

Message Specification for Invited Partners

SAP Traceability Hub Connectivity



Document History

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1 About this Document

1.1 Purpose and Scope

This document describes the standard structure of serial number exchange files used by Contract Manufacturer Organizations (CMOs) and Third Party Logistics (3PL) service providers interacting with a Market Authorization Holder (MAH) on SAP Traceability Hub Connectivity, also known as the Hub.

1.1.1 Role and Scenario

This document describes all message related functions offered by the Hub, that is for CMOs and 3PLs. Please consult the sections that are relevant for your role and scenario.

1.1.2 MAH Supplement

This document describes standard features and message exchange functionality relevant for all MAHs connecting to the Hub. Business rules specific to a given MAH are available in a supplement document for that MAH.



Where information is available in an MAH specific supplement, this is flagged by the book icon.

1.2 Target Audience

This document is for CMOs and 3PLs and in particular:

- Integration experts
- Implementation teams

Related Information

- [SAP Traceability Hub Help Page](#)

1.3 Glossary

Abbreviation	Definition
3PL	Third Party Logistics service provider
CMO	Contract Manufacturing Organization
EDMC	Electronic Drug Monitoring Code
EPC	Electronic Product Code, often used to summarize different formats of unique identifiers
EPCIS	Electronic Product Code Information Services - GS1 Standard, refer to http://www.gs1.org/epcis/epcis/1-1 . This specification is based on EPCIS 1.1
FDA	Food and Drug Administration
GCP	Global Company Prefix (GS1 Standard)
GLN	Global Location Number (GS1 Standard)
GS1	Global Standardization Body
GTIN	Global Trade Identification Number (GS1 Standard)
MAH	Marketing Authorization Holder
NDC	National Drug Code
NHRN_DRN	National Healthcare Reimbursement Number (NHRN, product identifier used in Brazil)
NTIN	National Trade Item Number, special version of a GTIN where the company prefix depicts a country. Used to bring country specific numbering schemes into the GTIN format.
PZN	Pharmazentralnummer (Central Pharma Number, product identifier used in Germany)
SGTIN	Serialized GTIN, special case of EPC
SSCC	Serial Shipping Container Code

1.4 Typographic Conventions

Type Style	Description
	This icon indicates that there is information in an MAH specific document. Certain processes or options vary and depend on the preference of the MAH.
Example	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Textual cross-references to other documents.
Example	Emphasized words or expressions.

Type Style	Description
EXAMPLE	Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.
Example	Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE	Keys on the keyboard, for example, F2 or ENTER.
Light blue	Represents static data that is the same for all actions
Yellow	Represents data specific to an MAH
Green	Represents variable data, for example, requested amount of serial numbers

2 Introduction

2.1 SAP Traceability Hub Connectivity

SAP Traceability Hub Connectivity, also known as the Hub, is an innovative on-demand solution that connects pharmaceutical organizations and their supply chain partners on a secure network that is owned and managed by SAP. The Hub supports the transfer and transformation of data between members of the pharmaceutical supply chain connected to the Hub. Connected partners can exchange serialization messages across a secure and reliable network.

The Hub supports various integration capabilities such as content-based routing and mapping, as well as a number of connectivity options such as web services, SFTP servers, or a Web App portal. The details of the connectivity options for a participant are discussed during the onboarding process.

2.2 CMO Scenario

The Hub allows for the exchange of traceability data between a Market Authorization Holder (MAH) and a Contract Manufacturer Organization (CMO).

A CMO packages a finished product on behalf of the MAH. For this purpose, the MAH provides on request a list or range of serial numbers to the CMO to print on the finished product. After packaging, the CMO sends a list of commissioned serial numbers to the MAH potentially including aggregation and shipping information. The CMO may also provide serial number status information for example, “lost” or “unused” serial numbers.

The Hub is designed to facilitate CMOs of all sizes. While some CMOs may run a track and trace solution such as SAP Advanced Track and Trace, others may execute processes manually. The Hub allows CMOs to connect to the network through a Web App portal or directly through their backend system.

In summary, the Hub supports the following processes:

- Serial Number Request and Response
- Serialized Data Transmission

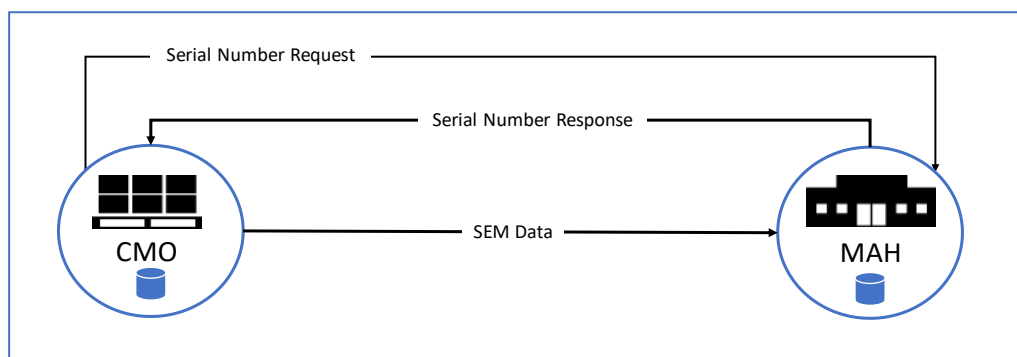


Figure 1 - CMO Data Exchange

The following sections outline:

- The processes in some more detail
- Structure of the serial number request and response messages exchanged between CMO and the Hub
- Structure of the EPCIS file exchanged between a CMO and the Hub containing the commissioned data

2.3 3PL Scenario

The Hub allows for the exchange of data between an MAH and a 3PL partner.

A 3PL ships a finished product on behalf of the MAH. For this purpose, the MAH may provide SSCCs to the 3PL.

The Hub is designed to facilitate 3PLs of all sizes. While some 3PLs may run a track and trace solution such as SAP Advanced Track and Trace, others may execute processes manually. The Hub allows 3PLs to connect to the network through a Web App portal or directly through their backend system.

In summary, the Hub supports the following processes:

- SSCC Request and Response
- Sending and receiving SEM information such as decommissioning events

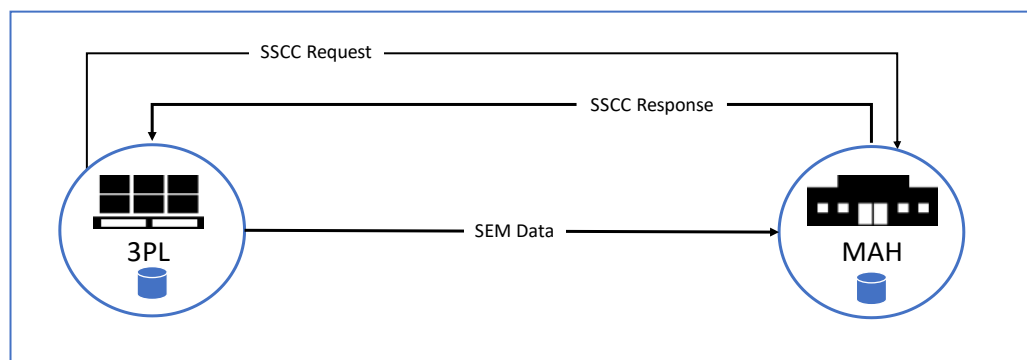


Figure 2 - 3PL Data Exchange

The following sections describe:

- The processes in more detail
- Structure of the SSCC request and response messages exchanged between a 3PL and the Hub
- Structure of the EPCIS file exchanged between a 3PL and the Hub containing SEM data

2.3.1 3PL Requirements

This section summarizes requirements for 3PLs.

Details for Russian market requirements and related 3PL scenarios are described in the Russian Message Specification on the [SAP Traceability Hub Help Page](#).

2.3.1.1 Managing SSCCs

The property COMPANY_PREFIX must be provided in case of number range requests for an SSCC.

The Extension Digit can have any value from 0 to 9 and is used to increase the numbering capacity of the Serial Reference. Its use is at the discretion of the company allocating the SSCC.

2.3.1.2 Decommissioning Events in the EU

To report a decommissioning event, a 3PL must use the SAP Custom Disposition in the European Union.

The Disposition field is required and must contain one of the SAP Custom Dispositions in the following table, for example, sap_eu_sample.

Section 5.4.1 includes a sample 3PL EPCIS file.

EMVS Pack Status	Business Step	Custom Dispositions
DESTROYED	*	sap_eu_destroyed
SAMPLE	*	sap_eu_sample
FREE SAMPLE	*	sap_eu_free_sample
EXPORTED	*	sap_eu_exported
SUPPLIED	*	sap_eu_supplied
LOCKED	*	sap_eu_locked
CHECKED_OUT	*	sap_eu_checked_out
STOLEN	*	sap_eu_stolen

Note

If you cannot meet these requirements, please contact the organization that invited you to join SAP Traceability Hub Connectivity.

2.3.1.3 ATTP

Users of ATTP, please refer to SAP Note [2637562](#).

2.4 File and File Name Limits

Note

The following limits apply to files:

- Files must not exceed 40 Megabytes, and contain not more than one million items.
- Maximum file name length is 64 characters including file extension.

3 Serial Number Request and Response

This section describes procedures and file content for all types of number request, including, for example, serial numbers and SSCCs.

3.1 CMO Scenario

In order to manufacture a serialized product for an MAH, a CMO needs to know which numbers to print on the packages. This can be achieved in several ways:

- A fixed number range is assigned to the CMO for a dedicated product. This number range, for example a 14-digit alphanumeric string with the prefix A1, is used for all batches of this product. In this case the Serial Number Request and Response process is not required.
- The CMO requests a set amount of numbers to cover a given timeframe. There is no requirement for a direct connection to the MAH, and this avoids repeatedly requesting numbers. For example, if the CMO typically produces one batch per week for the MAH with a typical lot size of 10,000 units, the CMO can request enough numbers to last for three months. Therefore, to cover the three-month period, the CMO requests 120,000 serial numbers (10,000 items per week * 4 weeks/month * 3 months).
- The CMO requests numbers for every batch produced. For example, the CMO receives an order to produce 10,000 items. In this case the CMO requests 10,500 numbers to cover the lot size and wastage.



The preferred method for requesting serial numbers depends on the MAH. See the supplement for each MAH.

The serial number request is issued by the CMO through a machine-to-machine integration (an IT backend integration to the Hub) or through a manual request in the Web App portal.

Within the request, the CMO defines the amount of serial numbers required for a given product.

When a CMO requests serial numbers through the Web App portal, the SAP Traceability Hub Connectivity Portal creates a Serial Number Request message in the relevant format. The specification of the Serial Number Request is not applicable in this case. However, the Serial Number Response Message specification is relevant because a CMO must download the response message and transmit the file to the respective packaging line.

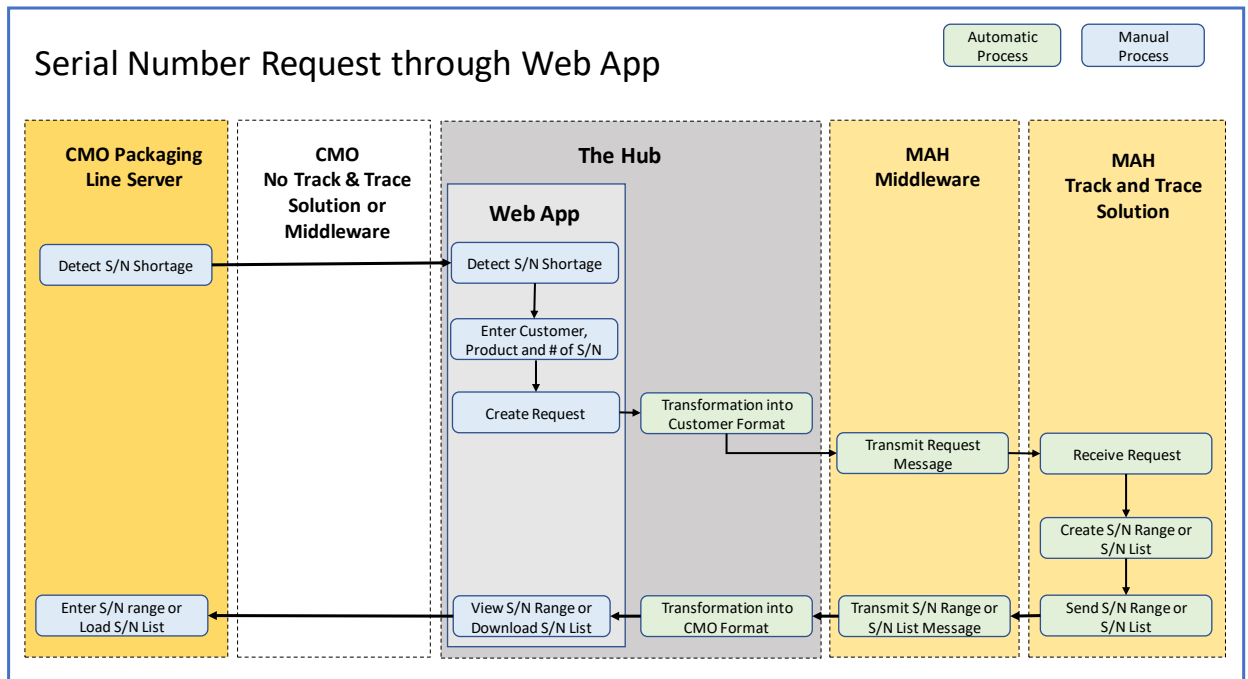


Figure 3 - Serial Number Request Process using the SAP Traceability Hub Connectivity Portal

In the case of a machine-to-machine connection, serial number request and response apply.

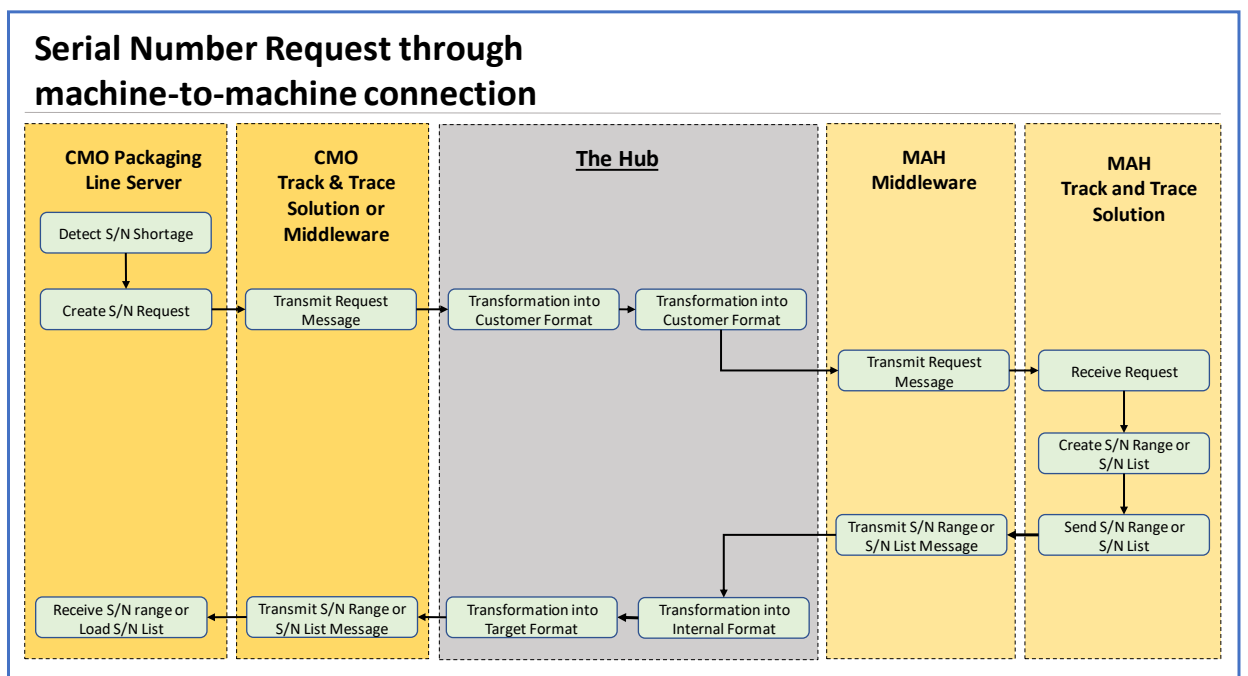


Figure 4 - Serial Number Request Process using a machine-to-machine connection

As a response to a serial number request an MAH can:

- Deny the request
- Send a serial number list
- Serial number range from which the CMO creates a serial number list



The preferred method of response, that is, a list or a range or a mix of both, depends on the MAH. See the supplement for each MAH.

3.2 3PL Scenario

A 3PL can request SSCCs using system-to-system exchange or the Web App of SAP Traceability Hub Connectivity.

3.3 Boundary Conditions



Boundary Conditions may depend on the preference of the MAH. If relevant, see the supplement for each MAH.

3.4 Message Structure

This section outlines the message structure.

In the examples, variable fields are shown in the following colors:

- **Light blue** represents static data that is the same for all actions.
- **Yellow** represents data specific to an MAH.
- **Green** represents variable data, for example, requested amount of serial numbers.

Section 0 includes sample files.

3.5 Message Header

There is no specific message header. In the case of a SOAP interface, standard SOAP envelopes apply. In other cases, the Serial Number Request must be sent according to the requirements of that technical channel.

3.6 Synchronous and Asynchronous Mode

The sections which follow describe Serial Number requests and responses for synchronous mode and asynchronous mode.

3.6.1 Asynchronous Serial Number Request

A partner sends a message to the Hub using an AS2 service in Asynchronous Mode, and the Hub sends the response back using the AS2 service Asynchronously with a delay of five minutes maximum.

Content from example	Explanation	Mandatory/Optional/Conditional
<code><ns0:MessageBulk xmlns:ns0="http://sap.com/xi/SAPICH"></code>	Root_Element	M
<code><Message> </Message></code>	Root_Element	M
<code><SenderId>Partner_GLN</SenderId></code>	Partner sends the Sender_GLN in the SenderId as part of serial number request	M
<code><ReceiverId>MAH_GLN</ReceiverId></code>	Partner sends the Receiver_GLN in the ReceiverId as part of serial number request	M
<code><MessageType>SNR</MessageType></code>	Partner sends the 'SNR' value in the MessageType as part of serial number request	O
<code><Encryption>?</Encryption></code>	Partner sends 'Encryption Type' as part of serial number request	O
<code><Compression>Com</Compression></code>	Partner sends 'Compression Type' as part of serial number request	O
<code><Signature>Sig</Signature></code>	Partner sends 'Signature Type' in the Signature as part of serial number request	O
<code><MessageId>GUID</MessageId></code>	Partner sends Unique Identifier value in the MessageId as part of serial number request	M
<code><RelatedMessageId>?</RelatedMessageId></code>	Partner sends Correlation Message Identifier value in the RelatedMessageId	O
<code><FileName>FileName</FileName></code>	Partner sends 'FileName' value in the FileName	O
<code><ExtendedHeader> </ExtendedHeader></code>	Segment_Element	
<code><Parameter type="string" name="GLN"/></code>	Partner sends Parameter 'Type' and 'Name' value in the Parameter as part of serial number request	O

Content from example	Explanation	Mandatory/Optional/Conditional
<code><Parameter name="version" type="string">3.2</Parameter></code>	This describes the version of Serial Number Request	O
<code><MessageContent></MessageContent></code>	Root_Element encloses the Serial Number Request Message	
<code><SerialNumberRequestMessage></code>	SerialNumberRequestMessage is a static entry for a serial number request message	M
<code><SendingSystem>Line_1</SendingSystem></code>	Line_1 is the name of the line or site server or the backend track and trace system of the par. This ID must be known by the customer as it is used to check authorization for the request.	M
<code><IDType>GTIN</IDType></code>	ID type defines for which type of product ID serial numbers are requested. Allowed values: GTIN, SSCC, CN_HUMAN, CN_VET	M
<code><Size>50000</Size></code>	Size is the quantity of the codes requested by the packaging line solution	M
<code><ObjectKey></code> <code> <Name>GTIN</Name></code> <code> <Value>67612791391608</Value></code> <code></ObjectKey></code>	Provide the GTIN for the requested product	M (one of the options)
<code><ObjectKey></code> <code> <Name>CN_HUMAN</Name></code> <code> <Value>1234567</Value></code> <code></ObjectKey></code>	This is the node for serial number requests for China human medication products where the GTIN cannot be used. It comprises of a 2-digit code version and a 5-digit product (RES) code provided by CFDA, unique for every level of the product serialized for China.	

Content from example	Explanation	Mandatory/Optional/Conditional
<pre> <ObjectKey> <Name>CN_VET</Name> <Value>1234567</Value> </ObjectKey> </pre>	This is the node for serial number requests for China veterinary medication products where the GTIN cannot be used. It comprises of a 2-digit code version and a 5-digit product (RES) code provided by CFDA, unique for every level of the product serialized for China.	
<pre> <ObjectKey> <Name>COMPANY_PREFIX</Name> <Value>7612791</Value> </ObjectKey> </pre>	The property COMPANY_PREFIX must be provided in case of number range requests for SSCC	
<pre> <ObjectKey> <Name>EXT_DIGIT</Name> <Value>0</Value> </ObjectKey> </pre>	The Extension Digit can have any value from 0 to 9 and is used to increase the numbering capacity of the Serial Reference. Its use is at the discretion of the company allocating the SSCC.	C Depends on MAH's requirements
<pre> <ObjectKey> <Name>LIST_RANGE</Name> <Value>L</Value> </ObjectKey> </pre>	LIST_RANGE allows you to specify the type of result of the serial number request depending on your requirements. So, you can request to receive a range or a list. Requestor can choose type of the request: 'L' for list and 'R' for range. If it does not matter for you, then this parameter can be empty, in this case the customer track and trace system will automatically decide what to return depending on available data. Also, depending on MAH policy, you may receive a list even though you requested a range or vice versa.	O
<pre> <ObjectKey> <Name>SENDER_GLN</Name> <Value>XXXXXXXXXXXXXX</Value> </ObjectKey> </pre>	Sender_GLN in the object key as part of serial number requests.	M

Content from example	Explanation	Mandatory/Optional/Conditional
<pre> <ObjectKey> <Name>RECEIVER_GLN</Name> <Value>XXXXXXXXXXXX</Value> </ObjectKey> </pre>	Receiver_GLN (MAH_GLN) in the object key as part of serial number requests.	M
<pre> <ObjectKey> <Name>READYLY_ENCODE</Name> <Value>1</Value> </ObjectKey> </pre>	Setting the parameter to "1" sets the encoding type, and you receive the full GS1 Element String.	C Note To receive crypto codes, this is mandatory.

3.6.1.1 Asynchronous Sample Serial Number Request

```
<?xml version="1.0" encoding="UTF-8"?>
<ns0:MessageBulk xmlns:ns0="http://sap.com/xi/SAPICH">
  <Message>
    <SenderId>xxxxxxxxxxxx</SenderId>
    <ReceiverId>xxxxxxxxxxxx</ReceiverId>
    <MessageType>SNR</MessageType>
    <Encryption>Eny</Encryption>
    <Compression>Com</Compression>
    <Signature>Sig</Signature>
    <MessageId>25DE2493-F4C6-412B-A5F9-45C9B4E9E972</MessageId>
    <RelatedMessageId>ReltMid</RelatedMessageId>
    <FileName>FileName</FileName>
    <ExtendedHeader>
      <Parameter name="GLN" type="string">XXXXXXXXXXXX</Parameter>
      <Parameter name="version" type="string">3.2</Parameter>
    </ExtendedHeader>
    <MessageContent>
      <SerialNumberRequestMessage>
        <SendingSystem>Partner_System</SendingSystem>
        <IDType>GTIN</IDType>
        <Size>10</Size>
        <ObjectKey>
          <Name>GTIN</Name>
          <Value>XXXXXXXXXXXX</Value>
        </ObjectKey>
        <ObjectKey>
          <Name>LIST_RANGE</Name>
          <Value>R</Value>
        </ObjectKey>
        <ObjectKey>
          <Name>SENDER_GLN</Name>
          <Value>xxxxxxxxxxxx</Value>
        </ObjectKey>
        <ObjectKey>
          <Name>RECEIVER_GLN</Name>
          <Value>xxxxxxxxxxxx</Value>
        </ObjectKey>
      </SerialNumberRequestMessage>
    </MessageContent>
  </Message>
</ns0:MessageBulk>
```

```

        </MessageContent>
    </Message>
</ns0:MessageBulk>

```

3.6.2 Asynchronous Serial Number Response

Content from example	Explanation	Mandatory/ Optional/ Recommended
<ns0:MessageBulk xmlns:ns0="http://sap.com/xi/SAPICH">	Root_Element	M
<Message> </Message>	Root_Element	M
<SenderId>MAH_GLN</SenderId>	Partner receives MAH_GLN number in the SenderId as part of serial number Response	M
<ReceiverId>Partner_GLN</ReceiverId>	Partner receives Partner_GLN number in the ReceiverId as part of serial number Response	M
<MessageType>SNR</MessageType>	Partner receives the 'SNR' value in the MessageType as part of serial number response	O
<Encryption>?</Encryption>	Partner receives 'Encryption Type' as part of serial number response	O
<Compression>Com</Compression>	MAH to send type 'Compression Type' in the Compression as part of serial number Response	O
<Signature>Sig</Signature>	MAH to send type 'Signature Type' in the Signature as part of serial number Response	O
<MessageId>GUID</MessageId>	Partner receives Unique Identifier value in the	M

Content from example	Explanation	Mandatory/ Optional/ Recommended
	MessageId as part of serial number response	
<RelatedMessageId> C </RelatedMessageId>	Partner receives Correlation Message Identifier value in the RelatedMessageId as part of serial number response	O
<FileName> FileName </FileName>	Partner receives 'FileName' value in the FileName as part of serial number response	O
<ExtendedHeader> </ExtendedHeader>	Segment_Element	
<Parameter type="string" name="GLN"/>	MAH to Send Parameter 'Type' and 'Name' value in the Parameter as part of serial number Response	O
<Parameter name="version" type="string">3.2</Parameter>	This describes the version of Serial Number Response	O
<MessageContent></MessageContent>	Root_Element encloses the MAH Serial Number Response Message.	
< SerialNumberConfirmationMessage >	SerialNumberConfirmationMessage is a static entry used for a serial number request message	M
<ReceivingSystem> Line_1 </ReceivingSystem>	Line_1 is the name of the line or site server or the backend track and trace system of the partner. This ID will be the same as provided in the request message.	M
<ACTIONCODE> C </ACTIONCODE >	Status of the request processing. Can take values: 'R'-rejected, 'P'-Partial, 'C'-Completed.	R

Content from example	Explanation	Mandatory/ Optional/ Recommended
	Completed means that all requested serial numbers were provided without any restrictions. Partial means that request was restricted, and amount of serial numbers provided is less than requested. Rejected means that some restrictions or errors occurred, and no serial numbers were provided.	
<IDType>GTIN</IDType>	ID type defines for which type of product ID serial numbers are requested. Allowed values: GTIN, SSCC, CN_HUMAN, CN_VET	M
<ObjectKey> <Name>GTIN</Name> <Value>67612791391608</Value> </ObjectKey>	The GTIN must be provided in case of number range requests for SUPERVISIO, SGTIN	M (one of the four options, depending on Request)
<ObjectKey> <Name>CN_HUMAN</Name> <Value>1234567</Value> </ObjectKey>	This is the node for serial number requests for China human medication products where the GTIN cannot be used. It comprises of a 2-digit code version and a 5-digit product (RES) code provided by CFDA, unique for every level of the product serialized for China.	
<ObjectKey> <Name>CN_VET</Name> <Value>1234567</Value> </ObjectKey>	This is the node for serial number requests for China veterinary medication products where the GTIN cannot	

Content from example	Explanation	Mandatory/ Optional/ Recommended
</ObjectKey>	be used. It comprises of a 2-digit code version and a 5-digit product (RES) code provided by CFDA, unique for every level of the product serialized for China.	
<ObjectKey> <Name>COMPANY_PREFIX</Name> <Value>7612791</Value> </ObjectKey>	The COMPANY_PREFIX must be provided in case of number range requests for SSCCs.	
<Size>50000</Size>	Size is the quantity of the codes received by the packaging line solution.	M
<Interval> <NumberFrom>100000000001</NumberFrom> <NumberTo>100000500000</NumberTo> </Interval>	When the response includes a serial number range, this is identified by a <NumberFrom> and a <NumberTo>.	
<SerialNumber>86153050000031896084</SerialNumber> <SerialNumber>86153050000031901281</SerialNumber> <SerialNumber>86153050000031918124</SerialNumber> <SerialNumber>86153050000031927123</SerialNumber>	When the response includes a serial number list, each serial number is provided in the <SerialNumber> tag.	
<ObjectKey> <Name>LIST_RANGE</Name> <Value>L</Value> </ObjectKey>	LIST_RANGE allows you to specify the type of result of the serial number request depending on your requirements. You can request a range or list, 'L' for list and 'R' for range. If it doesn't matter for you then this parameter can be empty, in this case the customer track and trace system	M

Content from example	Explanation	Mandatory/ Optional/ Recommended
	automatically decides what to return depending on available data. Also, depending on MAH policy, you may receive a list even though you requested a range or vice versa.	
<pre><ObjectKey> <Name>SENDER_GLN</Name> <Value>XXXXXXXXXXXXXX</Value> </ObjectKey></pre>	Partner receives the MAH_GLN in the object key as part of serial number response.	M
<pre><ObjectKey> <Name>RECEIVER_GLN</Name> <Value>XXXXXXXXXXXXXX</Value> </ObjectKey></pre>	Partner receives the Partner_GLN in the object key as part of serial number response.	M

3.6.2.1 Asynchronous Sample Serial Number Response

```
<?xml version="1.0" encoding="UTF-8"?>
<ns0:MessageBulk xmlns:ns0="http://sap.com/xi/SAPICH">
  <Message>
    <SenderId>xxxxxxxxxxxxxx</SenderId>
    <ReceiverId>xxxxxxxxxxxxxx</ReceiverId>
    <MessageType>SNR</MessageType>
    <Encryption>Eny</Encryption>
    <Compression>Com</Compression>
    <Signature>Sig</Signature>
    <MessageId>25DE2493-F4C6-412B-A5F9-45C9B4E9E972</MessageId>
    <RelatedMessageId>ReltMid</RelatedMessageId>
    <FileName>FilName</FileName>
    <ExtendedHeader>
      <Parameter name="GLN" type="string">XXXXXXXXXXXXXX</Parameter>
      <Parameter name="version" type="string">3.2</Parameter>
    </ExtendedHeader>
    <MessageContent>
```

```

<SerialNumberConfirmationMessage>
  <ReceivingSystem>MAH_System</ReceivingSystem>
  <ActionCode>C</ActionCode>
  <Size>10</Size>
  <IDType>GTIN</IDType>
  <Interval>
    <NumberFrom>0300780000000579</NumberFrom>
    <NumberTo>0300780000000588</NumberTo>
  </Interval>
  <ObjectKey>
    <Name>GTIN</Name>
    <Value>XXXXXXXXXXXX</Value>
  </ObjectKey>
  <ObjectKey>
    <Name>LIST_RANGE</Name>
    <Value>R</Value>
  </ObjectKey>
  <ObjectKey>
    <Name>SENDER_GLN</Name>
    <Value>xxxxxxxxxxxx</Value>
  </ObjectKey>
  <ObjectKey>
    <Name>RECEIVER_GLN</Name>
    <Value>xxxxxxxxxxxx</Value>
  </ObjectKey>
</SerialNumberConfirmationMessage>
</MessageContent>
</Message>
</ns0:MessageBulk>

```

3.6.3 Synchronous Serial Number Request

A partner sends a message to the Hub using a SOAP service in synchronous mode, and the Hub sends the response synchronously using SOAP.

Content from example	Explanation	Mandatory/ Optional/ Recommended
<code><n0:SerialNumberRequestMessage xmlns:n0="http://sap.com/xi/SAP ICH"></code>	SerialNumberRequestMessage is a static entry used for a serial number request message	M
<code><SendingSystem>Line_1</SendingSystem></code>	Line_1 is the name of the line or site server or the backend track and trace system of the partner. This ID must be known by the customer as it is used to check authorization for the request.	M
<code><IDType>GTIN</IDType></code>	ID type defines for which type of product ID serial numbers are requested. Allowed values: GTIN, SSCC, CN_HUMAN, CN_VET	M
<code><Size>50000</Size></code>	Size is the quantity of the codes requested by the packaging line solution	M
<code><ObjectKey></code> <code> <Name>GTIN</Name></code> <code><Value>67612791391608</Value></code> <code></ObjectKey></code>	The GTIN must be provided for number range requests for SUPERVISIO, SGTIN.	M (one of the options)
<code><ObjectKey></code> <code> <Name>CN_HUMAN</Name></code> <code> <Value>1234567</Value></code> <code></ObjectKey></code>	This is the node for serial number requests for China human medication products where the GTIN cannot be used. It comprises of a 2-digit code version and a 5-digit product (RES) code provided by CFDA, unique for every level of the product serialized for China.	
<code><ObjectKey></code> <code> <Name>CN_VET</Name></code> <code> <Value>1234567</Value></code> <code></ObjectKey></code>	This is the node for serial number requests for China veterinary medication products where the GTIN cannot be used. It comprises of a 2-digit code version and a 5-digit product (RES) code provided by CFDA, unique	

Content from example	Explanation	Mandatory/ Optional/ Recommended
	for every level of the product serialized for China..	
<pre> <ObjectKey> <Name>COMPANY_PREFIX</Name> <Value>7612791</Value> </ObjectKey> </pre>	The property COMPANY_PREFIX must be provided in case of number range requests for SSCC	
<pre> <ObjectKey> <Name>EXT_DIGIT</Name> <Value>0</Value> </ObjectKey> </pre>	The Extension Digit can have any value from 0 to 9 and is used to increase the numbering capacity of the Serial Reference. Its use is at the discretion of the company allocating the SSCC.	C Depends on MAH's requirements
<pre> <ObjectKey> <Name>LIST_RANGE</Name> <Value>L</Value> </ObjectKey> </pre>	LIST_RANGE allows you to specify the type of result of the serial number request depending on your requirements. So, you can request to receive a range or a list. Requestor can choose type of the request: 'L' for list and 'R' for range If it doesn't matter for you than this parameter can be empty, in this case the customer track & trace system will automatically decide what to return depending on available data. Also, depending on MAH policy, you may receive a list even though you requested a range or vice versa.	O
<pre> <ObjectKey> <Name>SENDER_GLN</Name> <Value>XXXXXXXXXXXX</Value> </ObjectKey> </pre>	Partners send the Sender_GLN (MAH_GLN) in the object key as part of serial number requests.	M
<pre> <ObjectKey> <Name>RECEIVER_GLN</Name> <Value>XXXXXXXXXXXX</Value> </ObjectKey> </pre>	Partners send the Receiver_GLN (Partner_GLN) in the object key as part of serial number requests.	M
<pre> <ObjectKey> <Name>READILY_ENCODE</Name> <Value>1</Value> </pre>	Setting the parameter to "1" sets the encoding type and receive the full GS1 Element String.	C Note

Content from example	Explanation	Mandatory/ Optional/ Recommended
</ObjectKey>		To receive crypto codes, this is mandatory.

3.6.3.1 Synchronous Sample Serial Number Request

```
<?xml version="1.0" encoding="UTF-8"?>
<ns0:SerialNumberRequestMessage xmlns:ns0="http://sap.com/xi/SAPICH">
  <SendingSystem>Partner_GLN</SendingSystem>
  <IDType>GTIN</IDType>
  <Size>100</Size>
  <ObjectKey>
    <Name>GTIN</Name>
    <Value>XXXXXXXXXXXX</Value>
  </ObjectKey>
  <ObjectKey>
    <Name>LIST_RANGE</Name>
    <Value>R</Value>
  </ObjectKey>
  <ObjectKey>
    <Name>SENDER_GLN</Name>
    <Value>XXXXXXXXXXXX</Value>
  </ObjectKey>
  <ObjectKey>
    <Name>RECEIVER_GLN</Name>
    <Value>XXXXXXXXXXXX</Value>
  </ObjectKey>
</ns0:SerialNumberRequestMessage>
```

3.6.4 Synchronous Serial Number Response

Content from example	Explanation	M/O
<code><n0:SerialNumberConfirmationMessage xmlns:n0="http://sap.com/xi/SAPICH"></code>	SerialNumberConfirmationMessage is a static entry used for a serial number request message	M
<code><ReceivingSystem>Line_1</ReceivingSystem></code>	Line_1 is the name of the line or site server or the backend track and trace system of the partner. This ID will be the same as provided in the request message.	M
<code><ACTIONCODE>C</ACTIONCODE ></code>	'R'-rejected, 'P'-Partial, 'C'-Completed	
<code><IDType>GTIN</IDType></code>	ID type defines the type of product ID serial numbers are requested for. Allowed values: GTIN, SSCC, CN_HUMAN, CN_VET	
<code><ObjectKey> <Name>GTIN</Name> <Value>67612791391608</Value> </ObjectKey></code>	The property GTIN must be provided in case of number range requests for SUPERVISIO, SGTIN	
<code><ObjectKey> <Name>CN_HUMAN</Name> <Value>1234567</Value> </ObjectKey></code>	This is the node for serial number requests for China human medication products where the GTIN cannot be used. It comprises of a 2-digit code version and a 5-digit product (RES) code provided by CFDA, unique for every level of the product serialized for China.	
<code><ObjectKey> <Name>CN_VET</Name> <Value>1234567</Value> </ObjectKey></code>	This is the node for serial number requests for China veterinary medication products where the GTIN cannot be used. It comprises of a 2-digit code version and a 5-digit product (RES) code provided by CFDA, unique for every level of the product serialized for China.	
<code><ObjectKey> <Name>COMPANY_PREFIX</Name> <Value>7612791</Value> </ObjectKey></code>	The property COMPANY_PREFIX must be provided in case of number range requests for SSCCs.	
<code><Size>50000</Size></code>		

Content from example	Explanation	M/O
<pre> <Interval> <NumberFrom>100000000001</NumberFrom> <NumberTo>100000500000</NumberTo> </Interval> </pre>	In case the customer is returning a serial number range, this interval is identified by a <NumberFrom> and a <NumberTo>.	
<pre> <SerialNumber>86153050000031896084</SerialNumber> <SerialNumber>86153050000031901281</SerialNumber> <SerialNumber>86153050000031918124</SerialNumber> <SerialNumber>86153050000031927123</SerialNumber> </pre>	If response includes a serial number list, each serial number is provided in the <SerialNumber> tag.	
<pre> <ObjectKey> <Name>LIST_RANGE</Name> <Value>L</Value> </ObjectKey> </pre>	LIST_RANGE allows you to specify the type of result of the serial number request depending on your requirements. You can request to receive a range or a list, 'L' for list and 'R' for range. If it doesn't matter for you than this parameter can be empty, in this case the customer track & trace system will automatically decide what to return depending on available data. Also, depending on MAH policy, you may receive a list even though you requested a range or vice versa.	
<pre> <ObjectKey> <Name>SENDER_GLN</Name> <Value>XXXXXXXXXXXXXX</Value> </ObjectKey> </pre>	Partner sends the Sender_GLN (Partner_GLN) in the object key as part of serial number requests.	M
<pre> <ObjectKey> <Name>RECEIVER_GLN</Name> <Value>XXXXXXXXXXXXXX</Value> </ObjectKey> </pre>	Partner sends the Receiver_GLN (MAH_GLN) in the object key as part of serial number requests.	M

3.6.4.1 Sample Synchronous Serial Number Response

```
<?xml version="1.0" encoding="UTF-8"?>
<ns0:SerialNumberConfirmationMessage xmlns:ns0="http://sap.com/xi/SAPICH">
  <ReceivingSystem>MAH_GLN</ReceivingSystem>
  <ActionCode>C</ActionCode>
  <Size>100</Size>
  <IDType>GTIN</IDType>
  <Interval>
    <NumberFrom>1234</NumberFrom>
    <NumberTo>5678</NumberTo>
  </Interval>
  <ObjectKey>
    <Name>GTIN</Name>
    <Value>XXXXXXXXXXXXXX</Value>
  </ObjectKey>
  <ObjectKey>
    <Name>LIST_RANGE</Name>
    <Value>R</Value>
  </ObjectKey>
  <ObjectKey>
    <Name>SENDER_GLN</Name>
    <Value>XXXXXXXXXXXXXX</Value>
  </ObjectKey>
  <ObjectKey>
    <Name>RECEIVER_GLN</Name>
    <Value>XXXXXXXXXXXXXX</Value>
  </ObjectKey>
  <SerialNumbers/>
</ns0:SerialNumberConfirmationMessage>
```

3.7 Message Elements

This section outlines the elements of request and response messages. As the data elements of the request and response message depend on each other, they are discussed together.

3.7.1 “SendingSystem” in Request Message and “ReceivingSystem” in Response Message

The sending system is the line or site server that is requesting serial numbers. This must be one or several fixed values defined and aligned with the MAH. On the MAH side, these identifiers determine authorization to request serial numbers.

Examples for CMO scenario:

- A CMO has two lines and wants to request serial numbers separately. The CMO names these Line 1 and Line 2, and communicates these system names to the MAH. The CMO can then request serial numbers using `<SendingSystem>Line1</SendingSystem>` to request numbers for Line 1, and `<SendingSystem>Line2</SendingSystem>` to request numbers for Line 2.
- Responses have the appropriate identifier in the `<ReceivingSystem>` tag.
- A CMO may have two lines but does not want to differentiate between the two lines for serial number requests. The CMO therefore uses a generic name such as Site_A and communicates this system name to the MAH. The CMO can then request serial numbers using `<SendingSystem>Site_A</SendingSystem>`.

3.7.2 “IDType” Definition in Request and Response Message

A partner must define the type of serial numbers requested. Only one entry is permitted in each message. Options include:

ID Type	Required for
GTIN	SGTINs
SSCC	Serialized containers
CN_HUMAN	Human medication for China market
CN_VET	Veterinary medication for China market



The products a partner produces or handles for a given MAH determine which ID Types apply. See the MAH specific supplement.

3.7.3 “Size” in Request Message

Size is a mandatory object key. Size defines the total number of serial numbers requested.

3.7.4 Product or Company Prefix in Request and Response Message

To define the product or company, a partner uses the prefixes below. Only one entry is permitted in each message and this depends on the ID Type.

ID Type	Object Key	When Used
GTIN	GTIN	SGTINs
SSCC	SSCC	Serialized containers
CN_HUMAN	CN_HUMAN	Serial numbers for China market
CN_VET	CN_VET	Serial numbers for veterinary medication for China market



The products a partner produces or handles for a given MAH determine which ID Types, and therefore Object Keys apply. See the MAH specific supplement.

3.7.5 “LIST_RANGE” in Request Message

The object key LIST_RANGE defines how numbers should be delivered. The following entries are allowed:

Value	Description
LIST	Request serial numbers as a list.
RANGE	Request serial numbers as a range. This may be applicable for non-randomized products as well as for SSCCs.
blank	Partner does not request a specific format but leaves the decision to the MAH.



The preferred method of response, that is, a list or a range or a mix of both, depends on the MAH. See the supplement for each MAH.

3.7.6 “RECEIVER_GLN” in Request and Response Message

A partner must send receiver information in a request. The preferred receiver ID is the GLN number. A partner must know the GLN, or request the GLN from the MAH. The partner uses the Object Key “RECEIVER_GLN”.



For a list of valid RECEIVER_GLNs for MAHs, see the MAH specific supplement.

3.7.7 “INTERVAL” and “SERIALNUMBER” in the Response Message

As a response to a request, an MAH can send a list or a range of serial numbers as defined in the request. The response format is shown in the examples below. It can be encoded or non-encoded.

Non-encoded format

Response Type	Formats
List Response	<code><SerialNumber>85088950006413772621</SerialNumber></code> <code><SerialNumber>85088950006414772621</SerialNumber></code>
Range Response	<code><Interval></code> <code><NumberFrom>10000000000304</NumberFrom></code> <code><NumberTo>10000000001303</NumberTo></code> <code></Interval></code>

Encoded format

Response Type	Formats
List Response	<code><SerialNumber> (01) 67612791391608 (21) 10000000981204</SerialNumber></code> <code><SerialNumber> (01) 67612791391608 (21) 10000000810304</SerialNumber></code> <code><SerialNumber> (01) 67612791391608 (21) 10000000612941</SerialNumber></code> <code><SerialNumber> (01) 67612791391608 (21) 10000000510243</SerialNumber></code> <code><SerialNumber> (01) 67612791391608 (21) 1000000001001</SerialNumber></code> <code><SerialNumber> (01) 67612791391608 (21) 10000000991023</SerialNumber></code>
List Response including crypto codes	<code><SerialNumber> (01) 16400000000115 (21) j89TCnKkLPd5X1231 (91) 1129 (92) AusibQLCfH2fbOoXL3yU77gRBOsnhdkljRGjZvl7gy0Uu9E110x6S2RzaWbKSgI1RmYQnZyumM6ZWhx3ktKOCw==</SerialNumber></code> <code><SerialNumber> (01) 16400000000115 (21) j89TCnKkLPd5X1232 (91) 1129 (92) AusibQLCfH2fbOoXL3yU77gRBOsnhdkljRGjZvl7gy0Uu9E110x6S2RzaWbKSgI1RmYQnZyumM6ZWhx3ktKOCw==</SerialNumber></code> <code><SerialNumber> (01) 16400000000115 (21) j89TCnKkLPd5X1233 (91) 1129 (92) AusibQLCfH2fbOoXL3yU77gRBOsnhdkljRGjZvl7gy0Uu9E110x6S2RzaWbKSgI1RmYQnZyumM6ZWhx3ktKOCw==</SerialNumber></code>
Range Response	<code><Interval></code>

Response Type	Formats
	<pre> <NumberFrom> (01) 67612791391608 (21) 10000000000304</NumberFrom> <NumberTo> (01) 67612791391608 (21) 100000000001303</NumberTo> </Interval> </pre>

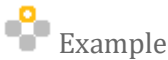
3.7.7.1 Special Characters and OMS Crypto Codes

Crypto codes issued by the Order Management Station System (OMS) of the Russian Federation can contain special characters. According to OMS documentation the following characters can be present:

! _ " % & ' (_) * _ + _ , _ - _ / _ . ; = < > ?

According to the predefined entities of the XML specification, SAP returns the following characters in escaped format:

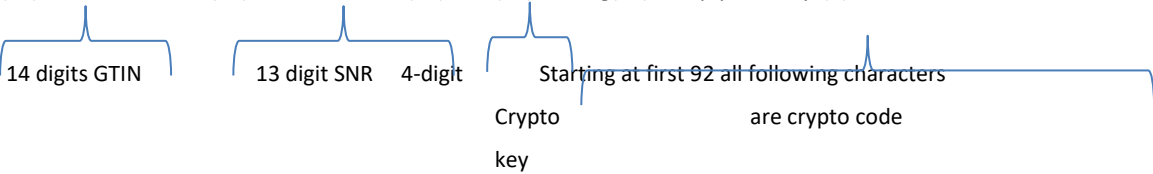
- " "
- ' '
- < <
- > >
- & &



(01)04298393000233(21)AlYtnSUMMO0KM(91)4444(92)2A78722A013E2CA312906E6AEE7&A8705EEB67C67741

Because a string of crypto codes can contain the crypto code part inside a sequence of characters such as (92) or (11111111), or an opening bracket and no closing bracket, which could cause an issue in generic decoding algorithms, SAP recommends interpreting the crypto code as follows:

(01)12345678910123(21)1234567890123(91)1234(92)abcdefg(92)lmnopqrstuvwxyz(1)234567891098765



Related Information

- Russian Message Specification on the [SAP Traceability Hub Help Page](#)

4 EPCIS Based Serialized Data Transmission

EPCIS-based serialized data is transmitted after all serial numbers are used. Typically, information about the related batch such as manufacturing and expiration date is included in the message. In addition, a message can include information about aggregation of commissioned items, that is, which unit is in which case, and which case is on which pallet as well as information about the shipment.

EPCIS based serialized data transmission is triggered at different points. The trigger point is generally decided by the Manufacturer requirements which changes from MAH to MAH.

The file or files containing the serial numbers (SGTINs or EPCs) may be generated by the line or site server that executed the production. The files can be transmitted to the Hub automatically through a machine-to-machine integration, or through a manual upload using the Web App Portal. In both cases the file structure discussed below is relevant.

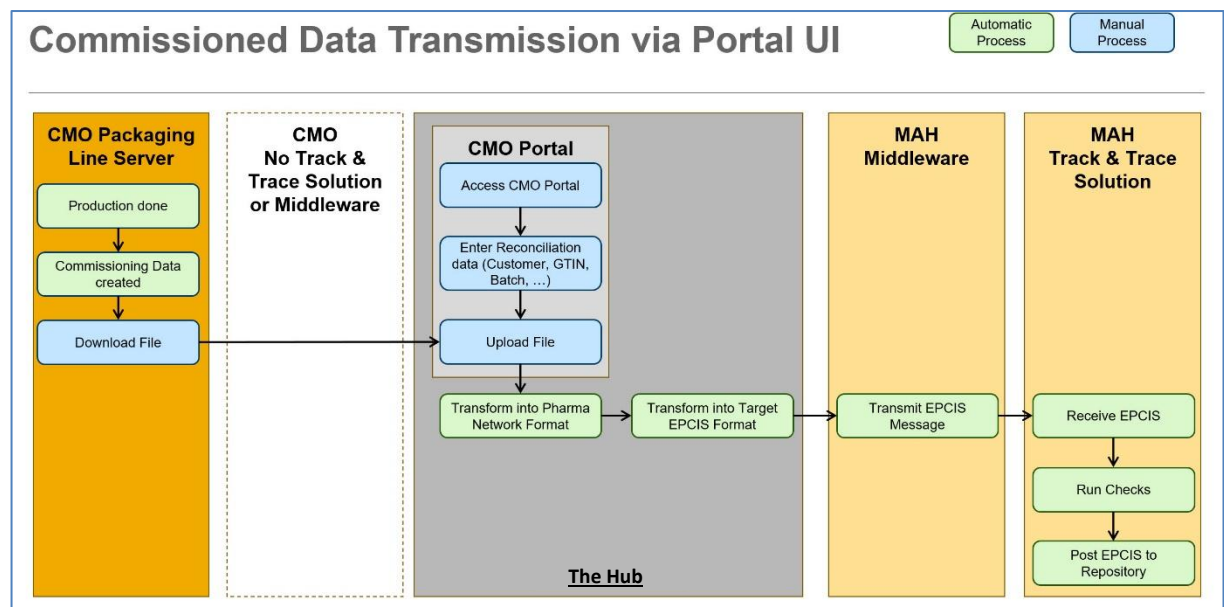


Figure 5 - Commissioned Data Transmission through the Web App Portal

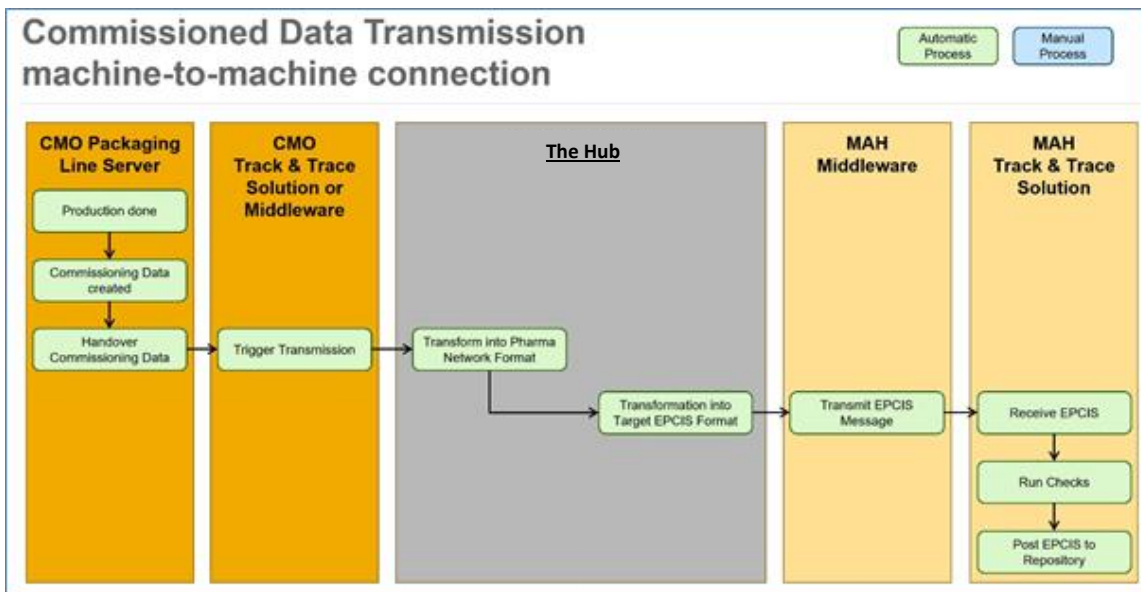


Figure 6 - Commissioned Data Transmission through machine-to-machine integration

4.1 Boundary Conditions

4.1.1 Homogeneous and Multiple Batches

The SAP Traceability Hub does not support multiple batches except for connections:

- From an ATTP system
- Through TraceLink

However, in these cases Message Splitting and Aggregation are not supported.

In all other cases, a message must contain information about a homogeneous batch of one product.

Information concerning different products or different batches of the same product must be split into separate messages.



Boundary Conditions depend on the preference of the MAH. See the MAH supplement.

In this scenario, there can be more than one batch in a message event.

4.2 Message Splitting

The Hub can split received messages. This section outlines splitting options.

Option 1

A partner sends three messages containing commissioning, aggregation, and shipping information, and the Hub delivers three messages.



Figure 7 - Partner sends three separate messages

Option 2

A partner sends all information in one message, and the Hub delivers the message to the recipient without splitting.

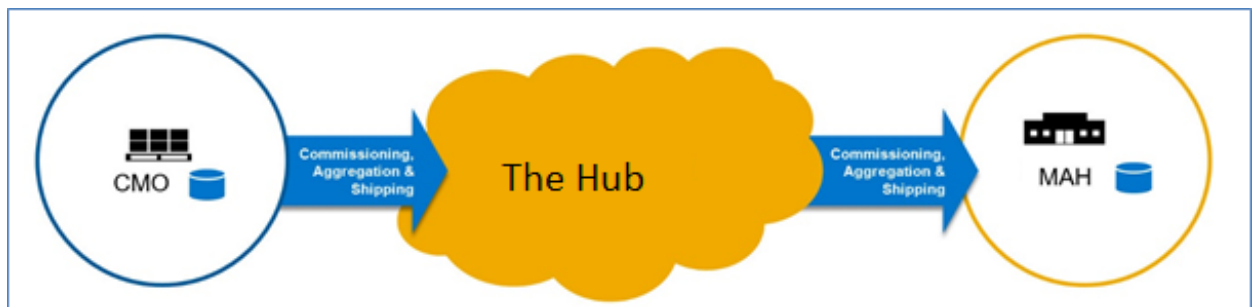


Figure 8 - One message from partner routed to MAH without splitting

Option 3

A partner sends all information in one message, and the Hub delivers separate messages to the recipient system.



Figure 9 - Message split prior to delivery

4.2.1 Event Based Splitting

The Hub can split messages based on the following events:

- Commission
- Aggregation

4.2.1.1 Commission Event

A commission event can include:

- Commission only information
- Commission and aggregation information

4.2.1.1.1 Commission Information

The incoming message contains only commission information. If the incoming message contains more than 10,000 events, the Hub splits the message.



Example

A message contains 23,000 commission events.

Result

Three separate files:

File 1- 10,000 commission events

File 2- 10,000 commission events

File 3- 3,000 commission events

4.2.1.1.2 Aggregation Information

An incoming message can contain Aggregation information, including, for example, Pallet, Case, Bundle and Item.

If the message has more than 10,000 elements at each level, the Hub splits the message.



Example

A message contains 23,000 commission events.

Result

Three separate files:

File 1- 10,000 commission events

File 2- 10,000 commission events

File 3- 3,000 commission events

4.2.1.2 Aggregation Event

A message can contain information about more than one pallet.

The Hub splits the message to provide information on each pallet in one file per pallet.

Prerequisite

The incoming message must include the Packaging level in the SAP extension. See Section 4.4.8.

The Hub will split the message into separate messages that contain information for each pallet.

4.3 Message Structure

This section outlines the message structure.

In the examples, variable fields are shown in the following colors:

- **Light blue** represents static data that are always the same.
- **Yellow** represents data that is site specific and is the same for every batch.
- **Green** represents variable data that is different for each ID or batch. This is batch and serialization data, for example, serial number, batch number, expiration and manufacturing date.

The following table describes the variables. Subsequent sections provide further details.

4.3.1 EPCIS Header

Content from example	Explanation	Mandatory/Optional
<pre><?xml version="1.0" encoding="UTF-8" ?> <epcis:EPCISDocument creationDate="2016-08-11T16:44:24Z" schemaVersion="1.1" xmlns:epcis="urn:epcglobal:epcis:xsd:1" xmlns:gslushc="http://epcis.gslus.org/hc/ns" xmlns:sbdh="http://www.unece.org/cefact/namespaces/ StandardBusinessDocumentHeader"></pre>	creationDate is the date of message creation	M
<pre><EPCISHeader> <n1:StandardBusinessDocumentHeader xmlns:n1="http://www.unece.org/cefact/namespaces/StandardBus inessDocumentHeader"> <n1:HeaderVersion>1.0</n1:HeaderVersion></pre>		M
<pre><n1:Sender> <n1:Identifier Authority="GLN"> XXXXXXXXXXXXX</n1:Identifier> </n1:Sender>We</pre>	Partner_GLN	M
<pre><n1:Receiver> <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier> </n1:Receiver></pre>	MAH_GLN	M
<pre><n1:DocumentIdentification> <n1:Standard>EPCglobal</n1:Standard> <n1:TypeVersion>1.0</n1:TypeVersion> <n1:InstanceIdentifier>005056BA6ACA1ED5B0E9C0665D4063C1 </n1:InstanceIdentifier> <n1:Type>Events</n1:Type> <n1:CreationDateAndTime>2016- 0125T10:25:53Z</n1:CreationDateAndTime> </n1:DocumentIdentification> </n1:StandardBusinessDocumentHeader> </EPCISHeader></pre>	EPCIS header details are extracted from ATTP backend system, which are not in scope for the Hub.	M
<pre><EPCISBody> <EventList> a list of events must be added here. See below for a description of the message body.</pre>		M

Content from example	Explanation	Mandatory/ Optional
<pre> </EventList> </EPCISBody> </epcis:EPCISDocument> </pre>		

4.3.2 EPCIS Body for Object Events

Within the EPCIS body, an event list can be defined consisting of object events, aggregation events, and transaction events. Multiple events with different event type can be listed within the EPCIS body of the same message.

This section outlines Object Events only. For details of aggregation events, see Section 4.3.2. Transaction events are not covered in this version of the specification.

4.3.2.1 EPCIS Commission Event

Content from example	Explanation	Mandatory /Optional/ Conditional
<code><ObjectEvent></code>	ObjectEvent: represents an event on one or more physical or digital objects. For commissioning and decommissioning of serialization items, Item level is always <code>ObjectEvent</code> .	M
<pre> <eventTime>2016-04-28T19:26:45Z</eventTime> <eventTimeZoneOffset>-06:00</eventTimeZoneOffset> </pre>	EventTime: 2016-04-28T19:26:45Z is the time when the event was created. -06:00 is the time difference with UTC	M
<pre> <epcList> <epc>urn:epc:id:sgtin:0365250.026620.000000006731</epc> Or <epc>(01)10012345337007(21)000000002158</epc> </epcList> </pre>	Unique Identifier: URN format or GS1 element string format can be used. GS1-format using application identifiers for GTIN (01) and serial number (21) can be used	M
<code><action>ADD</action></code>	Action type: says how an event relates to the lifecycle of the entity being described For commissioning event: always <code>ADD</code>	M

Content from example	Explanation	Mandatory /Optional/ Conditional
<pre><bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep></pre>	Identifies what was taking place from a business perspective at the time of the event. For Commissioning event, bizstep is always commissioning.	M
<pre><disposition>urn:epcglobal:cbv:disp:active</disposition></pre>	Disposition: identifies the business condition after the event of the physical or digital objects named. - For commissioning event, disposition is always active http://www.gs1.org/sites/default/files/docs/epc/cbv_1_1-standard-20140520.pdf See Page 26 from the above link for a list of dispositions.	M
<pre><readPoint> <id>urn:epc:id:sgln:0353755.00000.0</id> </readPoint></pre>	The Read Point is the location where the event took place, for example, the SGLN.	M
<pre><bizLocation> <id>urn:epc:id:sgln:0353755.00000.0</id> </bizLocation></pre>	The Business Location is the location where the object(s) is now considered to reside until a subsequent event takes place, for example, a manufacturing site SGLN.	O

Content from example	Explanation	Mandatory /Optional/ Conditional										
<pre><SAPEExtension> <objAttributes> <DATMF>20170127</DATMF> <LOTNO>DSAD</LOTNO> <DATEX>20170421</DATEX> <GTIN>10012345337007</GTIN> <PACKAGINGLEVEL>PL</PACKAGINGLEVEL> <MATNR>12345678</MATNR> </objAttributes> </SAPEExtension></pre>	Each Object Event Should have only one SAPEExtension Segment and one SAPEExtension for Each File. Within the SAP Extension, the batch parameter as well as a reason code are defined: - DATMF is always the Date of Manufacture, in the format YYYYMMDD and always 8 digits. - LOTNO is always the lot/batch number and must not exceed 20 characters. - DATEX is always the Expiry date YYYYMMDD and always 8 digits. - Global Trade Item number of the product commissioned/decommissioned or shipped, field is optional - Packaging Level Mandatory for aggregation event message splitting. <table><tr><th>Entity</th><th>Code</th></tr><tr><td>Pallet</td><td>PL</td></tr><tr><td>Case or Shipper</td><td>CA</td></tr><tr><td>Inner-pack or Bundle</td><td>PK</td></tr><tr><td>Saleable Item Unit</td><td>EA</td></tr></table> - MATNR is the material number of the product commissioned.	Entity	Code	Pallet	PL	Case or Shipper	CA	Inner-pack or Bundle	PK	Saleable Item Unit	EA	O for US market M M O C O
Entity	Code											
Pallet	PL											
Case or Shipper	CA											
Inner-pack or Bundle	PK											
Saleable Item Unit	EA											

4.3.2.2 EPCIS Shipping Event

Content from example	Explanation	Mandatory/ Optional
<code><ObjectEvent></code>	ObjectEvent: represents an event on one or more physical or digital objects. For commissioning and decommissioning of serialization items, Item level is always <code>ObjectEvent</code>	M
<code><eventTime>2016-04-28T19:26:45Z</eventTime></code> <code><eventTimeZoneOffset>-06:00</eventTimeZoneOffset></code>	EventTime: 2016-04-28T19:26:45Z is the time when the event was created. -06:00 is the time difference with UTC	M
<code><epcList></code> <code><epc>urn:epc:id:sgtin:0365250.026620.000000006731</epc></code> Or <code><epc>(01)10012345337007(21)00000002158</epc></code> <code></epcList></code>	Unique Identifier: URN format or GS1 element string format can be used GS1-format using application identifiers for GTIN (01) and serial number (21) can to be used	M
<code><action>OBSERVE</action></code>	Action type: says how an event relates to the lifecycle of the entity being described For Shipping event: always <code>OBSERVE</code>	M
<code><bizStep>urn:epcglobal:cbv:bizstep:shipping</bizStep></code>	Business Step: identifies what was taking place from a business perspective at the time of the event. For Shipping event bizstep is always <code>shipping</code>	M
<code><disposition>urn:epcglobal:cbv:disp:in_transit</disposition></code>	Disposition: identifies the business condition subsequent to the event of the physical or digital objects named. For shipping event, disposition is always <code>in_transit</code> http://www.gs1.org/sites/default/files/docs/epc/cbv_1_1-standard-20140520.pdf See Page 26 from the above link for a list of dispositions.	M
<code><readPoint></code> <code><id>urn:epc:id:sgln:0353755.00000.0</id></code> <code></readPoint></code>	The Read Point is the location where the event took place, for example, the SGLN.	M

Content from example	Explanation	Mandatory/ Optional
<pre> <bizLocation> <id>urn:epc:id:sgln:0353755.00000.0</id> </bizLocation> </pre>	The Business Location is the location where the object(s) is now considered to reside until a subsequent event takes place, for example, a manufacturing site SGLN.	O
<pre> <SAPEExtension> <objAttributes> <DATMF>20170127</DATMF> <LOTNO>DSAD</LOTNO> <DATEX>20170621</DATEX> <GTIN>10012345337007</GTIN> </objAttributes> </SAPEExtension> </pre>	Each Object Event Should have only one SAPEExtension Segment One SAPEExtension for Each File. Within the SAP Extension, the batch parameter as well as a reason code are defined: - DATMF is always the Date of Manufacture, in the format YYYYMMDD and always 8 digits. - LOTNO is always the lot/batch number and must not exceed 20 characters. - DATEX is always the Expiry date YYYYMMDD and always 8 digits. Global Trade Item number of the product commissioned/decommissioned or shipped, field is optional	O
<pre> <bizTransactionList> <bizTransaction type="urn:epcglobal:cbv:btt:po">urn:epcglobal:cbv:bt:0095981000019:0600022733 </bizTransaction> </bizTransactionList> </pre>	Identifiers for business transactions populate the “why” dimension of EPCIS events. This includes the bizTrasactionList field in all EPCIS event types. The EPCIS standard provides for a business transaction to be identified by a pair of identifiers. The business transaction identifier (BTT) names a business transaction and says what kind of business transaction the identifier denotes such as purchase order, invoice, and so on. The PO refers to Purchase Order: A document/message that specifies details for goods and services ordered under conditions agreed by the seller and buyer. Thus the purchase order number needs to be given.	M

4.3.2.3 EPCIS Receiving Event

When a 3PL receives goods, the 3PL sends a Receiving Event to the sender MAH. This Event is based on OBSERVE, and contains the action Receiving. BizStep can be In_Progress, or Returned if goods are returned.

Content from example	Explanation	M/C/O
<code><ObjectEvent></code>	ObjectEvent: represents an event on one or more physical or digital objects. For commissioning and decommissioning of serialization items (Item level) is always <code>ObjectEvent</code>	M
<code><eventTime>2016-04-28T19:26:45Z</eventTime></code> <code><eventTimeZoneOffset>-06:00</eventTimeZoneOffset></code>	EventTime: 2016-04-28T19:26:45Z is the time when the event was created. -06:00 is the time difference with UTC	M
<code><epcList></code> <code><epc>urn:epc:id:sgtin:0365250.026620.000000006731</epc></code> <code></epcList></code>	URN GS1 element string format.	M
<code><action>OBSERVE</action></code>	Action type: says how an event relates to the lifecycle of the entity being described. For Receiving event: always <code>OBSERVE</code>	M
<code><bizStep>urn:epcglobal:cbv:bizstep:receiving</bizStep></code>	Business Step: identifies what was taking place from a business perspective at the time of the event. For Receiving event bizstep is always <code>receiving</code>	M
<code><disposition>urn:epcglobal:cbv:disp:in_progress</disposition></code>	Disposition: identifies the business condition after the event of the physical or digital objects named. For Receiving event, disposition can be <code>in_progress</code> or <code>returned</code> . http://www.gs1.org/sites/default/files/docs/epc/cbv_1_1-standard-20140520.pdf For a list of dispositions, see Page 26 in the above GS1 document.	M
<code><readPoint><id>urn:epc:id:sgln:0353755.00000.0</id></readPoint></code>	The Read Point is the location where the event took place, for example, the SGLN.	M
<code><bizLocation></code> <code><id>urn:epc:id:sgln:0353755.00000.0</id></bizLocation></code>	The Business Location is the location where the object(s) is now considered to reside until a subsequent event takes place, for example, the SGLN of a manufacturing site.	O

Example

```
<?xml version="1.0" encoding="UTF-8" ?>
<epcis:EPCISDocument creationDate="2016-12-09T13:45:16Z" schemaVersion="1.1"
xmlns:epcis="urn:epcglobal:epcis:xsd:1" xmlns:gslushc="http://epcis.gslus.org/hc/ns"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
  <EPCISHeader>
    <n1:StandardBusinessDocumentHeader
xmlns:n1="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
      <n1:HeaderVersion>1.0</n1:HeaderVersion>
      <n1:Sender>
        <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
      </n1:Sender>
      <n1:Receiver>
        <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
      </n1:Receiver>
      <n1:DocumentIdentification>
        <n1:Standard>EPCglobal</n1:Standard>
        <n1:TypeVersion>1.0</n1:TypeVersion>
        <n1:InstanceIdentifier>005056BA6ACA1ED5B0E9C0665D4063C9</n1:InstanceIdentifier>
        <n1:Type>Events</n1:Type>
        <n1:CreationDateAndTime>2016-01-25T10:25:53</n1:CreationDateAndTime>
      </n1:DocumentIdentification>
    </n1:StandardBusinessDocumentHeader>
  </EPCISHeader>
  <EPCISBody>
    <EventList>
      <ObjectEvent>
        <eventTime>2016-12-09T14:35:16Z</eventTime>
        <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
        <epcList>
          <epc>urn:epc:id:sscc:0008820.0200000034</epc>
        </epcList>
        <action>OBSERVE</action>
        <bizStep>urn:epcglobal:cbv:bizstep:receiving</bizStep>
        <disposition>urn:epcglobal:cbv:disp:in_progress</disposition>
        <readPoint>
          <id>urn:epc:id:sgln:456724.000001.0</id>
        </readPoint>
        <bizLocation>
          <id>urn:epc:id:sgln:456724.000001.0</id>
```

```
</bizLocation>
<bizTransactionList>
  <bizTransaction type="urn:epcglobal:cbv:btt:po">
urn:epcglobal:cbv:bt:3333331013655:P0303006</bizTransaction>
  <bizTransaction
type="urn:epcglobal:cbv:btt:desadv">urn:epcglobal:cbv:bt:2222224043588:D70302</bizTran
saction>
  </bizTransactionList>
</ObjectEvent>
</EventList>
</EPCISBody>
</epcis:EPCISDocument>
```

4.3.2.4 EPCIS Decommission Event

Content from example	Explanation	Mandatory/ Optional/ Conditional
<code><ObjectEvent></code>	ObjectEvent: represents an event on one or more physical or digital objects. For commissioning and decommissioning of serialization items (Item level) is always <code>ObjectEvent</code>	M
<code><eventTime>2016-04-28T19:26:45Z</eventTime></code> <code><eventTimeZoneOffset>-06:00</eventTimeZoneOffset></code>	EventTime: 2016-04-28T19:26:45Z is the time when the event was created. -06:00 is the time difference with UTC	M
<code><epcList></code> <code><epc>urn:epc:id:sgtin:0365250.026620.000000006731</epc></code> Or <code><epc>(01)10012345337007(21)000000002158</epc></code> <code></epcList></code>	Unique Identifier: URN format or GS1 element string format can be used GS1-format using application identifiers for GTIN (01) and serial number (21) can to be used	M
<code><action>DELETE</action></code>	Action type: says how an event relates to the lifecycle of the entity being described For decommissioning event: always <code>DELETE</code>	M
<code><bizStep>urn:epcglobal:cbv:bizstep:decommissioning</bizStep></code>	Business Step: identifies what was taking place from a business perspective at the time of the event. For decommissioning event bizstep is always <code>decommissioning</code>	M
<code><disposition>urn:epcglobal:cbv:disp:inactive</disposition></code>	Disposition: identifies the business condition subsequent to the event of the physical or digital objects named. For decommissioning event disposition is always <code>inactive</code> http://www.gs1.org/sites/default/files/docs/epc/cbv_1_1-standard-20140520.pdf See Page 26 from the above link for a list of dispositions. For 3PL decommissioning events, see Section 2.3.1.2.	M

Content from example	Explanation	Mandatory/ Optional/ Conditional
<pre> <readPoint> <id>urn:epc:id:sgln:0353755.00000.0</id> </readPoint> </pre>	The Read Point is the location where the event took place, for example, the SGLN.	M
<pre> <bizLocation> <id>urn:epc:id:sgln:0353755.00000.0</id> </bizLocation> </pre>	The Business Location is the location where the object(s) is now considered to reside until a subsequent event takes place, for example, a manufacturing site SGLN.	O
<pre> <SAPEExtension> <objAttributes> <DATMF>20170127</DATMF> <LOTNO>DSAD</LOTNO> <DATEX>20170421</DATEX> <REAS_CODE>DEFECT</REAS_CODE> </objAttributes> </SAPEExtension> </pre>	Each Object Event Should have only one SAPEExtension Segment Within the SAP Extension, - DATMF is always the Date of Manufacture, in the format YYYYMMDD and always 8 digits. - LOTNO is always the lot/batch number and must not exceed 20 characters. - DATEX is always the Expiry date YYYYMMDD and always 8 digits. REAS_CODE depends on MAH requirements.	C

4.3.3 EPCIS Body for Aggregation Events

Within the EPCIS body an event list can be defined consisting of object events, aggregation events and transaction events. Multiple events with different event type can be listed within the EPCIS body of the same message.

This section covers Aggregation Events only. Transaction events are not covered in this version of the specification.

4.3.3.1 EPCIS Aggregation/Packing Event

Content from example	Explanation	M/O/R
<code><AggregationEvent></code>	Represents an event to one or more objects that are physically aggregated together (physically constrained in the same place at the same time, as when cases are aggregated to a pallet). Aggregation reflects the packaging hierarchy of for example, units in bundles, bundles in cases and cases on a pallet.	M
<code><eventTime>2016-04-28T19:26:45Z</eventTime></code> <code><eventTimeZoneOffset>-06:00</eventTimeZoneOffset></code>	2016-04-28T19:26:45Z is the time when the event was created. -06:00 is the time difference with UTC	M
<code><parentID></code> urn:epc:id:sscc:9300055.0000000028 Or urn:epc:id:sgtin:0365250.026620.000000006731 or (01)10012345337007(21)00000002158 <code></parentID></code>	The parent ID depicts the parent unit into which the children are being packed. The parent can be an SSCC or a EPC. Both can be defined via the URN format or GS1-format using application identifiers for GTIN (01) and serial number (21) or SSCC (00) respectively.	M
<code><childEPCs></code> <code><epc>urn:epc:id:sgtin:0365250.026620.000000006731</epc></code> Or <code><epc>(01)10012345337007(21)00000002158</epc></code> <code></childEPCs></code>	urn:epc:id:sgtin:0365250.026620.000000006731 represents the ID. ID can be with the GS1 application identifiers (01) and (21) (01)10012345337007(21)00000002158. *Note that the Hub does not convert the urn format to GS1 and vice-versa. So the data that would be sent to the network shall remain the same	M
<code><action>ADD</action></code>	Action type: describes how an event relates to the lifecycle of the entity described For packing it is always ADD	M

Content from example	Explanation	M/O/R
<pre><bizStep>urn:epcglobal:cbv:bizstep: packing</bizStep></pre>	Business Step: identifies what was taking place from a business perspective at the time of the event. For packaging, for example, an aggregation event ADD use packing	M
<pre><readPoint> <id>urn:epc:id:sgln:0353755.00000.0 </id> </readPoint></pre>	The Read Point is the location where the event took place, for example, the SGLN.	M
<pre><bizLocation> <id>urn:epc:id:sgln:0353755.00000.0 </id> </bizLocation></pre>	The business Location is the location where the object(s) now resides until a subsequent event takes place, for example a manufacturing site SGLN.	M

4.3.3.2 EPCIS Deaggregation/UnpackEvent

Content from example	Explanation	M/O/R
<pre><AggregationEvent></pre>	Represents an event to one or more objects that are physically aggregated together (physically constrained in the same place at the same time, as when cases are aggregated to a pallet). Aggregation reflects the packaging hierarchy of for example, units in bundles, bundles in cases and cases on a pallet.	M
<pre><eventTime>2016-04-28T19:26:45Z</eventTime> <eventTimeZoneOffset>-06:00</eventTimeZoneOffset></pre>	2016-04-28T19:26:45Z is the time when the event was created. -06:00 is the time difference with UTC	M
<pre><parentID> urn:epc:id:sscc:9300055.00000000 28 Or urn:epc:id:sgtin:0365250.026620. 000000006731 or (01)10012345337007(21)000000002158 </parentID></pre>	The parent ID depicts the parent unit into which the children are being packed. The parent can be an SSCC or a EPC. Both can be defined via the URN format or GS1-format using application identifiers for GTIN (01) and serial number (21) or SSCC (00) respectively.	M

Content from example	Explanation	M/O/R
<pre> <childEPCs> <epc>urn:epc:id:sgtin:0365250.02662 0.000000006731</epc> Or <epc>(01)10012345337007(21)000000002158</epc> > </childEPCs> </pre>	urn:epc:id:sgtin:0365250.026620.000000006731 represents the ID. ID can be with the GS1 application identifiers (01) and (21) (01)10012345337007(21)000000002158. *Note that the Hub does not convert the urn format to GS1 and vice-versa. So the data that would be sent to the network shall remain the same	M
<pre> <action>DELETE</action> </pre>	Action type: describes how an event relates to the lifecycle of the entity described For unpacking it is always DELETE	M
<pre> <bizStep>urn:epcglobal:cbv:bizstep: unpacking</bizStep> </pre>	Business Step: identifies what was taking place from a business perspective at the time of the event. For unpacking, for example, an aggregation event DELETE use unpacking	M
<pre> <readPoint> <id>urn:epc:id:sgln:0353755.00000.0 </id> </readPoint> </pre>	The Read Point is the location where the event took place, for example, the SGLN.	M
<pre> <bizLocation> <id>urn:epc:id:sgln:0353755.00000.0 </id> </bizLocation> </pre>	The business Location is the location where the object(s) now resides until a subsequent event takes place, for example a manufacturing site SGLN.	O

4.4 Message Specifications – Important Considerations

This section describes important message format considerations.

4.4.1 Header Information: Identifiers for Sender and Receiver

The EPCIS Standard Business Document Header is used for the Sender/Receiver Identifier.



The receiver ID identifies the MAH. See the MAH specific supplement.

```
<?xml version="1.0" encoding="UTF-8" ?>
<epcis:EPCISDocument creationDate="2016-08-11T16:44:24Z" schemaVersion="1.1"
xmlns:epcis="urn:epcglobal:epcis:xsd:1" xmlns:gslushc="http://epcis.gslus.org/hc/ns"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
  <EPCISHeader>
    <n1:StandardBusinessDocumentHeader
xmlns:n1="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
      <n1:HeaderVersion>1.0</n1:HeaderVersion>
      <n1:Sender>
        <n1:Identifier Authority="SGLN">1234567890123</n1:Identifier>
      </n1:Sender>
      <n1:Receiver>
        <n1:Identifier Authority="SGLN">7612790098765</n1:Identifier>
      </n1:Receiver>
      <n1:DocumentIdentification>
        <n1:Standard>EPCglobal</n1:Standard>
        <n1:TypeVersion>1.0</n1:TypeVersion>
        <n1:InstanceIdentifier>005056BA6ACA1ED5B0E9C0665D4063C1</n1:InstanceIdentifier>
        <n1:Type>Events</n1:Type>
        <n1:CreationDateAndTime>2016-01-25T10:25:53.940923Z</n1:CreationDateAndTime>
      </n1:DocumentIdentification>
    </n1:StandardBusinessDocumentHeader>
  </EPCISHeader>
```

4.4.2 ADD for Commissioning Event

The Object Event with an action “ADD” indicates the commissioning event. All <epc> under the ADD event are taken as items for commissioning. The action is mandatory. An example follows for an Object Event with Action “ADD” and <bizStep> commissioning and <disposition> active.

```
<?xml version="1.0" encoding="UTF-8" ?>
<epcis:EPCISDocument creationDate="2016-08-11T16:44:24Z"
schemaVersion="1.1" xmlns:epcis="urn:epcglobal:epcis:xsd:1"
xmlns:gslushc="http://epcis.gslus.org/hc/ns"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
<EPCISHeader>
  <n1:StandardBusinessDocumentHeader
xmlns:n1="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
    <n1:HeaderVersion>1.0</n1:HeaderVersion>
    <n1:Sender>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Sender>
    <n1:Receiver>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Receiver>
    <n1:DocumentIdentification>
      <n1:Standard>EPCglobal</n1:Standard>
      <n1:TypeVersion>1.0</n1:TypeVersion>
      <n1:InstanceIdentifier>005056BA6ACA1ED5B0E9C0665D4063C1
      </n1:InstanceIdentifier>
      <n1:Type>Events</n1:Type>
      <n1:CreationDateAndTime>2016-01-25T10:25:53Z
      </n1:CreationDateAndTime>
    </n1:DocumentIdentification>
  </n1:StandardBusinessDocumentHeader>
</EPCISHeader>
<EPCISBody>
  <EventList>
    <ObjectEvent>
      <eventTime>2016-08-11T16:44:23Z</eventTime>
      <eventTimeZoneOffset>+01:00</eventTimeZoneOffset>
      <epcList>
        <epc>urn:epc:id:sgtin:030781.0572010.15100100000042</epc>
        <epc>urn:epc:id:sgtin:030781.0572010.15100100000043</epc>
        <epc>urn:epc:id:sgtin:030781.0572010.15100100000044</epc>
      </epcList>
    </ObjectEvent>
  </EventList>
</EPCISBody>
</EPCISDocument>
```

```

    </epcList>
    <action>ADD</action>
    <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
    <disposition>urn:epcglobal:cbv:disp:active</disposition>
    <readPoint>
        <id>urn:epc:id:sgln:456724.000001.0</id>
    </readPoint>
    <bizLocation>
        <id>urn:epc:id:sgln:456724.000001.0</id>
    </bizLocation>
    <SAPEExtension>
        <objAttributes>
            <DATMF>20160621</DATMF>
            <LOTNO>DSAD</LOTNO>
            <DATEX>20170621</DATEX>
            <GTIN>67232791391603</GTIN>
        </objAttributes>
    </SAPEExtension>
</ObjectEvent>
</EventList>
</EPCISBody>
</epcis:EPCISDocument>

```

4.4.3 DELETE Decommissioning Event

In the case where a unit is destroyed or removed, for example, sampling before shipping, a corresponding decommissioning event must be posted. An MAH expects the message to include serialization data for what is shipped. An example follows for an Object Event with Action "DELETE" and <bizStep> decommissioning and <disposition> inactive.

```

<?xml version="1.0" encoding="UTF-8" ?>
<epcis:EPCISDocument creationDate="2016-08-11T16:44:24Z"
schemaVersion="1.1" xmlns:epcis="urn:epcglobal:epcis:xsd:1"
xmlns:gslushc="http://epcis.gslus.org/hc/ns"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
<EPCISHeader>
    <n1:StandardBusinessDocumentHeader
xmlns:n1="http://www.unece.org/cefact/namespaces/StandardBusinessDocume
ntHeader">
        <n1:HeaderVersion>1.0</n1:HeaderVersion>
        <n1:Sender>

```

```

        <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Sender>
    <n1:Receiver>
        <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Receiver>
    <n1:DocumentIdentification>
        <n1:Standard>EPCglobal</n1:Standard>
        <n1:TypeVersion>1.0</n1:TypeVersion>
        <n1:InstanceIdentifier>005056BA6ACA1ED5B0E9C0665D4063C1
        </n1:InstanceIdentifier>
        <n1:Type>Events</n1:Type>
        <n1:CreationDateAndTime>2016-01-25T10:25:53Z
        </n1:CreationDateAndTime>
    </n1:DocumentIdentification>
</n1:StandardBusinessDocumentHeader>
</EPCISHeader>
<EPCISBody>
    <EventList>
        <ObjectEvent>
            <eventTime>2016-08-11T16:44:23Z</eventTime>
            <eventTimeZoneOffset>+01:00</eventTimeZoneOffset>
            <epcList>
                <epc>urn:epc:id:sgtin:030781.0572010.15100100000042</epc>
                <epc>urn:epc:id:sgtin:030781.0572010.15100100000043</epc>
            </epcList>
            <action>DELETE</action>
            <bizStep>urn:epcglobal:cbv:bizstep:decommissioning</bizStep>
            <disposition>urn:epcglobal:cbv:disp:inactive</disposition>
            <readPoint>
                <id>urn:epc:id:sgln:456724.000001.0</id>
            </readPoint>
            <bizLocation>
                <id>urn:epc:id:sgln:456724.000001.0</id>
            </bizLocation>
            <SAPEExtension>
                <objAttributes>
                    <DATMF>20160621</DATMF>
                    <LOTNO>DSAD</LOTNO>
                    <DATEX>20170621</DATEX>
                    <REAS_CODE>DEFECT</REAS_CODE>
                </objAttributes>
            </SAPEExtension>
        </ObjectEvent>
    </EventList>
</EPCISBody>
</EPCISMessage>

```

```
        </SAPExtension>
      </ObjectEvent>
    </EventList>
  </EPCISBody>
</epcis:EPCISDocument>
```

4.4.4 OBSERVE for Shipping Event

Sample message for OBSERVE Shipping Event:

```
<?xml version="1.0" encoding="UTF-8" ?>
<epcis:EPCISDocument creationDate="2016-08-11T16:44:24Z"
schemaVersion="1.1" xmlns:epcis="urn:epcglobal:epcis:xsd:1"
xmlns:gslushc="http://epcis.gslus.org/hc/ns"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
<EPCISHeader>
  <n1:StandardBusinessDocumentHeader
xmlns:n1="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
    <n1:HeaderVersion>1.0</n1:HeaderVersion>
    <n1:Sender>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Sender>
    <n1:Receiver>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Receiver>
    <n1:DocumentIdentification>
      <n1:Standard>EPCglobal</n1:Standard>
      <n1:TypeVersion>1.0</n1:TypeVersion>
      <n1:InstanceIdentifier>005056BA6ACA1ED5B0E9C0665D4063C1
      </n1:InstanceIdentifier>
      <n1:Type>Events</n1:Type>
      <n1:CreationDateAndTime>2016-01-25T10:25:53Z
      </n1:CreationDateAndTime>
    </n1:DocumentIdentification>
  </n1:StandardBusinessDocumentHeader>
</EPCISHeader>
<EPCISBody>
  <EventList>
    <ObjectEvent>
      <eventTime>2016-12-09T13:45:16Z</eventTime>
      <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
      <epcList>
        <epc>urn:epc:id:sscc:030123.00000001399</epc>
      </epcList>
      <action>OBSERVE</action>
      <bizStep>urn:epcglobal:cbv:bizstep:shipping</bizStep>
```

```
<disposition>urn:epcglobal:cbv:disp:in_transit</disposition>
<readPoint>
  <id>urn:epc:id:sgln:030123.000001.0</id>
</readPoint>
<bizLocation>
  <id>urn:epc:id:sgln:030123.000001.0</id>
</bizLocation>
<bizTransactionList>
  <bizTransaction type="urn:epcglobal:cbv:btt:po">urn:epcglobal:cbv:bt:
    0095981000019:0600022733</bizTransaction>
</bizTransactionList>
</ObjectEvent>
</EventList>
</EPCISBody>
</epcis:EPCISDocument>
```

4.4.5 Packing for Aggregation Event

Sample message for a packing Aggregation Event:

```
<?xml version="1.0" encoding="UTF-8" ?>
<epcis:EPCISDocument creationDate="2016-08-11T16:44:24Z"
schemaVersion="1.1" xmlns:epcis="urn:epcglobal:epcis:xsd:1"
xmlns:gslushc="http://epcis.gslus.org/hc/ns"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
<EPCISHeader>
  <n1:StandardBusinessDocumentHeader
xmlns:n1="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
    <n1:HeaderVersion>1.0</n1:HeaderVersion>
    <n1:Sender>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Sender>
    <n1:Receiver>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Receiver>
    <n1:DocumentIdentification>
      <n1:Standard>EPCglobal</n1:Standard>
      <n1:TypeVersion>1.0</n1:TypeVersion>
      <n1:InstanceIdentifier>005056BA6ACA1ED5B0E9C0665D4063C1
</n1:InstanceIdentifier>
      <n1:Type>Events</n1:Type>
      <n1:CreationDateAndTime>2016-01-25T10:25:53Z
</n1:CreationDateAndTime>
    </n1:DocumentIdentification>
  </n1:StandardBusinessDocumentHeader>
</EPCISHeader>
<EPCISBody>
  <EventList>
    <AggregationEvent>
      <eventTime>2014-05-07T16:05:10Z</eventTime>
      <eventTimeZoneOffset>-04:00</eventTimeZoneOffset>
      <parentID>urn:epc:id:sscc:030143.00000006433</parentID>
      <childEPCs>
        <epc>urn:epc:id:sgtin:030781.0572010.15100100000042</epc>
        <epc>urn:epc:id:sgtin:030781.0572010.15100100000043</epc>
        <epc>urn:epc:id:sgtin:030781.0572010.15100100000044</epc>
      </childEPCs>
    </AggregationEvent>
  </EventList>
</EPCISBody>
</EPCISDocument>
```

```
</childEPCs>
<action>ADD</action>
<bizStep>urn:epcglobal:cbv:bizstep:packing</bizStep>
<bizLocation>
  <id>urn:epc:id:sgln:0012345.00003.0</id>
</bizLocation>
<readPoint>
  <id>urn:epc:id:sgln:012349.111111.0</id>
</readPoint>
</AggregationEvent>
</EventList>
</EPCISBody>
</epcis:EPCISDocument>
```

4.4.6 Unpacking for Deaggregation Event

Sample message for an Unpacking Deaggregation Event:

```
<?xml version="1.0" encoding="UTF-8" ?>
<epcis:EPCISDocument creationDate="2016-08-11T16:44:24Z"
schemaVersion="1.1" xmlns:epcis="urn:epcglobal:epcis:xsd:1"
xmlns:gslushc="http://epcis.gslus.org/hc/ns"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
<EPCISHeader>
  <n1:StandardBusinessDocumentHeader
xmlns:n1="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
    <n1:HeaderVersion>1.0</n1:HeaderVersion>
    <n1:Sender>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Sender>
    <n1:Receiver>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Receiver>
    <n1:DocumentIdentification>
      <n1:Standard>EPCglobal</n1:Standard>
      <n1:TypeVersion>1.0</n1:TypeVersion>
      <n1:InstanceIdentifier>005056BA6ACA1ED5B0E9C0665D4063C1
</n1:InstanceIdentifier>
      <n1:Type>Events</n1:Type>
      <n1:CreationDateAndTime>2016-01-25T10:25:53Z
</n1:CreationDateAndTime>
    </n1:DocumentIdentification>
  </n1:StandardBusinessDocumentHeader>
</EPCISHeader>
<EPCISBody>
  <EventList>
    <AggregationEvent>
      <eventTime>2014-05-13T17:40:10Z</eventTime>
      <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
      <parentID>urn:epc:id:sscc:030143.00000006433</parentID>
      <childEPCs>
        <epc>urn:epc:id:sgtin: 1234567.009005.100000000048</epc>
      </childEPCs>
      <action>DELETE</action>
    </AggregationEvent>
  </EventList>
</EPCISBody>
</EPCISDocument>
```

```
<bizStep>urn:epcglobal:cbv:bizstep:unpacking</bizStep>
<bizLocation>
  <id>urn:epc:id:sgln: 0123491.00001.0</id>
</bizLocation>
<readPoint>
  <id>urn:epc:id:sgln: 0123491.00001.0</id>
</readPoint>
</AggregationEvent>
</EventList>
</EPCISBody>
</epcis:EPCISDocument>
```

4.4.7 Event Time

The event time (commissioning event time) is made available on the EPCIS message. The `eventTime` indicates when the object event happened. The `eventTimeZoneOffset` indicates that the event happened in a time zone with +01:00h time difference to UTC.

```
<ObjectEvent>  
<eventTime>2016-08-11T16:44:23.3666130Z</eventTime>  
<eventTimeZoneOffset>+01:00</eventTimeZoneOffset>
```

4.4.8 SAP Extension

SAP Extension is used to define the following:

Element	Tag	Example
Manufacture Date	<DATMF>	20160101
Batch/Lot No	<LOTNO>	OWN200801
Expiry Date	<DATEX>	20170811
Reason Code	<REAS_CODE>	DEFECT
Global Transfer Item Number	<GTIN>	67890791391123
Packaging Level	<PACKAGINGLEVEL>	PL
MATNR	<MATNR>	12345678

The SAP Extension structure should contain the elements in the above table, as follows:

```
<SAPExtension>
  <objAttributes>
    <DATMF>20160101</DATMF>
    <LOTNO>DSAD</LOTNO>
    <DATEX>20170621</DATEX>
    <REAS_CODE>DEFECT</REAS_CODE>
    <GTIN>67123491391608</GTIN>
    <PACKAGINGLEVEL>PL</PACKAGINGLEVEL>
    <MATNR>12345678</MATNR>
  </objAttributes>
</SAPExtension>
```

Note

Each Object Event should have only one SAPExtension Segment.

You must send each commissioning file with homogeneous batch data. Homogeneous batch data means that each commissioning file contains the serialized items that have the same Batch/Lot No.

4.4.9 Container Commissioning

A container commissioning example follows.

```
<?xml version="1.0" encoding="UTF-8" ?>
<epcis:EPCISDocument creationDate="2016-08-11T16:44:24Z"
schemaVersion="1.1" xmlns:epcis="urn:epcglobal:epcis:xsd:1"
xmlns:gslushc="http://epcis.gslus.org/hc/ns"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
<EPCISHeader>
  <n1:StandardBusinessDocumentHeader
xmlns:n1="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
    <n1:HeaderVersion>1.0</n1:HeaderVersion>
    <n1:Sender>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Sender>
    <n1:Receiver>
      <n1:Identifier Authority="GLN">XXXXXXXXXXXX</n1:Identifier>
    </n1:Receiver>
    <n1:DocumentIdentification>
      <n1:Standard>EPCglobal</n1:Standard>
      <n1:TypeVersion>1.0</n1:TypeVersion>
      <n1:InstanceIdentifier>005056BA6ACA1ED5B0E9C0665D4063C1
      </n1:InstanceIdentifier>
      <n1:Type>Events</n1:Type>
      <n1:CreationDateAndTime>2016-01-25T10:25:53Z
      </n1:CreationDateAndTime>
    </n1:DocumentIdentification>
  </n1:StandardBusinessDocumentHeader>
</EPCISHeader>
<EPCISBody>
  <EventList>
    <ObjectEvent>
      <eventTime>2014-05-05T14:25:39Z</eventTime>
      <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
      <epcList>
        <epc>urn:epc:id:sscc:0350458.0000041128</epc>
        <epc>urn:epc:id:sscc:0350458.0000041128</epc>
        <epc>urn:epc:id:sscc:0350458.0000041128</epc>
      </epcList>
      <action>ADD</action>
    </ObjectEvent>
  </EventList>
</EPCISBody>
</EPCISDocument>
```

```
<bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
<disposition>urn:epcglobal:cbv:disp:active</disposition>
<readPoint>
  <id>urn:epc:id:sgln:456724.000001.0</id>
</readPoint>
<bizLocation>
  <id>urn:epc:id:sgln:456724.000001.0</id>
</bizLocation>
</ObjectEvent>
</EventList>
</EPCISBody>
</epcis:EPCISDocument>
```

5 Files

The files in this section are available at the bottom of the SAP Traceability Hub [Help Page](#).

5.1 Asynchronous Serial Number Request XSD

- Async_Serial_Number_Request_XSD

5.1.1 Asynchronous Sample XML Serial Number Request Range

- Async_SAP_SerialNumber_Request_Range_CHINA_ANIMAL
- Async_SAP_SerialNumber_Request_Range_CHINA_HUMAN
- Async_SAP_SerialNumber_Request_Range_GTIN
- Async_SAP_SerialNumber_Request_Range_SSCC

5.1.2 Asynchronous Sample XML Serial Number Response Range

- Async_SAP_SerialNumber_Response_Range_CHINA_ANIMAL
- Async_SAP_SerialNumber_Response_Range_CHINA_HUMAN
- Async_SAP_SerialNumber_Response_Range_GTIN
- Async_SAP_SerialNumber_Response_Range_SSCC

5.2 Asynchronous Serial Number Response XSD

- Async_Serial_Number_Response_XSD

5.2.1 Asynchronous Sample XML Serial Number Request List

- Async_SAP_Serialnumber_Request_List_CHINA_ANIMAL
- Async_SAP_Serialnumber_Request_List_CHINA_HUMAN
- Async_SAP_Serialnumber_Request_List_GTIN

-
- Async_SAP_SerialNumber_Request_List_GTIN_Crypto
 - Async_SAP_SerialNumber_Request_List_SSCC

5.2.2 Asynchronous Sample XML Serial Number Response List

- Async_SAP_SerialNumber_Response_List_CHINA_ANIMAL
- Async_SAP_SerialNumber_Response_List_CHINA_HUMAN
- Async_SAP_SerialNumber_Response_List_GTIN
- Async_SAP_SerialNumber_Response_List_GTIN_Crypto
- Async_SAP_SerialNumber_Response_List_SSCC

5.3 Synchronous Serial Number Request and Response WSDL

- Sync_SI_SerialNumberRequestResponse

5.3.1 Synchronous Sample XML Serial Number Request Range

- Sync_SAP_SerialNumber_Request_Range_CHINA_ANIMAL
- Sync_SAP_SerialNumber_Request_Range_CHINA_HUMAN
- Sync_SAP_SerialNumber_Request_Range_GTIN
- Sync_SAP_SerialNumber_Request_Range_SSCC

5.3.2 Synchronous Sample XML Serial Number Response Range

- Sync_SAP_SerialNumber_Response_Range_CHINA_ANIMAL
- Sync_SAP_SerialNumber_Response_Range_CHINA_HUMAN
- Sync_SAP_SerialNumber_Response_Range_GTIN
- Sync_SAP_SerialNumber_Response_Range_SSCC

5.3.3 Synchronous Sample XML Serial Number Request List

- Sync_SAP_SerialNumber_request_List_CHINA_ANIMAL
- Sync_SAP_SerialNumber_request_List_CHINA_HUMAN
- Sync_SAP_SerialNumber_request_List_GTIN

-
- Sync_SAP_SerialNumber_Request_List_GTIN_Crypto
 - Sync_SAP_SerialNumber_request_List_SSCC

5.3.4 Synchronous Sample XML Serial Number Response List

- Sync_SAP_SerialNumber_Response_List_CHINA_ANIMAL
- Sync_SAP_SerialNumber_Response_List_CHINA_HUMAN
- Sync_SAP_SerialNumber_Response_List_GTIN
- Sync_SAP_SerialNumber_Response_List_GTIN_Crypto
- Sync_SAP_SerialNumber_Response_List_SSCC

5.4 EPCIS 1.1 XSD

- Sync_EPCIS_1.1_27092017
- Sync_EPCglobal
- Sync_StandardBusinessDocumentHeader

5.4.1 Sample EPCIS XML Message

- SAP_Commission_Container
- SAP-Decommission
- SAP_Unpacking
- SAP_Commission_Packing_Shipping
- SAP_Receiving
- SAP_3PL-Decommissioning

5.5 References

[EPCIS](#)

6 Important Disclaimers and Legal Information

6.1 Coding Samples

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