

Technical Guide for Manufacturers

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1 Document Control

1.1 Version History Main Approval

Version	Date	Description of Change	Author / Company
1.0	20-Aug-2021	Initial Release.	Movilitas
2.0	10-Feb-2022	INCO Terms: 3PL Import Role.	Movilitas
3.0	17-Mar-2022	Corrections and clarification.	Movilitas

Table 1 Version History Main Approvals

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2 Introduction

The UAE's Governmental department for healthcare and prevention - MoHAP has published legislation that defines the Serialisation and Track and Trace (T&T) requirements for all participants involved in manufacturing, distributing and dispensing pharmaceutical products. This legislation:

- Defines the specific categories of products relevant to the legislation.
- Applies to the entirety of the UAE territory.
- It becomes effective:
 - Immediately prior to foreign product importation into the UAE.
 - Immediately prior to domestic manufacture release into the UAE.
- Concludes with dispensing to patients / consumers.
- Manages exceptions such as batch recalls.

This legislation is driven by the need to maintain and improve patient safety whilst at the same time reduce counterfeits within the UAE.

Tatmeen is the Information Technology (IT) regulatory system that will support the UAE T&T legislation to the pharmaceutical industry. All products placed on the UAE market need to display a serialised unique identifier on the product secondary packaging. Also aggregated packaging (aggregated homogenous products or logistics unit) must display a serialised unique identifier. The appropriate serialised identifiers must be used to record the operational and transactional movements of the products throughout the supply chain and during dispensing to the patient / consumer.

The information recorded by the participants must be transmitted to the Tatmeen traceability system where it is stored. The stored data is made available for regulatory purposes to the authorities of the UAE MoHAP departments.

2.1 Target Participants

The following stakeholders / participants for the Section 2.2 in-scope processes are responsible for collecting serialised product item traceability records during the manufacture of pharmaceutical products.

Participant	Description
3PL	<p>The Third Party Logistics (3PL) participant is a logistics partner that is:</p> <ul style="list-style-type: none"> Physically located outside the UAE, and/or Located in the UAE Free Trade Zone, and/or Registered with GS1 as a 3PL partner. <p>Similar to a Distributor, they may participate with handling and storing imported products immediately prior to the customs clearance process. This is based on the product delivery Incoterms.</p>
Batch Releaser	Manufacturing organisation or organisation where the finished product release activity is taking place as approved by MoHAP. During product registration, each company submits to the MoHAP Team the identity of the Batch Releaser.
CMO	Contracted Manufacturing Organisation (CMO) is a manufacturing entity that produces pharmaceutical products on behalf of the MAH. A CMO is a specific case of a foreign manufacturer.
Distributor	The Distributor is a supply chain partner representing a location for storing medical product and can have a MoHAP license for medical product importation; distribution storage.
Domestic Manufacturer	A domestic manufacture is a manufacturing entity located in the UAE supplying goods to the UAE market. A domestic manufacturer may also be the MAH.
Foreign Manufacturer	A foreign manufacturer is a manufacturing entity outside the UAE that produces goods for importation into the UAE. A foreign manufacturer may also be the MAH.
Licensing Agent	Foreign international manufacturers are supported by UAE local agents who complete registration and customs declarations.
MAH	Marketing Authorisation Holder is the company or other legal entity that has the authorization granted by MoHAP to market a medicine in the UAE.

Table 2 Document Stakeholders

2.2 Scope of Document

The purpose of this document is to define the information that must be sent under the MoHAP regulations to the Tatmeen traceability system by supply chain participants for the following processes:

1. Importation to UAE.
 - a. Registered drugs
 - b. Unregistered drugs
2. Domestic Manufacturing for UAE.
 - a. Registered drugs

2.3 Document Structure

The document follows the outline in Table 3.

Section	Content
Section 2	Introduction and Context.
Section 3	Message guidelines and specifications: <ul style="list-style-type: none"> • EPCIS message events. • EPCIS message status.
Section 4	Technical API Guidelines, providing usage guidelines for the technical API to submit data to the Tatmeen traceability system.

Table 3 Document Structure

2.4 Prerequisites

Please refer to the Technical Onboarding Guide to ensure the following prerequisites are met:

- Product Registration (Registered Drugs):

All products subject to the UAE MoHAP legislation are initially registered with MoHAP and the registration details completed.

The MAH or domestic manufacturer is the partner approved by MoHAP for importing or domestically manufacturing the medical product. In many cases, the MAH delegates the daily operations for product importation to a technical partner; however, it must still retain accountability and responsibility for registered product importation.

- Each product master is always associated with a single MAH.

- Each product master is always assigned a single Agent.

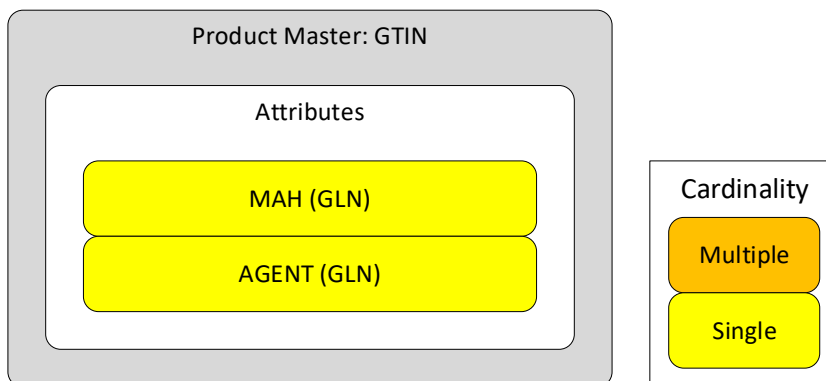


Figure 1 Product Master Partners

- Product Registration (Unregistered Drugs):

Unregistered products should be in BrandSync prior to arrival into the UAE market. The details of this information shall be issued with a later version of this document.

- Entity Registration:

- All domestic manufacturers are registered with the relevant MoHAP department and should be allocated a GS1 Global Location Number (GLN). There is no need for any foreign manufacturers (i.e., “Batch Releaser”) to register as they are not reporting directly to the Tatmeen solution.
- All MAH and Licensing Agents should be registered and allocated a GS1 Global Location Number (GLN).
- All Distributors (and relevant 3PLs) involved in the importation of goods should be registered as supply chain partners and allocated a GS1 Global Location Number (GLN).

3 Message Guidelines

This section describes the messaging responsibilities of the participants for the processes in Section 2.1:

- Importation of foreign manufactured product items into the UAE:
 - Importation of foreign manufactured registered drugs.
 - Importation of foreign manufactured unregistered drugs (this will be documented in a future version of the document).
- Domestic or local manufacture within the UAE.

The following general principles for stakeholders in Section 2.1 reporting to the Tatmeen solution to meet the MoHAP legislation are:

- Foreign manufacture of serialised products and physical movement of serialised products outside the UAE do not require submitting messages at the time of the event. However, the foreign entities (Batch Releaser and 3PL) must keep adequate records to support this technical guide.
- Messages that are sent to the Tatmeen platform must be constructed according to the GS1 EPCIS standards defined in this technical guide.
- Messaging between foreign partners is not defined in this technical guide and remains the responsibility of the partner entities to mutually define.

3.1 Importation of Registered Drugs

This section describes the reporting scenario for importation of foreign manufactured registered products into the UAE market. Arrival of medical products into the UAE Free-Trade Zone territory does not constitute importation until the importation is specifically initiated into the UAE market.

The MAH is the partner entity that is responsible to report the importation of manufactured pharmaceutical products against a valid Shipping Import Permit. The MAH may designate a delegated technical partner to conduct the technical level reporting. The responsibility for this reporting remains with the MAH. This importation reporting registers the serialised objects that will be imported before initiating the import clearance and customs release processes. All serialised pharmaceutical products subject to MoHAP legislation must not enter the UAE market without having completed this reporting.

There are two supply chain routes described in the diagrams below:

- Registered Drug Importation using 3PL partners (Figure 2).
- Registered Drug Importation directly to Distributor (Figure 3).

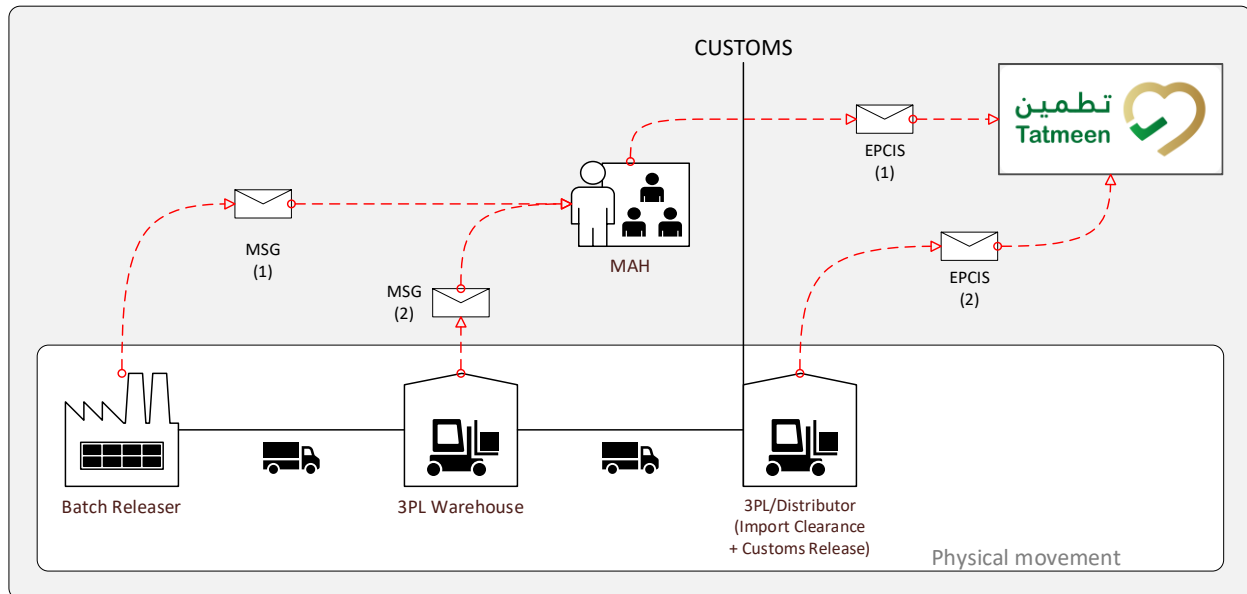


Figure 2 Importing Registered Drugs from International Manufacturers Using 3PL

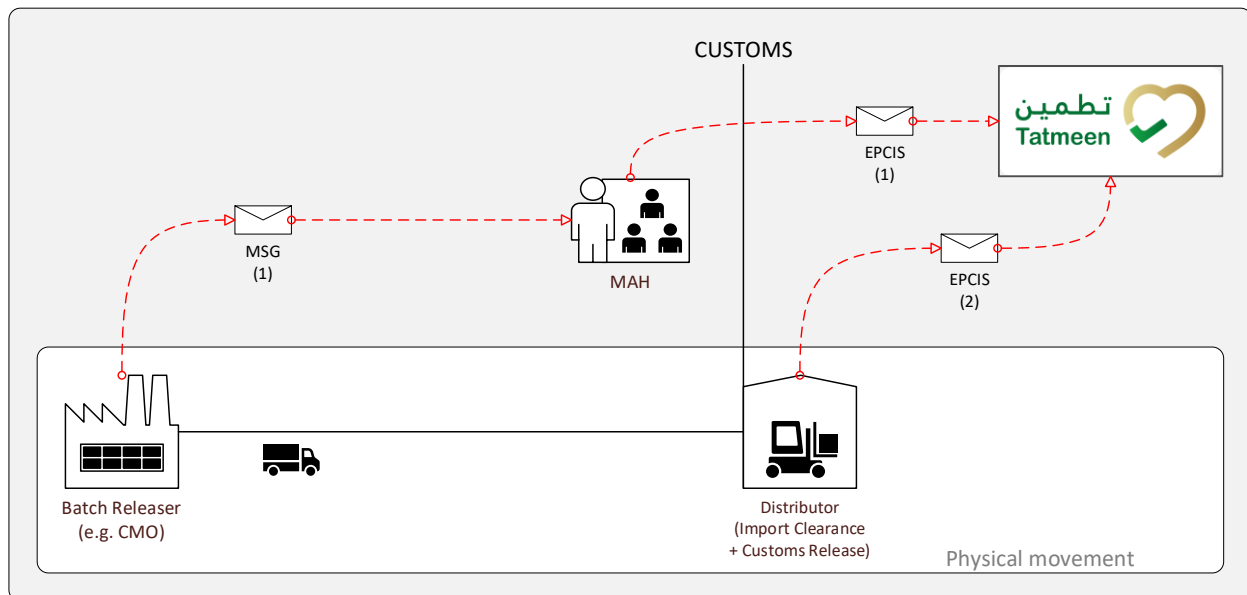


Figure 3 Importing Registered Drugs from International Manufacturers Directly to UAE Distributor

3.1.1 Business Process Outline

This outline refers to both Figure 2 and Figure 3, above.

1. The MAH must obtain the Shipping Import Permit for the serialised products identified for importation into the UAE. Where use is made of the Licensing Agent to obtain the Shipping Import Permit, they are responsible for sharing those details with the MAH.
 - a. The Shipping Import Permit contains the product GTIN identifiers for products that are intended to be imported.
 - b. Each product GTIN item on the Shipping Import Permit is valid for a maximum quantity.
 - c. Partial shipment of products listed on the Shipping Import Permit is permitted. However, the total accumulated quantity of GTIN identified product that is published on the Shipping Import Permit must not be exceeded.
2. The Batch Releaser manufactures serialised products and maintains their own records regarding serialised product items, the parent / child relationships of any aggregated product hierarchies, and shipping of those items to another entity. These record details are required to meet the message specifications in Section 4. The foreign manufacturer must also share these records with their relevant MAH prior to importation of those product items into the UAE (see “MSG (1)” in Figure 2 / Figure 3).
3. Any foreign supply chain partner involved with physical storage or movement of serialised product items prior to importation must maintain their own records regarding serialised product items, the parent / child relationships of any aggregated product hierarchies, and shipping of those items to another entity. These record details are required to meet the message specifications in Section 4. The foreign manufacturer must also share these records with the relevant MAH prior to importation of those product items into the UAE (see “MSG (2)” in Figure 2).
4. Once the MAH receives:
 - a. The Shipping Import Permit.
 - b. Suitable records from Batch Releasers.
 - c. Suitable records from 3PL partners, where used, to transport goods from factory to the UAE.

The MAH must send a single EPCIS message (“EPCIS (1)” in Figure 2 / Figure 3), each containing the Shipping Import Permit reference; commissioning, aggregation and shipping event for the full / partial shipment.

5. Where the MAH delegates the technical level data collection and/or Tatmeen reporting to a technical partner, then that partner must conduct the steps 2; 3; and 4 as appropriate, on behalf of the MAH.
6. The MAH must notify the Distributor (or where Incoterms dictate, the 3PL) once the importation EPCIS message is successfully sent to the Tatmeen solution. The Distributor (or where Incoterms dictate, the 3PL) must then send an EPCIS message (“EPCIS (2)” in Figure 2 / Figure 3) to the Tatmeen solution to receive the goods into the UAE for customs clearance and federal release. This EPCIS message (“EPCIS(2)” in Figure 2 / Figure 3) is described in the Tatmeen Technical Guide for Logistics and is not described in this document.
7. Once the importation is successfully receipted into the Distributor (or 3PL as appropriate) and reported to the Tatmeen solution, then the goods are sampled and inspected as appropriate at the Distributor / 3PL location in conjunction with MoHAP and Federal Customs.

3.1.2 Constraints and Validations

Since this importation initiates the first registration of these serialised product items, the content and sequencing of the multiple events associated must be strictly managed. In order to achieve this without unnecessary messaging failures, the Tatmeen solution expects to receive from the MAH (or their delegated technical partner):

1. A single EPCIS message for a full / partial delivery that defines the product items for importation.
2. Each EPCIS message must contain an EPCIS Header, that specifies:
 - a. A unique message identifier that is generated by the MAH (or their delegated technical partner) and is used to identify each EPCIS message.
 - b. The message creation date and time.
 - c. The message sender information, i.e., the MAH GLN.
 - d. The identifier for the relevant Tatmeen system that will receive the EPCIS message.
3. Each EPCIS message must consist of a series of GS1 EPCIS events recorded in an event list and must follow the structure below.

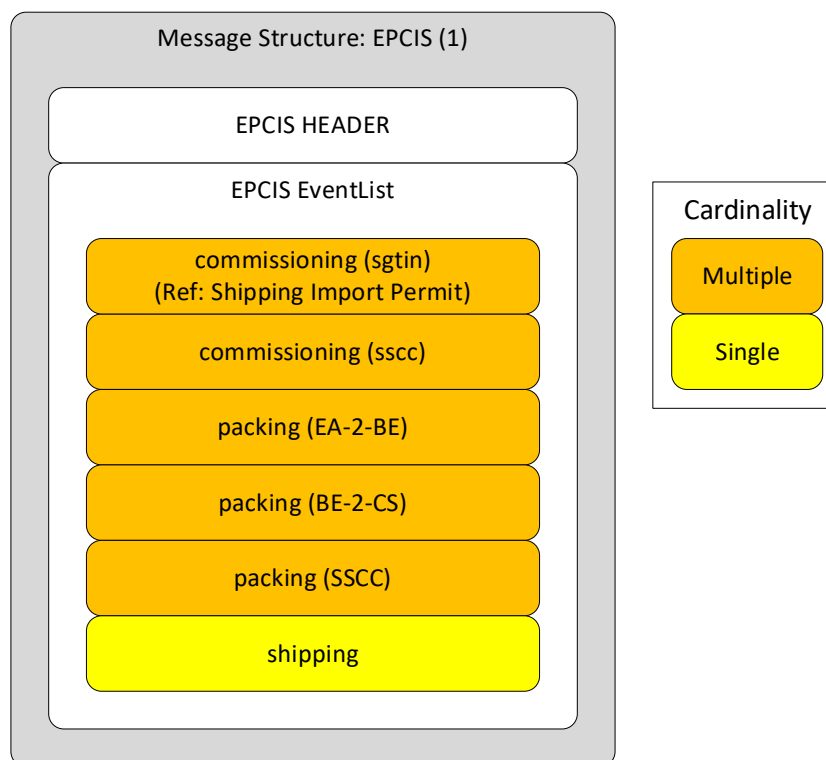


Figure 4 Importation EPCIS Message Structure

4. The Shipping Import Permit reference must be the same reference specified in each commissioning event in the event list.
5. Each of the EPCIS event components of each importation message event list is described in Section 4.5. The following constraints must apply to any EPCIS message for imported goods.
 - a. The accumulated number of separate product serialised ID's list in all commissioning events within the message must not exceed 50 000.
 - b. Each aggregation (packing) message defines the parent / child relationship of the products according to the following general structure. This structure is typical of products and this structure is used for illustration of the principle. Variations in product structure must still follow this principle, including the principle that there is always only one parent ID in each event.
 - i. EA-2-BE: A fixed quantity of secondary packaged serialised product items is packaged into a bundle.

- ii. BE-2-CS: A fixed quantity of bundles may be packaged into a product specific case (CS).
- iii. SSCC: Any of the previously mentioned hierarchy levels may be packaged into a logistics unit (e.g., pallet) for ease of warehouse operation and ease of transportation.

The order of the aggregation events must follow the top to bottom sequence shown in Figure 4.

- c. A single shipping event only with top-level hierarchy products (typically pallets).
6. All events in EPCIS message must be sorted in chronological order and this chronological order must follow the top to bottom sequence of the events in the event list shown in Figure 4. The earliest event time must be the *commissioning* events.
 7. The total EPCIS message size must not exceed 15 MB based on the current definition and will be revised subject to further Tatmeen review.

3.2 Importation of Unregistered Drugs

When the of shipment import permit is created in MoHAP Import Permit System by “Distributors/ licenced agents/ medical stores”. MoHAP Import Permit System pushes the Unregistered drugs product master data to BrandSync where additional data is entered in BrandSync. BrandSync pushes the stgmaster data to Tatmeen.

3.3 Manufacturing Within the UAE

This section describes the reporting scenario for Manufacturers who operate inside of the UAE, manufacturing and shipping pharmaceutical products that are then released into the UAE market.

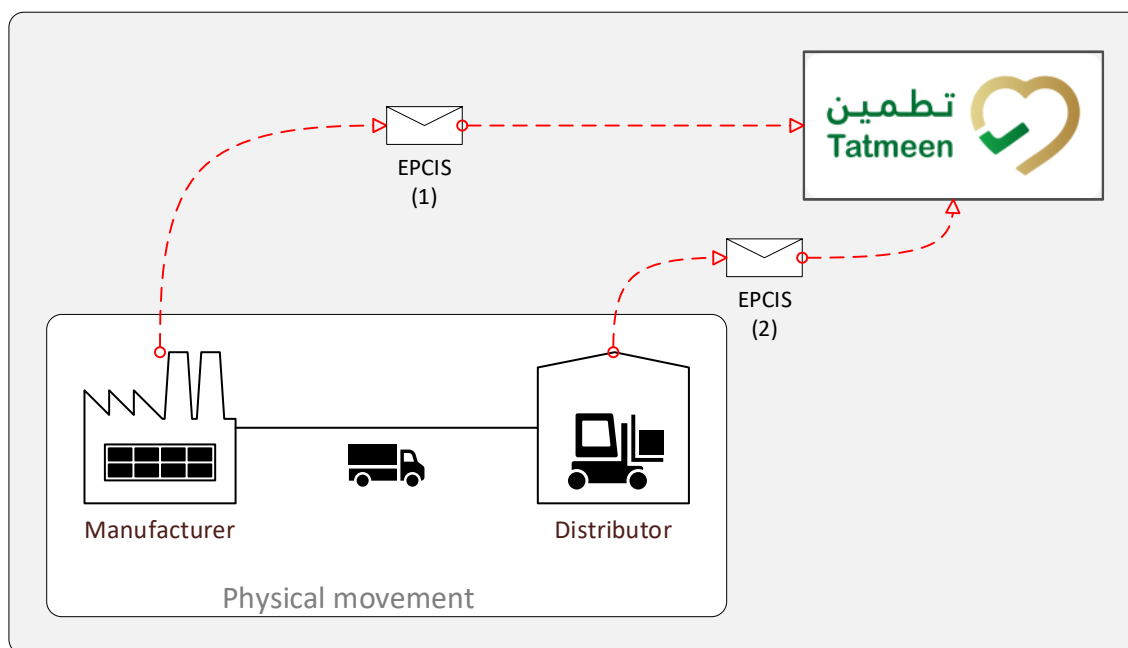


Figure 5 Processing Drugs from Local (Domestic) Manufacturers

3.3.1 Business Process Outline

This outline refers to Figure 5, above. Note that in the description below there is reference to a Local Sales Permit that is still not in place, however this illustrates the intent.

1. The Manufacturer must obtain the Local Sales Permit for the products that will be manufactured for the UAE domestic market.
 - a. The Local Sales Permit contains the product GTIN identifiers for products that are intended to be distributed to the UAE domestic market.
 - b. Each product GTIN item on the Local Sales Permit is valid for a maximum quantity.
 - c. Partial shipment of products listed on the Local Sales Permit, is permitted. However, the total accumulated quantity of GTIN identified products that is published on the Local Sales Permit must not be exceeded.
2. Once the Manufacturer receives the Local Sales Permit and has identified the top-level hierarchy items scheduled for UAE market release, then they must send a single EPCIS message ("EPCIS (1)" in Figure 5) containing the Local Sales Permit reference; commissioning, aggregation and shipping event for the full / partial shipment.

3. Once the local manufacturing EPCIS message is successfully sent to the Tatmeen solution, the products may be shipped from the manufacturer to the local UAE supply chain partner. Note that the EPCIS message ("*EPCIS(2)*" in Figure 5) is described in the Tatmeen Technical Guide for Logistics and is not described in this document.

3.3.2 Constraints and Validations

Since this local manufacturing initiates the first registration of these serialised product items, the content and sequencing of the multiple events associated must be strictly managed. In order to achieve this without unnecessary messaging failures the Tatmeen solution expects to receive from the local manufacturer:

1. A single EPCIS message for a full / partial delivery that defines the product items for release to the local UAE market.
2. Each EPCIS message must contain an EPCIS Header, that specifies:
 - a. A unique message identifier that is generated by the Local Manufacturer and is used to identify each EPCIS message.
 - b. The message creation date and time.
 - c. The message sender information, i.e., the Domestic Manufacturer GLN.
 - d. The identifier for the relevant Tatmeen system that will receive the EPCIS message.
3. Each EPCIS message must consist of a series of GS1 EPCIS events recorded in an event list and must follow the structure described in the diagram below.

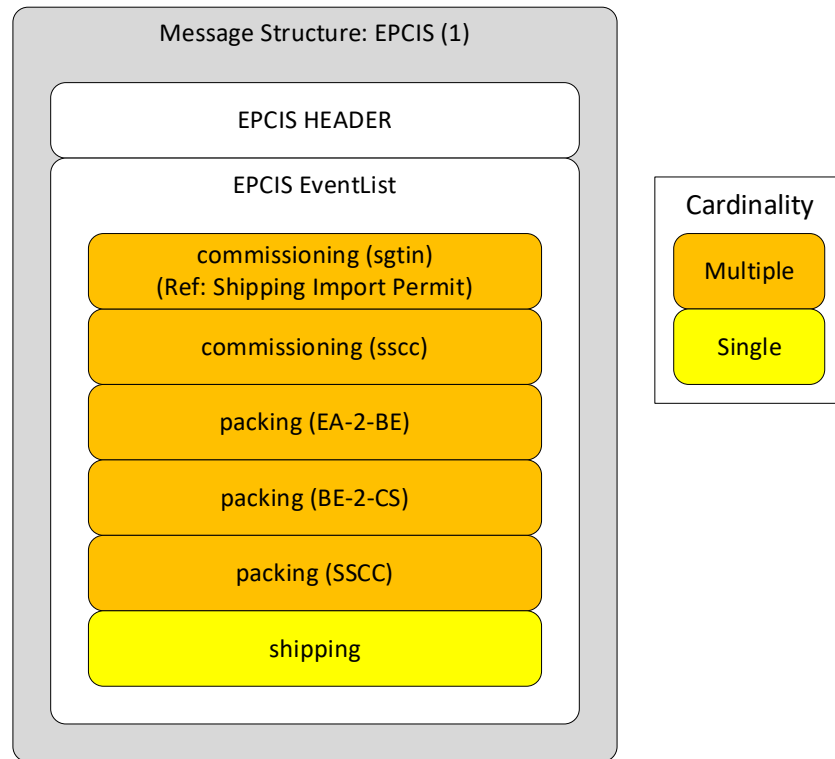


Figure 6 Local Manufacture EPCIS Message Structure

4. The Local Sales Permit reference must be the same reference specified in each commissioning event in the event list.
5. Each of the EPCIS event components of each Domestic Manufacturer message event list is described in Section 4.5. The following constraints must apply to any EPCIS message for domestically manufactured goods.
 - a. The accumulated number of separate product serialised ID's list in all commissioning events within the message must not exceed 50 000.
 - b. Each aggregation (packing) message defines the parent / child relationship of the products according to the following general structure. There is only one parent ID:
 - i. EA-2-BE: A fixed quantity of secondary packaged serialised product items is packaged into a bundle.
 - ii. BE-2-CS: A fixed quantity of bundles may be packaged into a product specific case (CS).

- iii. SSCC: Any of the previously mentioned hierarchy levels may be packaged into a logistics unit (e.g., pallet) for ease of warehouse operation and ease of transportation.

The order of the aggregation events must follow the top to bottom sequence shown in Figure 6.

- c. A single shipping event only with top-level hierarchy products (typically pallets).
6. All events in EPCIS message must be sorted in chronological order and this chronological order must follow the top to bottom sequence of the events in the event list shown in Figure 6. The earliest event time must be the *commissioning* events.
 7. The total EPCIS message size must not exceed 15 MB based on the current definition and will be revised subject to further Tatmeen review.

4 API Specification

During the business partner onboarding process, the MAH / Domestic Manufacturer Single Point of Contact (SPOC) will be registered, and the SPOC then manages the API subscription to enable electronic submission of messages to the Tatmeen solution. This section describes the following:

- API Subscription
- Service APIs
- Message Formats
- Message Status Formats
- Message Acknowledgements

4.1 API Subscription

To be able to subscribe to the Tatmeen solution APIs, the following steps must be followed.

1. The business partner (MAH) SPOC must register a technical user following the registration process in the Tatmeen Technical Onboarding Guide.
2. Once approval for the user is given, the technical user credentials (sign-on ID and password) are created in the Tatmeen solution and authorised for messages that reference the business partner GLN.
3. In the scenario where the business partner delegates the technical activities to a third party representative, the business partner SPOC must securely share the credentials with that third party with instructions to only use the credentials in association with the business partner Global Location Identifier (GLN).
4. The MAH / Domestic Manufacturer SPOC (or relevant technical representative) must subscribe to the Tatmeen APIs on receiving the technical user credentials. During subscription the Tatmeen API Application Key and Application Secret are issued. These must be saved for use during technical messaging with the Tatmeen system.

4.2 API Authentication

Prior to connecting to any specific API services, the API connection must be authenticated using OpenID Connect. OpenID Connect is an identity layer that allows the business partner technical user to be verified against the Tatmeen identity service. The following considerations are required.

1. The API calls must use OpenID authentication to communicate with the Tatmeen system.
2. Each API technical user must send messages by calling the designated API Authentication endpoints and must include the ClientID Token and API Application Secret Key.

4.2.1 Staging Authentication Endpoints

The table below contains the current expected test endpoint. This section shall be updated once this detail is available for publication.

IP Range	Service URL	Operations	Description
x.x.x.x	https://stg-api.url/v1	/auth	Authorization Service

Table 4 Authentication Test Endpoints

4.2.2 Live Authentication Endpoints

The table below contains the current expected live endpoint. This section shall be updated once this detail is available for publication.

IP Range	Service URL	Operations	Description
x.x.x.x	https://api.url/v1	/auth	Authorization Service

Table 5 Authentication Live Endpoints

4.3 Service APIs

The tables below (Table 6 and Table 7) provide the list of service URLs for the MAH / Domestic Manufacturer activities. Actual URL's will be part of onboarding kit.

4.3.1 Staging Service Endpoints

IP Range	Service URL	Operations	Description
x.x.x.x	https://stgapim.tatmeen.ae/v1	/epcisMsgAsync	EPCIS Message Events
x.x.x.x	https://stgapim.tatmeen.ae/v1	/epcisMsgStatus	Check EPCIS Message Status

Table 6 Service Test Endpoints

4.3.2 Live Service Endpoints

IP Range	Service URL	Operations	Description
x.x.x.x	https://apim.tatmeen.ae/v1	/epcisMsgAsync	EPCIS Message Events
x.x.x.x	https://apim.tatmeen.ae/v1	/epcisMsgStatus	Check EPCIS Message Status

Table 7 Service Live Endpoints

4.4 Message Formats

The following message formats are to be used.

Data	Content-Type	Standards
EPCIS Event Messages	Application/xml	GS1 EPCIS 1.2
EPCIS Message Status Query	Application/xml	Tatmeen xml

Table 8 Message Formats

For further details about the message formats, please refer to:

- GS1 EPCIS and CBV Implementation guide document
(https://www.gs1.org/docs/epc/EPCIS_Guideline.pdf)
- GS1 Common Business Vocabulary Standard
(<https://www.gs1.org/sites/default/files/docs/epc/CBV-Standard-1-2-2-r-2017-10-12.pdf>)
- GS1 Standard Business Document Header (SBDH) Version 1.3
(https://www.gs1.org/sites/default/files/docs/xml/SBDH_v1_3_Technical_Implementation_Guide.pdf)
- ISO 8601: Representation of dates and times “Data elements and interchange formats – Information interchange.”

These documents form the basis for the EPCIS Message Formats described in the next section.

4.5 EPCIS Message Format

This section provides detailed information about the format of the EPCIS messages that must be sent by the MAH / Domestic Manufacturer (or relevant technical representative) to the Tatmeen system. The format of an EPCIS message is defined in:

- Figure 4, the EPCIS message sent by the MAH (or relevant technical representative) for importation of registered drugs into the UAE,
- Figure 6, the EPCIS message sent by the Domestic Manufacturer (or relevant technical representative), for goods manufactured within the UAE for the domestic UAE market.

It is assumed that the recipient of this document is familiar with the GS1 EPCIS standards and the technical xml formats described in the subsequent sections.

4.5.1 EPCIS: Custom Tatmeen Namespace

To allow custom Tatmeen vocabulary within the EPCIS messages, the EPCIS messages contain a custom xml namespace definition at the start of the message envelope.

This namespace definition is:

`xmlns:tatmeen="http://tatmeen.ae/epcis/"`

4.5.2 EPCIS: Header Attributes

All EPCIS messages originating from a MAH / Domestic Manufacturer (or relevant technical representative) must present a standard GS1 EPCIS header at the start of the message that is structured according to the UN/CEFACT V1.3: 2004 standard business document header (SBDH) specification as described in the GS1 Standard Business Document Header (SBDH) Version 1.3 Technical Implementation Guide.

This header contains information to uniquely identify:

- Which manufacturer sent the message.
- The intended destination for the message.
- A unique message identifier identifying a specific message.

Element	Occurrence & Format	Description	Example
<HeaderVersion>	Mandatory	Constant value representing the header version, being v1.3: (2004).	<sbdh:HeaderVersion> 1.3 </sbdh:HeaderVersion>
<Sender><Identifier>	Mandatory	The Authority is always "GS1", followed by the GLN representing the Sender Application or the GLN for the MAH / Domestic Manufacturer business partner in standard 13-digit format.	<sbdh:Sender> <sbdh:Identifier Authority="GS1"> Sender GLN </sbdh:Identifier> </sbdh:Sender>
<Receiver><Identifier>	Mandatory	The Authority is always "GS1", followed by the Receiver GLN. This is always the Tatmeen system GLN. Please note: This GLN value will be provided at a later stage.	<sbdh:Receiver> <sbdh:Identifier Authority="GS1"> Tatmeen GLN </sbdh:Identifier> </sbdh:Receiver>
<DocumentIdentification><sbdh:Standard>	Mandatory	Constant Value "EPCglobal"	<sbdh:Standard> EPCglobal </sbdh:Standard>
<sbdh:TypeVersion>	Mandatory	Constant Value "1.0" that matches the 'xsd:schema' version for ATTP.	<sbdh:TypeVersion> 1.0 </sbdh:TypeVersion>
<InstanceIdentifier>	Mandatory	A unique message identifier issued by the Manufacturer. This is limited to a maximum of 40 alphanumeric characters.	<sbdh:InstanceIdentifier> e999f82e7828a9633d977c64016a8f81 </sbdh:InstanceIdentifier>
<sbdh:Type>	Mandatory	Constant Value "Events" from GS1 standard.	<sbdh:Type> Events </sbdh:Type>
<CreationDateAndTime>	Mandatory	Creation timestamp of this message according to ISO 8601 standard UTC format; indicated by the suffix "Z".	<sbdh:CreationDateAndTime>2020-05-05T10:04:17Z</sbdh:CreationDateAndTime>

Table 9 EPCIS: Header Attributes

4.5.3 EPCIS Commissioning Attributes

Commissioning – SGTIN

There are several constant values in the definition below that are explained in the GS1 EPCIS Common Business Vocabulary standard. The assumption of this technical guide is that this is read in conjunction with the standards on which message formats are defined.

Every SGTIN commissioning event must have the master date (ILMD) extension as specified in below table. A single SGTIN commissioning event contains only those

product EPCs that have the same Lot Number. Therefore, multiple lots for the same product always result in an event list with multiple commissioning events.

	Element	Occurrence & Format	Description	Example
Standard Fields	<eventTime>	Mandatory	The date and time, in ISO 8601 standard UTC format, at which the EPCIS Capturing Applications asserts the event occurred.	<eventTime>2021-05-31T12:02:11.000Z</eventTime>
	<eventTimeZoneOffset>	Mandatory	The UTC time zone offset, including daylight saving considerations, in effect at the time and place the event occurred.	<eventTimeZoneOffset>+01:00</eventTimeZoneOffset>
	<epcList>	Mandatory	A list of one or more SGTIN EPCs naming specific objects to which the event pertained.	<epcList> <epc>urn:epc:id:sgtin:123456.0202991.AFA0UM128F4C</epc> </epcList>
	<action>	Mandatory	Constant Value from “xsd:schema” for the event type action.	<action>ADD</action>
	<bizStep>	Mandatory	Constant value. The business step representing the event activity.	<bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
	<disposition>	Mandatory	Constant Value.	<disposition>urn:epcglobal:cbv:disposition:active</disposition>
	<readPoint>	Mandatory	The read point must be the GLN in SGLN format of the MAH / Domestic Manufacturer.	<readPoint> <id>urn:epc:id:sgln:123456.789101.0</id> </readPoint>
	<bizLocation>	Mandatory	The business location must be the same GLN as the <readpoint>.	<bizLocation> <id>urn:epc:id:sgln:123456.789101.0</id> </bizLocation>
Extension	<extension><ilmd>	Mandatory for SGTINs	This element is to capture the master data extensions for the listed EPCs.	
	<cbvmdata:lotNumber>	Mandatory for SGTINs	Single manufacturers Lot number for the products commissioned in this event.	<cbvmdata:lotNumber>LOT123456</cbvmdata:lotNumber>
	<cbvmdata:itemExpirationDate>	Mandatory for SGTINs	Expiry date of products for this lot number in abbreviated ISO 8601 format (YYYY-MM-DD).	<cbvmdata:itemExpirationDate>2023-02-28</cbvmdata:itemExpirationDate>

Element	Occurrence & Format	Description	Example
<tatmeen:lotManufacturingDate>	Mandatory for SGTINs	This element is to capture the manufacturing date associated with the lot number in abbreviated ISO 8601 format (YYYY-MM-DD).	<tatmeen:lotManufacturingDate>2021-02-28</tatmeen:lotManufacturingDate>
<tatmeen:manufacturingOrigin>	Mandatory for SGTINs	This is to identify Origin of product and must be one of two values: <ul style="list-style-type: none"> Imported Production - "I". Local Production - "L". 	<tatmeen:manufacturingOrigin>L</tatmeen:manufacturingOrigin> OR <tatmeen:manufacturingOrigin>I</tatmeen:manufacturingOrigin>
<tatmeen:shipmentPermit>	Conditional	Mandatory for importation into the UAE for foreign manufactured products. This element references the valid Shipping Import Permit held by the MAH and must apply to all EPCs in the event. Commissioned EPCs must have a valid permit reference to be registered in the Tatmeen solution.	<tatmeen:shipmentPermit> SHP/9999/2020 </tatmeen:shipmentPermit>
<tatmeen:localSalesPermit>	Future (Conditional)	This is pending development of the Local Sales Permit system. Once the system is in place, this becomes mandatory for local manufacture of goods for the domestic UAE market. This element references the proposed Local Sales Permit held by the Domestic Manufacturer and must apply to all EPCs in the Event. Commissioned EPCs must have a valid permit reference to be registered in the Tatmeen solution.	<tatmeen:localSalesPermitt> LSP/9899/2021 </tatmeen:localSalesPermit>

Table 10 Commissioning – SGTIN

Commissioning – SSCC

This section provides information about the logistics unit (pallets, etc.) commissioning event definition. As before, there are several constant values in the definition below that are explained in the GS1 EPCIS Common Business Vocabulary standard. The

assumption of this technical guide is that this is read in conjunction with the standards on which message formats are defined.

Every SSCC commissioning event must NOT have the master data (ILMD) extension as described in the previous section.

	Element	Occurrence & Format	Description	Example
Standard Fields	<eventTime>	Mandatory	The date and time, in ISO 8601 standard UTC format, at which the EPCIS Capturing Applications asserts the event occurred.	<eventTime>2021-05-31T12:02:11.000Z</eventTime>
	<eventTimeZoneOffset>	Mandatory	The UTC time zone offset, including daylight saving considerations, in effect at the time and place the event occurred.	<eventTimeZoneOffset>+01:00</eventTimeZoneOffset>
	<epcList>	Mandatory	A list of one or more SSCC EPCs naming specific objects to which the event pertained.	<epcList> <epc>urn:epc:id:sscc:123456.02029914567</epc> </epcList>
	<action>	Mandatory	Constant Value from "xsd:schema" for the event type action.	<action>ADD</action>
	<bizStep>	Mandatory	Constant value. The business step representing the event activity.	
	<disposition>	Mandatory	Constant Value.	<disposition>urn:epcglobal:cbv:disp:active</disposition>
	<readPoint>	Mandatory	The read point must be the GLN in SGLN format of the MAH / Domestic Manufacturer.	<readPoint> <id>urn:epc:id:sgln:123456.789101.0</id> </readPoint>
	<bizLocation>	Mandatory	The business location must be the same GLN as the <readpoint>.	<bizLocation> <id>urn:epc:id:sgln:123456.789101.0</id> </bizLocation>

Table 11 Commissioning – SSCC

4.5.4 EPCIS Aggregation Attributes

This section provides detailed information about the parent / child relationship between packaged product items as they progress through manufacture in preparation of being shipped. Parent / child relationships expected for manufacturer reporting are:

- EA-2-BE Serialised product with UoM=EA, packaged into a serialised bundle (UoM=BE).
- BE-2-CS Serialised bundle with UoM=BE, packaged into a serialised case (UoM=CS).
- Product-2-SSCC Serialised products packaged into any logistics unit.

There must be a single aggregation event representing a single parent and the time sequencing of aggregation events must:

- Be later than the commissioning of all parent and child EPCs.
- Have the smallest unit of measure parent (i.e., UoM=BE) with the earliest timestamp.
- Have the next in sequencing as parent EPCs with UoM=CS.
- Have SSCCs always last in the timestamp sequence.

	Element	Occurrence & Format	Description	Example
Standard Fields	<eventTime>	Mandatory	The date and time, in ISO 8601 standard UTC format, at which the EPCIS Capturing Applications asserts the event occurred.	<eventTime>2021-05-31T12:02:11.000Z</eventTime>
	<eventTimeZoneOffset>	Mandatory	The UTC time zone offset, including daylight saving considerations, in effect at the time and place the event occurred.	<eventTimeZoneOffset>+01:00</eventTimeZoneOffset>
	<parentID>	Mandatory	The parent element to capture the UID of parent SGTIN/SSCC for the following packed items.	<parentID>urn:id:sgtin:0123456.305513.NN3P266YLYPC</parentID>
	<childEPCs>	Mandatory	A list of one or more EPCs of contained objects identified by instance-level identifiers.	<childEPCs> <epc>urn:epc:id:sgtin:0123456.205513.NN2P266YLYPC</epc> <epc>urn:epc:id:sgtin:0123456.205513.NN2P266YYXX2</epc> </childEPCs>
	<action>	Mandatory	Constant Value from “xsd:schema” for the event type action.	<action>ADD</action>
	<bizStep>	Mandatory	Constant value. The business step representing the event activity.	<bizStep>urn:epcglobal:cbv:bizstep:packing</bizStep>
	<readPoint>	Mandatory	The read point must be the same GLN as define in Section 4.5.3.	<readPoint> <id>urn:epc:id:sgln:123456.789101.0</id> </readPoint>

	Element	Occurrence & Format	Description	Example
	<bizLocation>	Mandatory	The business location must be the same GLN as define in Section 4.5.3.	<pre><bizLocation> <id>urn:epc:id:sgln:123456.000000.0</id> </bizLocation></pre>

Table 12 Aggregation Attributes

4.5.5 EPCIS Shipping Attributes

The shipping event is used to control the flow of goods as they are shipped from the manufacturer to the UAE market. Typically, the products are packaged onto pallets (SSCC), prior to shipping. This aids logistics transactions and logistics movements for warehouse efficiency. The transaction based messages, therefore:

- Must follow the aggregation events for the top level hierarchy EPC and relevant packaged product items.
- Must report only the top-level hierarchy EPCs.

	Element	Occurrence & Format	Description	Example
Standard Fields	<eventTime>	Mandatory	The date and time, in ISO 8601 standard UTC format, at which the EPCIS Capturing Applications asserts the event occurred.	<eventTime>2021-05-31T12:02:11.000Z</eventTime>
	<eventTimeZoneOffset>	Mandatory	The UTC time zone offset, including daylight saving considerations, in effect at the time and place the event occurred.	<eventTimeZoneOffset>+01:00</eventTimeZoneOffset>
	<epcList>	Mandatory	A list of one or more EPCs naming specific objects to which the event pertained. Only the highest level aggregated EPCs in the hierarchy are listed here.	<pre><epcList> <epc>urn:epc:id:sscc:123456.02029914567</epc> </epcList></pre>
	<action>	Mandatory	Constant Value from “xsd:schema” for the event type action.	<action>OBSERVE</action>
	<bizStep>	Mandatory	Constant value. The business step representing the event activity.	<bizStep>urn:epcglobal:cbv:bizstep:shipping</bizStep>

	Element	Occurrence & Format	Description	Example
	<disposition>	Mandatory	Constant Value.	<disposition>urn:epcglobal:cbv:disp: in_transit </disposition>
	<readPoint>	Mandatory	The read point must be the same GLN as define in Section 4.5.3.	<readPoint> <id>urn:epc:id:sgln:123456.789101.0 </id> </readPoint>
	<bizTransactionList>	Optional	A list of business transactions that define the context of this event.	
	<bizTransaction>	Optional	An identifier that denotes the specific shipping despatch advice reference to the business transaction between the MAH / Domestic Manufacturer and the recipient where the stock will enter the UAE market. Typically, this is the shipping document reference for the goods to enter the UAE.	<bizTransaction type="urn:epcglobal:cbv:btt:desadv"> urn:epcglobal:cbv:bt:0123456999995: 0105</bizTransaction>
Extension	<extension><sourceList>	Mandatory	A list of Source elements that provides context about the originating endpoint.	
	<source>	Mandatory	Only the Owning Party applies to this Event and is the same GLN as the <readPoint> represented in GS1 URN SGLN format.	<source type="urn:epcglobal:cbv:sdt:owning_p arty">urn:epc:id:sgln:123456.789101. 0</source>
	<destinationList>	Mandatory	A list of Destination elements that provide context about the terminating endpoint of a business transfer.	
	<destination>	Mandatory	Both the Owning Party (sold-to partner) and the Location (ship-to partner) GLNs are required in SGLN format. This is one of the following dependant on the process scenario: <ul style="list-style-type: none"> The Distributor or 3PL where the importation customs inspection will take place. 	<destination type="urn:epcglobal:cbv:sdt:owning_p arty">urn:epc:id:sgln:0333333.00000. 0</destination> <destination type="urn:epcglobal:cbv:sdt:location" >urn:epc:id:sgln:0356787.00040.0</d estination>

	Element	Occurrence & Format	Description	Example
			<ul style="list-style-type: none"> The destination UAE supply chain partner for locally manufactured products. 	

Table 13 Shipping Attributes - Shipping Event

4.5.6 EPCIS (Technical) Message Response

The following technical responses will provide immediate confirmation regarding delivery of the EPCIS event list message described in the previous sections, to the Tatmeen solution. The Tatmeen system returns standard HTTP / HTTPS codes to the MAH / Domestic Manufacturer (or relevant technical representative). The response codes follow the general standard where:

- 200-299 indicate success / information,
- 300-399 indicate redirection,
- 400-499 are technical errors, and
- 500-599 are application errors.

Solution example codes are shown in the table below with custom messages codes also provided for efficient error handling. Once the complete set of solution technical and application codes is finalised, this document shall be updated and reissued.

The messages detailing the errors and rejections on data will be sent from Tatmeen Systems to the manufacturer when using the message status query service.

Code	Message Code	Type	Action	Description
404	Standard	Service Error	Retry	Service Not Found
401	Standard	Auth Error	Retry	Authorization Error
202	I001	Information	N/A	OK
500	E001	Internal Error	Retry	Tatmeen applications not reachable
500	E002	Internal Error	No Retry	Invalid Import Permit
500	E003	Internal Error	No Retry	Message Validation Error

Table 14 Technical Acknowledgments

4.5.7 EPCIS: Example

In this section, there are two examples with each example including the three types of events related to a specific shipment.

- Commissioning
- Aggregation
- Shipping

The first example represents a registered partner initiating importation of goods into the UAE.

```
<epcis:EPCISDocument schemaVersion="1.2" creationDate="2021-01-28T07:21:26Z"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader"
xmlns:epcis="urn:epcglobal:epcis:xsd:1" xmlns:cbvmda="urn:epcglobal:cbv:mda">
  xmlns:tatmeen="http://tatmeen.ae/epcis/"
  <EPCISHeader>
    <sbdh:StandardBusinessDocumentHeader>
      <sbdh:HeaderVersion>1.0</sbdh:HeaderVersion>
      <sbdh:Sender>
        <sbdh:Identifier Authority="GS1">0123456789005</sbdh:Identifier>
      </sbdh:Sender>
      <sbdh:Receiver>
        <sbdh:Identifier Authority="GS1">7894561230005</sbdh:Identifier>
      </sbdh:Receiver>
      <sbdh:DocumentIdentification>
        <sbdh:Standard>EPCglobal</sbdh:Standard>
        <sbdh:TypeVersion>1.0</sbdh:TypeVersion>
      </sbdh:DocumentIdentification>
      <sbdh:InstanceIdentifier>2f1bdabdfae464c87e1aeb7e586e6ab</sbdh:InstanceIdentifier>
      <sbdh:Type>Events</sbdh:Type>
      <sbdh:CreationDateAndTime>2021-05-31T12:02:05.000Z</sbdh:CreationDateAndTime>
    </sbdh:StandardBusinessDocumentHeader>
  </EPCISHeader>
  <EPCISBody>
    <EventList>
      <ObjectEvent>
        <!-- Commissioning of SGTIN's/PRODUCTS-->
        <eventTime>2021-05-31T12:02:11.000Z</eventTime>
        <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
      </ObjectEvent>
    </EventList>
  </EPCISBody>
</epcis:EPCISDocument>
```

```

    <epc>urn:epc:id:sgtin:0123456.005512.01QA00001TY</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.011ABRG0001</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01ASAS000Q1</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01TDFFSF5RE</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01GDGDGDG34</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01100000003</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01YUTTYEQF</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.014545RF98F</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01TYEW56E</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01HNCEFGT33</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01YIQWQWWG6</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01RQYURTBHR</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01RFFWEW557</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01JFGSDFBNJ</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01TRFDFFSDF</epc>
    <epc>urn:epc:id:sgtin:0123456.005512.01TEFFEREFV</epc>
  </epcList>
  <action>ADD</action>
  <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
  <disposition>urn:epcglobal:cbv:disp:active</disposition>
  <readPoint>
    <id>urn:epc:id:sgln:0123456.99999.0</id>
  </readPoint>
  <bizLocation>
    <id>urn:epc:id:sgln:0123456.99999.0</id>
  </bizLocation>
  <extension>
    <ilmd>
      <cbvmdata:lotNumber>LOT123456</cbvmdata:lotNumber>
      <cbvmdata:itemExpirationDate>2023-02-28</cbvmdata:itemExpirationDate>
    </ilmd>
  </extension>
  <!-- Additional attributes -->
  <tatmeen:lotManufacturingDate>2021-02-28</tatmeen:lotManufacturingDate>
  <tatmeen:manufacturingOrigin>I</tatmeen:manufacturingOrigin>
  <!-- Either Import Permit or Local Sales Permit in commissioning event -->
  <!-- For importation, this example uses Import Permit -->
  <tatmeen:shipmentPermit>SHP/999/2020</tatmeen:shipmentPermit>
</ObjectEvent>
<ObjectEvent>

```


<!-- COMMISSION EVENT FOR FULL SHIPPER CASE -->

```

<eventTime>2021-05-31T12:02:15.000Z</eventTime>
<eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
<epcList>
  <epc>urn:epc:id:sgtin:0123456.305512.Y4QQQBH0VVW1</epc>
  <epc>urn:epc:id:sgtin:0123456.305512.A4QIY780KL6M</epc>
</epcList>
<action>ADD</action>
<bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
<disposition>urn:epcglobal:cbv:disp:active</disposition>
<readPoint>
  <id>urn:epc:id:sgln:0123456.99999.0</id>
</readPoint>
<bizLocation>
  <id>urn:epc:id:sgln:0123456.99999.0</id>
</bizLocation>
<extension>
  <ilmd>
    <cbvmda:lotNumber>LOT123456</cbvmda:lotNumber>
    <cbvmda:itemExpirationDate>2023-02-28
    </cbvmda:itemExpirationDate>
  </ilmd>
</extension>

```

<!-- Additional attributes -->

```

<tatmeen:lotManufacturingDate>2021-02-28
</tatmeen:lotManufacturingDate>
<tatmeen:manufacturingOrigin>I</tatmeen:manufacturingOrigin>

```

<!-- Either Import Permit or Local Sales Permit in commissioning event -->**<!-- For importation, this example uses Import Permit -->**

```

<tatmeen:shipmentPermit>SHP/999/2020
</tatmeen:shipmentPermit>

```

</ObjectEvent>

<ObjectEvent>

<!-- Commissioning of SSCC/PALLET -->

```

<eventTime>2021-05-31T12:02:20.000Z</eventTime>
<eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
<epcList>
  <epc>urn:epc:id:sscc:0123456.0001000516</epc>
</epcList>
<action>ADD</action>
<bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
<disposition>urn:epcglobal:cbv:disp:active</disposition>
<readPoint>

```

```

        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </readPoint>
    <bizLocation>
        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </bizLocation>
</ObjectEvent>
<AggregationEvent>
    <!-- AGGREGATION OF 8 CARTONS INTO FULL CASE 01-->
    <eventTime>2021-05-31T12:02:16.000Z</eventTime>
    <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
    <parentID>urn:epc:id:sgtin:0123456.305512.Y4QOQBH0VWV1</parentID>
    <childEPCs>
        <epc>urn:epc:id:sgtin:0123456.005512.01QA00001TY</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.011ABRG0001</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01ASAS000Q1</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01TDFFSF5RE</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01GDGDGDG34</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01100000003</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01YUTTYYEQF</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.014545RF98F</epc>
    </childEPCs>
    <action>ADD</action>
    <bizStep>urn:epcglobal:cbv:bizstep:packing</bizStep>
    <readPoint>
        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </readPoint>
    <bizLocation>
        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </bizLocation>
</AggregationEvent>
<AggregationEvent>
    <!-- AGGREGATION OF 8 CARTONS INTO FULL CASE 02-->
    <eventTime>2021-05-31T12:02:17.000Z</eventTime>
    <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
    <parentID>urn:epc:id:sgtin:0123456.305512.A4QIY780KL6M</parentID>
    <childEPCs>
        <epc>urn:epc:id:sgtin:0123456.005512.01TYEWEW56E</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01HNCEFGT33</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01YIQWQWWG6</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01RQYURTBHR</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01RFFFEW557</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01JFGSDFBNJ</epc>
        <epc>urn:epc:id:sgtin:0123456.005512.01TRFDFFSDF</epc>
    </childEPCs>

```

```

        <epc>urn:epc:id:sgtin:0123456.005512.01TEFFEREFV</epc>
    </childEPCs>
    <action>ADD</action>
    <bizStep>urn:epcglobal:cbv:bizstep:packing</bizStep>
    <readPoint>
        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </readPoint>
    <bizLocation>
        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </bizLocation>
</AggregationEvent>
<AggregationEvent>
    <!-- AGGREGATION OF 2 FULL CASES INTO A PALLET -->
    <eventTime>2021-05-31T12:02:22.000Z</eventTime>
    <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
    <parentID>urn:epc:id:sscc:0123456.0001000516</parentID>
    <childEPCs>
        <epc>urn:epc:id:sgtin:0123456.305512.Y4QOQBH0VVW1</epc>
        <epc>urn:epc:id:sgtin:0123456.305512.A4QIY780KL6M</epc>
    </childEPCs>
    <action>ADD</action>
    <bizStep>urn:epcglobal:cbv:bizstep:packing</bizStep>
    <readPoint>
        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </readPoint>
    <bizLocation>
        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </bizLocation>
</AggregationEvent>
<ObjectEvent>
    <!-- Shipping Event -->
    <eventTime>2021-05-31T12:02:25.000Z</eventTime>
    <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
    <epcList>
        <epc>urn:epc:id:sscc:0123456.0001000516</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:0123456.99999.0</id>
    </readPoint>
    <bizTransactionList>

```

```

<bizTransaction
type="urn:epcglobal:cbv:btt:desadv">urn:epcglobal:cbv:bt:0123456999995:0105</bizTransaction>
  </bizTransactionList>
  <extension>
    <sourceList>
      <source
type="urn:epcglobal:cbv:sdt:owning_party">urn:epc:id:sgln:0123456.99999.0</source>
      </sourceList>
      <destinationList>
        <destination
type="urn:epcglobal:cbv:sdt:owning_party">urn:epc:id:sgln:0333333.00000.0</destination>
        <destination
type="urn:epcglobal:cbv:sdt:location">urn:epc:id:sgln:0356787.00040.0</destination>
        </destinationList>
      </extension>
    </ObjectEvent>
  </EventList>
</EPCISBody>
</epcis:EPCISDocument>

```

Table 15 EPCIS: Importation Example

The second example represents a registered Domestic Manufacturer partner initiating local manufacture within the UAE and release of the goods into the UAE market.

```
<epcis:EPCISDocument schemaVersion="1.2" creationDate="2021-01-28T07:21:26Z"
xmlns:sbdh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader"
xmlns:epcis="urn:epcglobal:epcis:xsd:1" xmlns:cbvmda="urn:epcglobal:cbv:mda">
xmlns:tatmeen="http://tatmeen.ae/epcis/"
  <EPCISHeader>
    <sbdh:StandardBusinessDocumentHeader>
      <sbdh:HeaderVersion>1.0</sbdh:HeaderVersion>
      <sbdh:Sender>
        <sbdh:Identifier Authority="GS1">0123456789005</sbdh:Identifier>
      </sbdh:Sender>
      <sbdh:Receiver>
        <sbdh:Identifier Authority="GS1N">7894561230005</sbdh:Identifier>
      </sbdh:Receiver>
      <sbdh:DocumentIdentification>
        <sbdh:Standard>EPCglobal</sbdh:Standard>
        <sbdh:TypeVersion>1.0</sbdh:TypeVersion>
      </sbdh:DocumentIdentification>
      <sbdh:InstanceIdentifier>2f1bdabdfae464c87e1aeb7e586e6ab</sbdh:InstanceIdentifier>
      <sbdh:Type>Events</sbdh:Type>
      <sbdh:CreationDateAndTime>2021-05-31T12:02:05.000Z</sbdh:CreationDateAndTime>
    </sbdh:StandardBusinessDocumentHeader>
  </EPCISHeader>
  <EPCISBody>
    <EventList>
      <ObjectEvent>
        <!--Commissioning of SGTIN's/PRODUCTS-->
        <eventTime>2021-05-31T12:02:11.000Z</eventTime>
        <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
        <epcList>
          <epc>urn:epc:id:sgtin:0123459.005512.01QA00001TY</epc>
          <epc>urn:epc:id:sgtin:0123459.005512.011ABRG0001</epc>
          <epc>urn:epc:id:sgtin:0123459.005512.01ASAS000Q1</epc>
          <epc>urn:epc:id:sgtin:0123459.005512.01TDFFSF5RE</epc>
          <epc>urn:epc:id:sgtin:0123459.005512.01GDGDGDG34</epc>
          <epc>urn:epc:id:sgtin:0123459.005512.01100000003</epc>
          <epc>urn:epc:id:sgtin:0123459.005512.01YUTTYEQF</epc>
          <epc>urn:epc:id:sgtin:0123459.005512.014545RF98F</epc>
          <epc>urn:epc:id:sgtin:0123459.005512.01TYEWEW56E</epc>
        </epcList>
      </ObjectEvent>
    </EventList>
  </EPCISBody>
</EPCISDocument>
```

```

        <epc>urn:epc:id:sgtin:0123459.005512.01HNCEFGT33</epc>
        <epc>urn:epc:id:sgtin:0123459.005512.01YIQWQWWG6</epc>
        <epc>urn:epc:id:sgtin:0123459.005512.01RQYURTBHR</epc>
        <epc>urn:epc:id:sgtin:0123459.005512.01RFFWEW557</epc>
        <epc>urn:epc:id:sgtin:0123459.005512.01JFGSDFBNJ</epc>
        <epc>urn:epc:id:sgtin:0123459.005512.01TRFDFFSDF</epc>
        <epc>urn:epc:id:sgtin:0123459.005512.01TEFFEREFV</epc>
    </epcList>
    <action>ADD</action>
    <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
    <disposition>urn:epcglobal:cbv:disp:active</disposition>
    <readPoint>
        <id>urn:epc:id:sgln:0123459.99999.0</id>
    </readPoint>
    <bizLocation>
        <id>urn:epc:id:sgln:0123459.99999.0</id>
    </bizLocation>
    <extension>
        <ilmd>
            <cbvmdata:lotNumber>LOT123459</cbvmdata:lotNumber>
            <cbvmdata:itemExpirationDate>2023-02-28
            </cbvmdata:itemExpirationDate>
        </ilmd>
    </extension>
    <!-- Additional attributes -->
    <tatmeen:lotManufacturingDate>2021-02-28
    </tatmeen:lotManufacturingDate>
    <tatmeen:manufacturingOrigin>L</tatmeen:manufacturingOrigin>
    <!-- Either Import Permit or Local Sales Permit in commissioning event -->
    <!-- For local manufacture, this example uses Local Sales Permit -->
    <tatmeen:localSalesPermit>LSP/9899/2021
    </tatmeen:localSalesPermit>
</ObjectEvent>
<ObjectEvent>
    <!-- COMMISSION EVENT FOR FULL SHIPPER CASE -->
    <eventTime>2021-05-31T12:02:15.000Z</eventTime>
    <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
    <epcList>
        <epc>urn:epc:id:sgtin:0123459.305512.Y4QOQBH0VVW1</epc>
        <epc>urn:epc:id:sgtin:0123459.305512.A4QIY780KL6M</epc>
    </epcList>
    <action>ADD</action>
    <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>

```

```

    <disposition>urn:epcglobal:cbv:disp:active</disposition>
    <readPoint>
      <id>urn:epc:id:sgln:0123459.99999.0</id>
    </readPoint>
    <bizLocation>
      <id>urn:epc:id:sgln:0123459.99999.0</id>
    </bizLocation>
    <extension>
      <ilmd>
        <cbvmdata:lotNumber>LOT123459</cbvmdata:lotNumber>
        <cbvmdata:itemExpirationDate>2023-02-28
        </cbvmdata:itemExpirationDate>
      </ilmd>
    </extension>
    <!-- Additional attributes -->
    <tatmeen:lotManufacturingDate>2021-02-28
    </tatmeen:lotManufacturingDate>
    <tatmeen:manufacturingOrigin>L</tatmeen:manufacturingOrigin>
    <!-- Either Import Permit or Local Sales Permit in commissioning event -->
    <!-- For local manufacture, this example uses Local Sales Permit -->
    <tatmeen:localSalesPermit>LSP/9899/2021
    </tatmeen:localSalesPermit>
  </ObjectEvent>
  <ObjectEvent>
    <!-- Commissioning of SSCC/PALLET -->
    <eventTime>2021-05-31T12:02:20.000Z</eventTime>
    <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
    <epcList>
      <epc>urn:epc:id:sscc:0123459.0001000516</epc>
    </epcList>
    <action>ADD</action>
    <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
    <disposition>urn:epcglobal:cbv:disp:active</disposition>
    <readPoint>
      <id>urn:epc:id:sgln:0123459.99999.0</id>
    </readPoint>
    <bizLocation>
      <id>urn:epc:id:sgln:0123459.99999.0</id>
    </bizLocation>
  </ObjectEvent>
  <AggregationEvent>
    <!-- AGGREGATION OF 8 CARTONS INTO FULL CASE 01 -->
    <eventTime>2021-05-31T12:02:16.000Z</eventTime>

```

```

<eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
<parentID>urn:epc:id:sgtin:0123459.305512.Y4QOQBH0VWV1</parentID>
<childEPCs>
  <epc>urn:epc:id:sgtin:0123459.005512.01QA00001TY</epc>
  <epc>urn:epc:id:sgtin:0123459.005512.011ABRG0001</epc>
  <epc>urn:epc:id:sgtin:0123459.005512.01ASAS000Q1</epc>
  <epc>urn:epc:id:sgtin:0123459.005512.01TDFFSF5RE</epc>
  <epc>urn:epc:id:sgtin:0123459.005512.01GDGDGDG34</epc>
  <epc>urn:epc:id:sgtin:0123459.005512.01100000003</epc>
  <epc>urn:epc:id:sgtin:0123459.005512.01YUTTYEYEQF</epc>
  <epc>urn:epc:id:sgtin:0123459.005512.014545RF98F</epc>
</childEPCs>
<action>ADD</action>
<bizStep>urn:epcglobal:cbv:bizstep:packing</bizStep>
<readPoint>
  <id>urn:epc:id:sgln:0123459.99999.0</id>
</readPoint>
<bizLocation>
  <id>urn:epc:id:sgln:0123459.99999.0</id>
</bizLocation>
</AggregationEvent>
<AggregationEvent>
  <!-- AGGREGATION OF 8 CARTONS INTO FULL CASE 02-->
  <eventTime>2021-05-31T12:02:17.000Z</eventTime>
  <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
  <parentID>urn:epc:id:sgtin:0123459.305512.A4QIY780KL6M</parentID>
  <childEPCs>
    <epc>urn:epc:id:sgtin:0123459.005512.01TYEWEW56E</epc>
    <epc>urn:epc:id:sgtin:0123459.005512.01HNCEFGT33</epc>
    <epc>urn:epc:id:sgtin:0123459.005512.01YIQWQWWG6</epc>
    <epc>urn:epc:id:sgtin:0123459.005512.01RQYURTBHR</epc>
    <epc>urn:epc:id:sgtin:0123459.005512.01RFFFEW557</epc>
    <epc>urn:epc:id:sgtin:0123459.005512.01JFGSDFBNJ</epc>
    <epc>urn:epc:id:sgtin:0123459.005512.01TRFDFFSDF</epc>
    <epc>urn:epc:id:sgtin:0123459.005512.01TEFFEREFV</epc>
  </childEPCs>
  <action>ADD</action>
  <bizStep>urn:epcglobal:cbv:bizstep:packing</bizStep>
  <readPoint>
    <id>urn:epc:id:sgln:0123459.99999.0</id>
  </readPoint>
  <bizLocation>
    <id>urn:epc:id:sgln:0123459.99999.0</id>
  </bizLocation>

```



```

        </bizLocation>
    </AggregationEvent>
    <AggregationEvent>
        <!-- AGGREGATION OF 2 FULL CASES INTO A PALLET-->
        <eventTime>2021-05-31T12:02:22.000Z</eventTime>
        <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
        <parentID>urn:epc:id:sscc:0123459.0001000516</parentID>
        <childEPCs>
            <epc>urn:epc:id:sgtin:0123459.305512.Y4QQQBH0VWV1</epc>
            <epc>urn:epc:id:sgtin:0123459.305512.A4QIY780KL6M</epc>
        </childEPCs>
        <action>ADD</action>
        <bizStep>urn:epcglobal:cbv:bizstep:packing</bizStep>
        <readPoint>
            <id>urn:epc:id:sgln:0123459.99999.0</id>
        </readPoint>
        <bizLocation>
            <id>urn:epc:id:sgln:0123459.99999.0</id>
        </bizLocation>
    </AggregationEvent>
    <ObjectEvent>
        <!-- Shipping Event -->
        <eventTime>2021-05-31T12:02:25.000Z</eventTime>
        <eventTimeZoneOffset>+05:30</eventTimeZoneOffset>
        <epcList>
            <epc>urn:epc:id:sscc:0123459.0001000516</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:0123459.99999.0</id>
        </readPoint>
        <bizTransactionList>
            <bizTransaction
type="urn:epcglobal:cbv:btt:desadv">urn:epcglobal:cbv:bt:0123459999999:0105</bizTransaction>
            </bizTransactionList>
        <extension>
            <sourceList>
                <source
type="urn:epcglobal:cbv:sdt:owning_party">urn:epc:id:sgln:0123459.99999.0</source>
            </sourceList>
            <destinationList>

```

```

                                <destination
type="urn:epcglobal:cbv:sdt:owning_party">urn:epc:id:sgln:0333333.00000.0</destination>
                                <destination
type="urn:epcglobal:cbv:sdt:location">urn:epc:id:sgln:0356787.00040.0</destination>
                                </destinationList>
                        </extension>
                </ObjectEvent>
        </EventList>
</EPCISBody>
</epcis:EPCISDocument>

```

Table 16 EPCIS: Local Manufacture Example

4.5.8 EPCIS Message Response Examples

1. Success

```

<?xml version="1.0" encoding="UTF-8" ?>
<Response>
  <statustype>I</statustype>
  <code>202</code>
  <date>2021-07-20T09:36:47.127Z</date>
  <messageid>660d45b4-360c-51b5-8645-1192e09ac44c</messageid>
  <status>
    <reason>Message accepted for Tatmeen Processing, the message status can be viewed in the message
status query</reason>
    <code>I001</code>
  </status>
</Response>

```

2. Connectivity Error

```

<?xml version="1.0" encoding="UTF-8" ?>
<Response>
  <statustype>E</statustype>
  <code>500</code>
  <date>2021-07-20T09:36:47.127Z</date>
  <messageid>660d45b4-360c-51b5-8645-1192e09ac44c</messageid>
  <status>
    <reason>Tatmeen applications not reachable, try later</reason>
    <code>E001</code>
  </status>
</Response>

```

3. System Error

```
<?xml version="1.0" encoding="UTF-8" ?>
<Response>
  <statustype>E</statustype>
  <code>500</code>
  <date>2021-07-20T09:36:47.127Z</date>
  <messageid>660d45b4-360c-51b5-8645-1192e09ac44c</messageid>
  <status>
    <reason>Invalid Import Permit</reason>
    <code>E002</code>
  </status>
</Response>
```

4. Mapping Error

```
<?xml version="1.0" encoding="UTF-8" ?>
<Response>
  <statustype>E</statustype>
  <code>500</code>
  <date>2021-07-20T09:36:47.127Z</date>
  <messageid>660d45b4-360c-51b5-8645-1192e09ac49c</messageid>
  <status>
    <reason>Mandatory field GTIN – 6290000012347 length not valid</reason>
    <code>E003</code>
  </status>
</Response>
```

4.6 EPCIS Message Status Format

The intention is for the Tatmeen system to provide the message status for EPCIS messages technically accepted by Tatmeen.

The MAH (or their delegated technical partner) sends a query message to the Tatmeen solution to determine the status they have sent to the Tatmeen solution.

The response from the Tatmeen solution provides a series of system log entries that are shared with the technical user of the sending party.

The response is an overall status for the messages, followed by a list of the log responses from the Tatmeen solution. These responses are organised into a response list to publish the Tatmeen solution responses to the message received by that system.

There are two elements in each entry of the status log response:

- Log type
- Log Message

Type	Meaning
S	Successful
W	Successful with Warnings
E	Application Error
A	Technical Error
C	Cancelled
U	Unknown

Table 17 Message Status Query Types

1. Message Status Query

```
<?xml version="1.0" encoding="utf-8"?>
<tatmeenMsgStatusQuery>
  <language>E</language>
  <instanceIdentifier>52540081D8101edA8FA0FF68B3CA74E3</instanceIdentifier>
</tatmeenMsgStatusQuery>
```

2. Message Status Query Response

```
<?xml version="1.0" encoding="UTF-8" ?>
<tatmeenResponse>
  <instanceIdentifier>52540081D8101edA8FA0FF68B3CA74E3</instanceIdentifier>
  <messagestatus>A - Technical Error</messagestatus>
  <logList>
    <log>
      <type>S</type>
      <message>Message (0022480D59801EEC92A4353791A4B3EB) processing started.</message>
    </log>
  </logList>
```

```
<type>A</type>
<message>Object Event failed, all changes in the event have been reverted</message>
</log>
<log>
  <type>E</type>
  <message>Event on 18.11.2021 12:02:11 failed. (1)</message>
</log>
<log>
  <type>E</type>
  <message>Activity Create /Commission is invalid as object exists already</message>
</log>
<log>
  <type>I</type>
  <message>Invalid object: 123456-3111113-ASADSFSDSRT(SGTIN)</message>
</log>
</logList>
</tatmeenResponse>
```

5 Glossary

General short terms and abbreviations can be found in the Global Glossary (see Section **Error! Reference source not found.**, Reference Documents).

Short Term	Description
3PL	3 rd Party Logistics
API	Application Programming Interface
BE-2-CS	The aggregation hierarchy where packaged “bundles” are packed into a “case”.
EA-2-BE	The aggregation hierarchy where secondary packaged items, i.e., “eaches” are packed into a “bundle”.
EPCIS	Electronic Product Code Information Services
ESB	Enterprise Service Bus
GTIN	Global Trade Item Number
HTTP(s)	Hypertext Transfer Protocol
ILMD	Item Level Master Data is the GS1 EPCIS master data extension segment within the product item commissioning event.
MAH	Marketing Authorization Holder
REST	Representational State Transfer
SC	Supply Chain
SGTIN	Serialized Global Trade Item Number
SHP	Shipping Import Permit, the UAE document for importing pharmaceutical products into the UAE.
SPOC	Single Point of Contact, being the individual in a business partner organisation responsible for managing the interactions with the Tatmeen system.
SSCC	Serial Shipping Container Code
URN	Uniform Resource Name, is a Uniform Resource Identifier (URI) that uses the urn scheme. URNs are globally unique persistent identifiers assigned within defined namespaces.
UTC	Coordinated Universal Time, which is the time standard commonly used across the world.

Short Term	Description
VPN	Virtual Private Network
WSDL	Web Service Definition Language
XML	Extensible Markup Language

Table 18 Glossary