error (log) information for this service is located at:

Operations > System > Logs > eInvoicing

How the eInvoice Archive Service Works

The eInvoice Archive service is used to archive invoices. Depending on the type of archive you select, this service either archives the invoices to a database or provides the archive information to an external system through a business process.

This service is used to store signed and validated invoices received from the buyer or supplier. It is also used to store timestamp information about an invoice and to audit operations performed on the invoices (Signing, Validation, Revalidation, Timestamping).

Implementing the eInvoice Archive Service

To implement the eInvoice Archive service, complete the following tasks:

1. Execute the e-Invoice archive install script before using this service. This script creates the necessary configuration to connect to the archive database and check in the fact models that are required by the Mapped Extraction service. During the install script execution, you must provide all information about the database that will be used as the e-Invoice archive database.
2. Specify field settings for the service configuration in the GPM as necessary.
3. Create a business process to supply the appropriate parameters.

Configuring the eInvoice Archive Service

1. Select **Deployment** > **Services** > **Configuration**.
2. Search for eInvoice Archive service or select it from the list and click **Go!**.
3. Click **Edit**.
4. Specify field settings in the GPM
5. On the Confirm page, verify that the **Enable Service for Business Processes** check box is selected.

Setting Up the Service in the GPM

Use the field definitions in the following table to set up the service configuration in the GPM, if necessary:

Parameter
    Description

Type   The type of archive to be used. Valid values are:
- 0 = internal (integrated)
- 1 = external
- 2 = custom

Required.

Mode   The mode in which the archive functions. Valid values are:
- 0 = store
- 1 = audit
- 2 = timestamp

Required.

Parameters Passed From Business Process to Service

The following table contains the parameters passed from the business process to the eInvoice Archive service:

Note: If you need to overwrite the value that you have already configured in the service instance user interface page, you can pass the new value from the business process using the parameters below.

Parameter
    Description

Archive_Role
    Whether the archive is done by the buyer or supplier. Valid values are:
- Buyer
- Supplier

Required.

Usage_code
    Test or production indicator. Valid values are:
- Test
- Production

Required.

Operation
    Whether performing a Signing or Validation operation. Valid values are:
- SIGN
- VALIDATE

Required.

Archive_Doc
    The signed or validated e-Invoice that will be archived. Required.

Details_Doc

    The evidence information received during the signing or validation process. Required.

PrimaryDocument

    The e-Invoice in canonical format. Required.

Original_Doc

    The original hash file that was sent for timestamping. Required only if the mode is TIMESTAMP.

Buyer_Archive_Doc_
GUID Preassigned Globally Unique Identifier (GUID) for storing the signed invoice. Required if Archive_Role is Buyer.

Supplier_Archive_Doc_
GUID Preassigned Globally Unique Identifier (GUID) for storing the validated invoice. Required if Supplier_Role is Supplier.

Buyer_Details_Doc_
GUID Preassigned Globally Unique Identifier (GUID) for storing evidence information. Required if Archive_Role is Buyer.

Supplier_Details_Doc_
GUID Preassigned Globally Unique Identifier (GUID) for storing evidence information. Required if Supplier_Role is Supplier.

Reprocess

    Specifies whether the e-Invoice must be reprocessed from a jar file. Valid values are:

- 0 = false (do not reprocess; this is the default)
- 1 = true (reprocess)

    Optional.

Business Process Example

The following is an example of how the eInvoice Archive service is called to create an external or custom archive:

```
<process name="TestArchiveCreate">
  <sequence>

    <operation name="File System Adapter">
      <participant name="eInvoiceArchive_Test_collecter"/>
      <output message="FileSystemInputMessage">
        <assign to="Action">FS_COLLECT</assign>
        <assign to="attachFile">/eInvoice/canonical.dat</assign>
        <assign to="collectMultiple">false</assign>
        <assign to="deleteAfterCollect">false</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <assign to="OriginalDocument" from="//PrimaryDocument" append="false"></assign>

    <operation name="File System Adapter">
      <participant name="eInvoiceArchive_Test_collecter"/>
      <output message="FileSystemInputMessage">
        <assign to="Action">FS_COLLECT</assign>
        <assign to="attachFile">/eInvoice/signed_invoice.dat</assign>
```

```
        <assign to="collectMultiple">false</assign>
        <assign to="deleteAfterCollect">false</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>

    <assign to="Archive_Doc" from="PrimaryDocument/@SCIObjectID"
append="true"></assign>

    <operation name="File System Adapter">
      <participant name="eInvoiceArchive_Test_collecter"/>
      <output message="FileSystemInputMessage">
        <assign to="Action">FS_COLLECT</assign>
        <assign to="attachFile">/eInvoice/evidence.dat</assign>
        <assign to="collectMultiple">false</assign>
        <assign to="deleteAfterCollect">false</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>
    <assign to="Details_Doc" from="PrimaryDocument/@SCIObjectID"
append="true"></assign>

    <assign to="PrimaryDocument"
from="OriginalDocument/PrimaryDocument/@SCIObjectID"></assign>

     <assign to="Archive_Role">Buyer</assign>
     <assign to="Usage_Code">Test</assign>
     <assign to="Operation">SIGN</assign>
     <assign to="Buyer_Archive_Doc_GUID">test:1180aa8820a:854</assign>
     <assign to="Buyer_Details_Doc_GUID">test:1180aa8820a:855</assign>

    <operation name="eInvoice Archive Service">
      <participant name="eInvoiceArchiveService"/>
      <output message="eInvoiceArchiveServiceInputMessage">
        <assign to="Mode">0</assign>
        <assign to="." from="*"></assign>
      </output>
      <input message="inmsg">
        <assign to="." from="*"></assign>
      </input>
    </operation>
    <assign to="status">Success</assign>
  </sequence>
</process>
```

Enabling eInvoice Archive Document Tracking

When you are creating or editing your eInvoice Archive business process in the
business process text editor, you can easily enable eInvoice Archive document
tracking in Sterling B2B Integrator by selecting the **Document Tracking** check box
on the Process Levels page. Set the following options as needed and leave the rest
of the business process parameters as the defaults:

- On the Deadline Settings page, set the deadline and notification options, if
  necessary.
- On the Life Span page, set the life span, if necessary.

eInvoice Archive Status Update Service

The eInvoice Archive Status Update service updates the operational status of an invoice to either Failed or Info if the invoice is stored in the archive. It also adds a description explaining why the status was updated.

The following table provides an overview of the eInvoice Archive Status Update service:

System Name
　　eInvoiceArchiveStatusUpdateService

Graphical Process Modeler (GPM) categories)
　　All Services and eInvoicing

Description
　　The eInvoice Archive Status Update service updates the operational status of an invoice to Success, Failed, or Info if the invoice is stored in the archive. It also adds a description explaining why the status was updated. The audit entry for the invoice retains the last status value after running this service when the StatusType parameter is INFO. If this parameter is SUCCESS or FAILED, the status of the invoice is SUCCESS or FAILED, respectively. This service can also retroactively change the status of an invoice so that the correct invoice can be easily identified for auditing purposes.

Business usage
　　This service enables the user to update the status of an invoice stored in the e-Invoicing archive, after it has already been signed or verified by TrustWeaver™. This services also updates the status of an invoice when errors occur.

Usage example
　　You can use this service to change the status of one of the duplicate invoices to the status of SUCCESS after the invoice is stored in the Integrated Archive.

Preconfigured?
　　eInvoiceArchiveStatusUpdateService

Requires third party files?
　　No

Platform availability
　　All supported Sterling B2B Integrator platforms.

Related services
　　No

Sterling B2B Integrator requirements
　　You must execute the invoice archive install script before using this service. This script creates the necessary configuration to connect to the archive database and check in the fact models that are required by the Mapped Extraction service. During the install script execution, you must provide all information about the database that will be used as the invoice archive database.

Initiates business processes?
　　No

Invocation

This service is invoked to run during normal processing after the invoices have already been added to the archive.

Business process context considerations

None

Returned status values

Success = The service successfully updated the archive status of an invoice.

Error = More than one invoice was returned, no invoices were returned, or an invoice was found but an issue occurred while creating the audit record.

Restrictions

None

Persistence level

Does not set the persistence level, therefore the persistence level defaults to the workflow.

Testing considerations

Create a business process to call the service and fill in all the parameters.

Error (log) information for this service is located at:

Operations > System > Logs > eInvoicing

How the eInvoice Archive Status Update Service Works

The eInvoice Archive Status Update service updates the operational status of an invoice to **User defined custom value** if the invoice is stored in the archive. It also adds a description (if a description is provided) explaining why the status was updated.

This service enables the user to update the status of an invoice stored in the e-Invoicing archive, after it has already been signed or verified by TrustWeaver.

This service can also retroactively change the status of an invoice so that the correct invoice can be easily identified for auditing purposes. This service gives you the ability to select a specific invoice out of a set of duplicate invoices to update. Additionally, you can specify a reason for the change (for example, if you change an invoice status from Failed to Success), so you can identify the reason for the update.

The eInvoice Archive Status Update service can change the overall status of an invoice from Failed to Success, as well as from Success to Failed. If there are multiple invoices matching the search criteria of this service, the service either aborts the processing with an error or warning, or continues the processing with a warning and updates the status of all the invoices matching the search criteria.

Implementing the eInvoice Archive Status Update Service

To implement the eInvoice Archive Status Update service, complete the following task:

Execute the invoice archive install script before using this service. This script creates the necessary configuration to connect to the archive database and check in the fact models that are required by the Mapped Extraction service. During the install script execution, you must provide all information about the database that

will be used as the e-Invoice archive database, because the invoice to updated must reside in the Integrated Archive.

Configuring the eInvoice Archive Status Update Service

1. Select **Deployment** > **Services** > **Configuration**.
2. Search for eInvoice Archive Status Update service or select it from the list and click **Go!**.
3. Click **Edit**.
4. Specify field settings in the GPM.
5. Specify field settings in the business process.
6. On the Confirm page, verify that the **Enable Service for Business Processes** check box is selected.

Setting Up the Service in the GPM

Use the field definitions in the following table to set up the service configuration in the GPM, if necessary:

Parameter
    Description

BuyerVatID
    The buyer's transaction tax code. Optional.

Description
    Explains why the status was updated. Optional.

InvoiceDateFrom
    The starting date of the date range for the invoice. Optional.

    Note: Date must be in the format MM/DD/YYYY.

InvoiceDateTo
    The ending date of the date range for the invoice. Optional.

    Note: Date must be in the format MM/DD/YYYY.

InvoiceLabel
    The invoice label. Optional.

InvoiceNumber
    The number of the invoice. Optional.

SupplierVatID
    The supplier's transaction tax code. Optional.

Invoice Identifier
    A descriptor to uniquely identify the invoice. Optional.

    Note: You define the Invoice Identifier in the map. This allows you to decide which fields are used as the criteria to uniquely identify the invoice, and allows you to change the key based upon the particular partner, business division, and so forth. Typically, this field is a concatenation of fields such as Supplier ID, Buyer ID (or possibly VAT ID), and invoice number. If two invoices have the same Invoice Identifier , they are considered duplicates of each other. The first invoice that is archived is considered a good invoice and any invoice with the same Invoice Identifier and Role that is archived after that is considered to be a duplicate. If this field is not provided in canonical invoice, the combination of the following

fields from the canonical invoice are used to uniquely identify the invoice: INVOICE_NUMBER, INVOICE_DATE, SUPPLIER_VAT_ID, BUYER_VAT_ID, and ROLE.

Invoice Identifier Extension
> An extension of the invoice identifier to unique identify one duplicate invoice from another. Optional.
>
> **Note:** This is an optional field that you define in the map. This field may contain values such as the Interchange control number, transaction control number, or any other value from the EDI data which may uniquely identify an invoice.

Archive Update Action
> Specifies the action to be taken when multiple records are found for a specified criteria while performing a status update. Optional. Valid values are 0 - Exit with exception, 1 - Exit with Warning, 2 - continue with warning.

Parameters Passed From Business Process to Service

The following table contains the parameters passed from the business process to the eInvoice Archive Status Update service:

Parameter
> **Description**

InvoiceLabel
> The invoice label. Optional.

InvoiceNumber
> The number of the invoice. Optional.

InvoiceDate(From)
> The starting date of the date range for the invoice. Optional.
>
> **Note:** Date must be in the format MM/DD/YYYY.

InvoiceDate(To)
> The ending date of the date range for the invoice. Optional.
>
> **Note:** Date must be in the format MM/DD/YYYY.

SupplierVatID
> The supplier's transaction tax code. Optional.

BuyerVatID
> The buyer's transaction tax code. Optional.

Status ID
> The invoice status identifier. Optional. Valid values are:
> 1. SIGNED - 1
> 2. VALIDATED - 2
> 3. DUPLICATE - 5
> 4. CUSTOM_FAILED - 98
> 5. CUSTOM_INFO - 99

StatusType
> Indicates the general reason why the status was updated. If there was an

error you mark it as FAILED. If it was updated simply because they are adding comments to the invoice, the status is INFO. Optional. Valid values are:

- 51 - SUCCESS
- 52 - FAILED
- 53 - INFO

ArchiveRole
Specifies which participant created the invoice. Optional.

Description
Explains why the status was updated. Optional.

Invoice Identifier
A descriptor to uniquely identify the invoice. Optional.

Note: You define the Invoice Identifier in the map. This allows you to decide which fields are used as the criteria to uniquely identify the invoice, and allows you to change the key based upon the particular partner, business division, and so forth. Typically, this field is a concatenation of fields such as Supplier ID, Buyer ID (or possibly VAT ID), and invoice number. If two invoices have the same Invoice Identifier , they are considered duplicates of each other. The first invoice that is archived is considered a good invoice and any invoice with the same Invoice Identifier and Role that is archived after that is considered to be a duplicate. If this field is not provided in canonical invoice, the combination of the following fields from the canonical invoice are used to uniquely identify the invoice: INVOICE_NUMBER, INVOICE_DATE, SUPPLIER_VAT_ID, BUYER_VAT_ID, and ROLE.

Invoice Identifier Extension
An extension of the invoice identifier to unique identify one duplicate invoice from another. Optional.

Note: This is an optional field that you define in the map. This field may contain values such as the Interchange control number, transaction control number, or any other value from the EDI data which may uniquely identify an invoice.

Archive Update Action
Specifies the action to be taken when multiple records are found for a specified criteria while performing a status update. Optional. Valid values are 0 - Exit with exception, 1 - Exit with Warning, 2 - continue with warning.

Business Process Example

The following is an example of how the eInvoice Archive Status Update service is called:

```
<process name="TestEInvoiceArchiveStatusUpdate">
  <sequence>
    <operation name="eInvoiceArchiveStatusUpdate">
      <participant name="eInvoiceArchiveStatusUpdate"/>
      <output message="Xout">
        <assign to="." from="*"></assign>
        <assign to="InvoiceNumber">IN999933072</assign>
        <assign to="ArchiveRole">1</assign>
        <assign to="StatusType">52</assign>
        <assign to="Description">Item 12 has the wrong amount.</assign>
```

```
      </output>
      <input message="Xin">
        <assign to="." from="*"></assign>
      </input>
    </operation>
  </sequence>
</process>
```

Enabling eInvoice Archive Status Update Document Tracking

When you are creating or editing your eInvoice Archive Status Update business process in the business process text editor, you can easily enable eInvoice Archive Status Update document tracking in Sterling B2B Integrator by selecting the **Document Tracking** check box on the Process Levels page. Set the following options as needed and leave the rest of the business process parameters as the defaults:

- On the Deadline Settings page, set the deadline and notification options, if necessary.
- On the Life Span page, set the life span, if necessary.

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