

# Technical Guide for Dispensers

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**Version:** 3.0

# 1 Document Control

## 1.1 Version History

Version	Date	Description of Change
1.0	10-Jan-2022	Initial Release.
2.0	21-Mar-2022	Minor changes in the document.
3.0	20-Nov-2023	Updated with production endpoints Added the product verification service documentation

*Table 1 Version History*

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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 product 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 dispensing of pharmaceutical products.

Participant	Description
Clinics	Any clinical facility, dispensing medicines that are regulated by MoHAP.

Participant	Description
Dispensers	A partner providing pharmacy services to provide accurate, timely and qualitative medical product dispensing services to registered patients.
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 and storage.
Hospitals	Hospitals include: <ul style="list-style-type: none"> <li>• Private hospitals</li> <li>• MoHAP hospitals</li> <li>• DHA/DHCC hospitals</li> <li>• DoH hospitals</li> </ul>
Pharmacies	Pharmacies include: <ul style="list-style-type: none"> <li>• Private pharmacies</li> <li>• MoHAP pharmacies</li> <li>• Any other facility dispensing regulated medicines.</li> </ul>

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 dispensing participants such as pharmacies, hospitals, and clinics for the following process:

1. Dispensing medical products within the UAE.
2. Product verification.

Any of the facilities that are dispensing participants are also expected to send any logistics activity information to the Tatmeen traceability system and as such any of the logistics related processes are described in the document, “Tatmeen\_WKI-0064\_Technical Guide for Logistics“. Logistics related processes include:

- Product transfer (shipping; receiving; other variants of shipping / receiving).
- Receiving, and variants of receiving.
- Hierarchy change (packing; unpacking)
- Status change (damaged; stolen; lost)
- Destruction process

## 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"> <li>EPCIS message events.</li> <li>EPCIS message status.</li> </ul>
Section 4	Technical API Guidelines, providing usage guidelines for the technical API to submit data to the Tatmeen traceability system.
Section 5	EPCIS message formats and examples of messages.
Section 7	OData message formats and examples of messages.
Section 7	Summary Overview of Message profile.
Section 8	Glossary

Table 3 Document Structure

## 2.4 Prerequisites

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

- Product Registration:

All products subject to the UAE MoHAP legislation (registered drugs; unregistered drugs) should be known in the appropriate MoHAP / Federal system, and these should also be known in the GS1 BrandSync master data system. This product's information is synchronised between the BrandSync system and the Tatmeen solution.

Any medical product is approved by MoHAP either as:

- Registered product.
- Unregistered product approved for limited use for the medical product.

- Entity Registration:

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- All Distributors (and relevant 3PLs) involved in the storage or distribution of medical products should be known as supply chain partners and should be allocated a GS1 Global Location Number (GLN).
- All Dispensers (including hospitals and clinics) involved in dispensing medical products should be registered as supply chain partners and are allocated a GS1 Global Location Number (GLN).



## 3 Message Guidelines

From the perspective of a Dispenser, the following are the scenarios relevant to capture an event and send it to the Tatmeen system.

This section describes the messaging responsibilities of the participants for the processes in Section 12.2:

- Dispensing medical products within the UAE:
  - Dispensing request for serialised container.
  - Dispensing request for serialised product item.

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

- 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 Dispensing Request for Serialised Container

The process starts with Dispensers identifying the serialised container intended to be dispensed and to send those details to the Tatmeen system requesting validation and confirmation of dispensing. Necessary checks are performed by the Tatmeen system returning the relevant response or error notification. This is repeated for each serialised container that shall be dispensed.

1. Dispensers must report to Tatmeen in standard GS1 EPCIS.
2. For this scenario, Dispensers must use the GS1 EPCIS compliant Serialised Container Dispense Request event type described in Section 5.3.1.
3. Each message document must consist of a single event message containing a single serialised container.
4. Every EPCIS message must contain an EPCIS Header to capture the message sender information.
5. Instance Identifier, Creation Date and Time, Sender Identifier and Receiver Identifier must be available for message traceability.
6. Message Size must not exceed more than 1 MB, since this is synchronous communication.

### 3.1.1 Business Process Outline

Dispensing pharmaceutical products under the UAE MoHAP legislation requires that pharmaceutical product serialised identifiers are recorded when they are dispensed to a patient or when sold to a consumer. The dispensing partner must request verification of the serialised container being dispensed before the activity is concluded.

1. The serialised container identifier intended to be dispensed is collected either by scanning the barcodes with a scanner device or entering the data manually from the human readable SSCC data on the container packaging.
2. This data listing the serialised container (SSCC) is sent to the Tatmeen system in the format of an EPCIS message as described in Section 3.1.
3. The Tatmeen solution determines according to MoHAP rules whether the contents of the serialised container are compliant with the Tatmeen rules including authenticity and status checks.
4. A message response is transmitted to the dispensing partner confirming the success or failure of the request. In the case where the message fails, the Tatmeen system records an alert notification. Serialised containers that fail the checks must not be dispensed. They can be unpacked so that individually the product items are dispensed according to the process described in Section 3.2.
5. In the case that the request succeeds, each of the serialised container product item contents is updated in the Tatmeen solution, and its status is updated to record that those product items are collectively dispensed.
6. This completes the tracking activities for the Dispenser for a single serialised container. These steps are repeated for each serialised container identified for dispensing activities.

### 3.1.2 Constraints and Validations

This dispensing activity is the culmination of the supply, storage and distribution processes and signifies the product is allocated to the patient or consumer. This activity ensures no falsified medicines are dispensed as the Dispenser must request a check against the Tatmeen system before issuing medicines or pharmaceutical products.

In order to ensure this integrity of the dispensed products, the Tatmeen solution expects to receive from the dispensing partner:

1. A single EPCIS message for each serialised container that is to be dispensed.
2. Each EPCIS message must contain an EPCIS Header, that specifies:

- a. A unique message identifier that is generated by the Dispenser and is used to identify each EPCIS message.
  - b. The message creation date and time.
  - c. The message sender information, i.e., the Dispenser's GLN.
  - d. The identifier for the relevant Tatmeen system that will receive the EPCIS message.
3. Each of the EPCIS event components of each dispensing message in Section 5. The following constraints must apply to any EPCIS message for dispensing:
- a. A single dispensing event is contained in the message document.
  - b. In this scenario, a single EPC serialised container identifier is contained in the message.

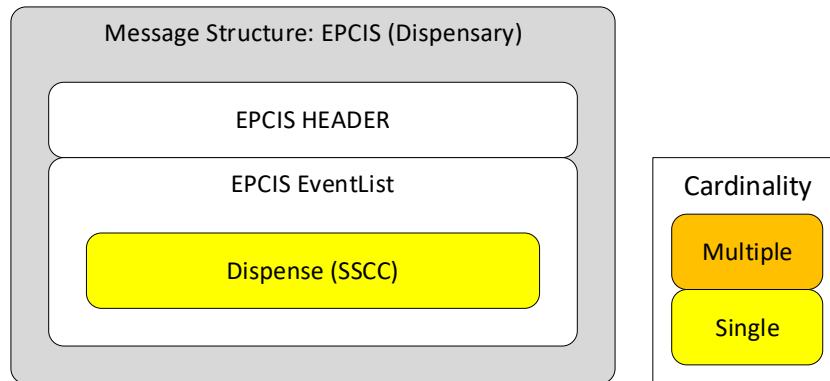


Figure 1 Dispensing SSCC EPCIS Message Structure

4. The total EPCIS message size must not exceed 1 MB.
5. The EPCIS message is always a synchronous message where the Dispenser sends the Dispense Request EPCIS message and then waits for the Tatmeen solution technical response to complete the messaging activity.

### 3.2 Dispensing Request for Serialised Item

The process starts with Dispensers identifying the serialised product item(s) intended to be dispensed to Tatmeen system. Each of the serialised items details must be sent to the Tatmeen system requesting validation and confirmation of dispensing for that product item. Necessary checks are performed by the Tatmeen system returning the relevant response or error notification.

1. Dispensers must report to Tatmeen in standard GS1 EPCIS.
2. Dispensers must use standard GS1 EPCIS event types listed below:
  - a. Serialised Item Dispense Request.
3. Each message document must consist of a single event message containing a single serialised product item.
4. Every EPCIS message must contain an EPCIS Header to capture the message sender information.
5. Instance Identifier, Creation Date and Time, Sender Identifier and Receiver Identifier must be available for message traceability.
6. Message Size must not exceed more than 1 MB, since this is synchronous communication.

### 3.2.1 Business Process Outline

Dispensing pharmaceutical products under the UAE MoHAP legislation requires that pharmaceutical product serialised product items are recorded when they are dispensed to a patient or when sold to a consumer. The dispensing partner must request verification of the serialised product item being dispensed before the activity is concluded.

Dispensing pharmaceutical products under the UAE MoHAP legislation requires that pharmaceutical product serialised identifiers are recorded when they are dispensed to a patient or when sold to a consumer. During the actual dispensing activities, the dispensing partner must request verification of each item being dispensed before the activity is concluded.

1. The serialised product item identifier intended to be dispensed is collected either by scanning the 2D-DataMatrix barcode with a scanner device or entering the data manually from the human readable data on the packaging. For product items, the GTIN, Serial Number, Batch/Lot Number, and Expiry date are all required data elements for the dispensing activity.
2. The serialised item (SGTIN) information is sent to the Tatmeen system in the format of an EPCIS message as described in Section 5.3.2.
3. The Tatmeen solution determines according to MoHAP rules whether the product item is suitable for the dispensing activity including authenticity and status checks.
4. A message response is transmitted to the dispensing partner confirming the success or failure of the request. In the case where the message fails, the Tatmeen system records an alert notification. The serialised product item that fails the checks must not be dispensed.

5. In the case that the request succeeds, the serialised product item status in the Tatmeen solution is updated to record that the product is dispensed.
6. This completes the tracking activities for the Dispenser for a single serialised product item. These steps are repeated for each serialised product item identified for dispensing activities.

### 3.2.2 Constraints and Validations

This dispensing activity is the culmination of the supply, storage and distribution processes and signifies the specific serialised product item is allocated to the patient or consumer. This activity ensures no falsified medicines are dispensed as the Dispenser must request a check against the Tatmeen system before issuing medicines or pharmaceutical products.

In order to ensure this integrity of the dispensed products, the Tatmeen solution expects to receive from the dispensing partner:

1. A single EPCIS message for the serialised product item that is to be dispensed.
2. Each EPCIS message must contain an EPCIS Header, that specifies:
  1. A unique message identifier that is generated by the Dispenser and is used to identify each EPCIS message.
  2. The message creation date and time.
  3. The message sender information, i.e., the Dispenser's GLN.
  4. The identifier for the relevant Tatmeen system that will receive the EPCIS message.
3. Each of the EPCIS event components of each dispensing message (Section 5). The following constraints must apply to any EPCIS message for dispensing:
  1. A single dispensing event is contained in the message.
  2. In this scenario, a single EPC serialised product item identifier is contained in the message.

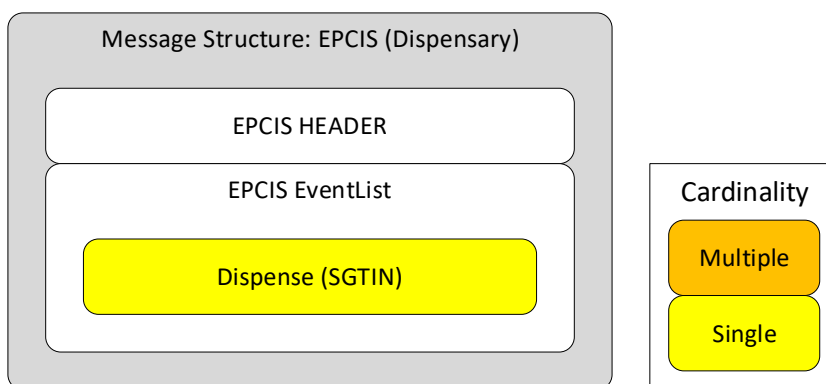


Figure 2 Dispensing SGTIN EPCIS Message Structure

4. The total EPCIS message size must not exceed 1 MB.
5. The EPCIS message is always a synchronous message where the Dispenser sends the Dispense Request EPCIS message and then waits for the Tatmeen solution technical response to complete the messaging activity.

## 4 API Specification

During the business partner onboarding process, the facility 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 (Dispenser) SPOC must register a technical user following the user 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 business partner 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 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	<a href="https://stgapim.tatmeen.ae:443/v1">https://stgapim.tatmeen.ae:443/v1</a>	/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	<a href="https://apim.tatmeen.ae/v1">https://apim.tatmeen.ae/v1</a>	/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 Dispensing partner activities.

#### 4.3.1 Staging Service Endpoints

IP Range	Service URL	Operations	Description
x.x.x.x	<a href="https://stgapim.tatmeen.ae:443/v1">https://stgapim.tatmeen.ae:443/v1</a>	/Dispensation	EPCIS Message Events
x.x.x.x	<a href="https://stgapim.tatmeen.ae:443/v1">https://stgapim.tatmeen.ae:443/v1</a>	/VerifyProduct	Service for Product Verification

Table 6 Service Test Endpoints



### 4.3.2 Live Service Endpoints

IP Range	Service URL	Operations	Description
x.x.x.x	<a href="https://apim.tatmeen.ae/v1">https://apim.tatmeen.ae/v1</a>	/Dispensation	EPCIS Message Events
x.x.x.x	<a href="https://apim.tatmeen.ae/v1">https://apim.tatmeen.ae/v1</a>	/VerifyProduct	Service for Product Verification

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
Product Verification Query	OData Activity	Tatmeen OData API

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](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](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.

## 5 EPCIS Message Format

This section provides detailed information about the format of the EPCIS messages that should be sent by the Dispenser participant to the Tatmeen system. 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.

### 5.1 EPCIS: Custom Tatmeen Namespace

To allow custom Tatmeen vocabulary within the EPCIS messages, some 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/"
```

Although not used in the dispensing request event, this section is retained for general reference.

### 5.2 EPCIS: Header Attributes

All EPCIS messages originating from a Dispenser 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 registered Dispenser 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>

Element	Occurrence & Format	Description	Example
<Sender><Identifier>	Mandatory	The Authority is always “GS1”, followed by the GLN representing the Sender Application or the GLN for the Dispenser business partner in standard 13-digit format.	<sbdh:Sender> <sbdh:Identifier Authority="GS1"> <b>Sender GLN</b> </sbdh:Identifier> </sbdh:Sender>
<Receiver><Identifier>	Mandatory	The Authority is always “GS1”, followed by the Receiver GLN. This is always the Tatmeen system GLN. This is always the Tatmeen system GLN (see <b>Error! Reference source not found</b> .for valid values).	<sbdh:Receiver> <sbdh:Identifier Authority="GS1"> <b>Tatmeen GLN</b> </sbdh:Identifier> </sbdh:Receiver>
<DocumentIdentification><sbdh:Standard>	Mandatory	Constant Value "EPCglobal".	<sbdh:Standard> <b>EPCglobal</b> </sbdh:Standard>
<sbdh:TypeVersion>	Mandatory	Constant Value "1.0" that matches the 'xsd:schema' version for ATTP.	<sbdh:TypeVersion> <b>1.0</b> </sbdh:TypeVersion>
<InstanceIdentifier>	Mandatory	A unique message identifier issued by the Dispenser. This is limited to a maximum of 40 alphanumeric characters.	<sbdh:InstanceIdentifier> <b>e999f82e7828a9633d977c64016a8f81</b> </sbdh:InstanceIdentifier>
<sbdh:Type>	Mandatory	Constant Value "Events" from GS1 standard.	<sbdh:Type> <b>Events</b> </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

The message header <Receiver><Identifier> values are:

Environment	Tatmeen GLN
Pre-Production / Staging	6297001273005
PRODUCTION	6297001273036

Table 10 Tatmeen GLN Receiver Identifiers

## 5.3 EPCIS Dispensing Request

### 5.3.1 Serialised Container (SSCC) Attributes

The EPCIS message attributes for the dispensing request event for a serialised container (SSCC) are listed below.

	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	For this scenario, a list that contains a single serialised container (SSCC) EPC.	<epcList> <epc>urn:epc:id:sscc:123456.02029914567</epc> </epcList>
	<action>	Mandatory	Constant Value from “xsd:schema” for the event type action (see Section 7 for overview).	<action> <b>OBSERVE</b> </action>
	<bizStep>	Mandatory	Constant standard value, “retail_selling”. The business step representing the event activity (see Section 7 for overview).	<bizStep>urn:epcglobal:cbv:bizstep: <b>retail_selling</b> </bizStep>
	<disposition>	Mandatory	Constant standard value, “retail_sold”. The disposition qualifying the event activity (see Section 7 for overview).	<disposition>urn:epcglobal:cbv:disp: <b>retail_sold</b> </disposition>
	<readpoint>	Mandatory	The read point must be the GLN in GS1 URN SGLN format of the Dispenser.	<readPoint> <id>urn:epc:id:sgln:123456.789101.0</id> </readPoint>
	<bizLocation>	Mandatory	The business location must be the same GLN in GS1 URN SGLN format as the <readpoint>.	<bizLocation> <id>urn:epc:id:sgln:123456.789101.0</id> </bizLocation>

Table 11 Dispensing Request Attributes for Serialised Container (SSCC)

### 5.3.2 Serialised Product Item (SGTIN)

The EPCIS message attributes for the dispensing request event for a serialised product item (SGTIN) are listed below.

	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	For this scenario, a list that contains a single serialised product item (SGTIN) EPC.	<epcList> <epc>urn:epc:id:sgtin:123456.0202991.AFA0UM128F4C</epc> </epcList>
	<action>	Mandatory	Constant Value from “xsd:schema” for the event type action (see Section 7 for overview).	<action> <b>OBSERVE</b> </action>
	<bizStep>	Mandatory	Constant standard value, “retail_selling”. The business step representing the event activity (see Section 7 for overview).	<bizStep>urn:epcglobal:cbv:bizstep: <b>retail_selling</b> </bizStep>
	<disposition>	Mandatory	Constant standard value, “retail_sold”. The disposition qualifying the event activity (see Section 7 for overview).	<disposition>urn:epcglobal:cbv:disp: <b>retail_sold</b> </disposition>
	<readpoint>	Mandatory	The read point must be the GLN in GS1 URN SGLN format of the Dispenser.	<readPoint> <id>urn:epc:id:sgln:123456.789101.0</id> </readPoint>
	<bizLocation>	Mandatory	The business location must be the same GLN in GS1 URN SGLN format as the <readpoint>.	<bizLocation> <id>urn:epc:id:sgln:123456.789101.0</id> </bizLocation>
Extension	<cbvmda:lotNumber>	Mandatory	Mandatory for this scenario and represents the single manufacturers Lot	<cbvmda:lotNumber>L123456</cbvmda:lotNumber>

Element	Occurrence & Format	Description	Example
		number contained in the product item barcode.	
<cbvmda:itemExpirationDate>	Mandatory	Mandatory for this scenario and represents the expiry date recorded in the product item barcode in abbreviated ISO 8601 format (YYYY-MM-DD).	<cbvmda:itemExpirationDate>2023-02-28</cbvmda:itemExpirationDate>

Table 12 Dispensing Request Attributes for Serialised Product Item (SGTIN)

## 5.4 EPCIS (Technical) Message Response

The following technical responses will provide immediate confirmation regarding delivery of the EPCIS event message described in the previous sections to the Tatmeen solution. The Tatmeen system returns standard HTTP/HTTPS codes to the Dispensing partner. 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 are 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 Dispenser 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
200	I001	Information	N/A	OK
500	E901	Internal Error	Retry	Tatmeen applications not reachable
500	E900	Internal Error	No Retry	Invalid GLN
500	E900	Internal Error	No Retry	Mandatory Field <FieldName> is missing

Table 13 Technical Acknowledgments

## 5.5 EPCIS Message Examples

In this section there are examples of the dispensing request event under two scenarios:

- Dispense serialised container
- Dispense serialised product item

### 5.5.1 EPCIS Serialised Container Dispense Request Example

```
<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">
  <EPCISHeader>
    <sbdh:StandardBusinessDocumentHeader>
      <sbdh:HeaderVersion>1.3</sbdh:HeaderVersion>
      <sbdh:Sender>
        <sbdh:Identifier
Authority="GS1">0123456789005</sbdh:Identifier>
        </sbdh:Sender>
      <sbdh:Receiver>
        <sbdh:Identifier
Authority="GS1">6297001273005</sbdh:Identifier>
        </sbdh:Receiver>
      <sbdh:DocumentIdentification>
        <sbdh:Standard>EPCglobal</sbdh:Standard>
        <sbdh:TypeVersion>1.0</sbdh:TypeVersion>
        <sbdh:InstanceIdentifier>2f1bdabdfae464c87e1aeb7e586e6ab</sbdh:InstanceIdentifier>
        <sbdh:Type>Events</sbdh:Type>
        <sbdh:CreationDateAndTime>2021-01-
28T07:21:26Z</sbdh:CreationDateAndTime>
      </sbdh:DocumentIdentification>
    </sbdh:StandardBusinessDocumentHeader>
  </EPCISHeader>
  <EPCISBody>
    <EventList>
      <ObjectEvent>
        <!-- Product Dispensation (dispensing) Request -->
        <eventTime>2021-01-28T07:21:19.000Z</eventTime>
        <eventTimeZoneOffset>+04:00</eventTimeZoneOffset>
        <epcList>
          <epc>urn:epc:id:sscc:123456.02029914567</epc>
        </epcList>
      </ObjectEvent>
    </EventList>
  </EPCISBody>
</epcis:EPCISDocument>
```

```

        <action>OBSERVE</action>
        <bizStep>urn:epcglobal:cbv:bizstep:retail_selling</bizStep>
    <disposition>urn:epcglobal:cbv:disp:retail_sold</disposition>
    <readPoint>
        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </readPoint>
    <bizLocation>
        <id>urn:epc:id:sgln:0123456.99999.0</id>
    </bizLocation>
</ObjectEvent>
</EventList>
</EPCISBody>
</epcis:EPCISDocument>

```

Table 14 Dispensing Request Example – Serialised Container (SSCC)

## 5.5.2 EPCIS Serialised Product Item Dispense Request Example

```

<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">
    <EPCISHeader>
        <sbdh:StandardBusinessDocumentHeader>
            <sbdh:HeaderVersion>1.3</sbdh:HeaderVersion>
            <sbdh:Sender>
                <sbdh:Identifier
Authority="GS1">0123456789005</sbdh:Identifier>
                </sbdh:Sender>
            <sbdh:Receiver>
                <sbdh:Identifier
Authority="GS1">6297001273005</sbdh:Identifier>
                </sbdh:Receiver>
            <sbdh:DocumentIdentification>
                <sbdh:Standard>EPCglobal</sbdh:Standard>
                <sbdh:TypeVersion>1.0</sbdh:TypeVersion>
                <sbdh:InstanceIdentifier>2f1bdabdfae464c87e1aeb7e586e6ab</sbdh:InstanceIdentifier>
                <sbdh:Type>Events</sbdh:Type>
                <sbdh:CreationDateAndTime>2021-01-
28T07:21:26Z</sbdh:CreationDateAndTime>
            </sbdh:DocumentIdentification>
        </sbdh:StandardBusinessDocumentHeader>
    </EPCISHeader>
    <EPCISBody>
        <EventList>

```



```

<ObjectEvent>
  <!--Product Dispensation (dispensing) Request-->
    <eventTime>2021-01-28T07:21:19.000Z</eventTime>
    <eventTimeZoneOffset>+04:00</eventTimeZoneOffset>
    <epcList>

    <epc>urn:epc:id:sgtin:0123456.305512.NP2P2236YDY7</epc>
    </epcList>
    <action>OBSERVE</action>
    <bizStep>urn:epcglobal:cbv:bizstep:retail_selling</bizStep>
    <disposition>urn:epcglobal:cbv:disp:retail_sold</disposition>
    <readPoint>
      <id>urn:epc:id:sgln:0123456.99999.0</id>
    </readPoint>
    <bizLocation>
      <id>urn:epc:id:sgln:0123456.99999.0</id>
    </bizLocation>
    <cbvmda:lotNumber>L123456</cbvmda:lotNumber>
    <cbvmda:itemExpirationDate>L123456
    </cbvmda:itemExpirationDate>
  </ObjectEvent>
</EventList>
</EPCISBody>
</epcis:EPCISDocument>

```

Table 15 Dispensing Request Example – Serialised Product Item (SGTIN)

## 5.6 EPCIS Message Status Response

The intention is for the Tatmeen system to provide the message status response for each Dispense Request synchronous EPCIS message. The synchronous response from the Tatmeen solution provides both a technical response and an application response consisting of a series of system log entries.

The header of the response presents the overall status for the message, 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 synchronous message response:

- Log type
- Log Message

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

Table 16 Message Status Response Types

## 5.7 EPCIS Message Status Response Examples

### 5.7.1 Success

```
<?xml version="1.0" encoding="UTF-8" ?>
<tatmeenResponse>
  <instanceIdentifier>2f1bdabdfae466664c87e1aeb7e586e6ab</instanceIdentifier>
  <messagestatus>S</messagestatus>
  <logList>
    <log>
      <type>l</type>
      <message>Object Event received from urn:epc:id:sgln:0123456.99999.0 Action
OBSERVE</message>
    </log>
    <log>
      <type>l</type>
      <message>BizStep: urn:epcglobal:cbv:bizstep:retail_selling Time:
20210531120211</message>
    </log>
    <log>
      <type>l</type>
      <message>Object Event successful</message>
    </log>
  </logList>
</tatmeenResponse>
```

Table 17 Success Response

## 5.7.2 Data Error

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
<soap:Header/>
<soap:Body>
  <Response>
    <statustype>E</statustype>
    <code>400</code>
    <date>2022-01-28T10:14:41.990Z</date>
    <messageid>2f1bdabdfaee466664c87e1aeb7e586e6ab</messageid>
    <status>
      <reason>Invalid Tatmeen GLN - 78945612300056</reason>
      <code>E900</code>
    </status>
  </Response>
</soap:Body>
</soap:Envelope>
```

Table 18 Connectivity Error Response

## 5.7.3 System Error

```
<?xml version="1.0" encoding="UTF-8" ?>
  <tatmeenResponse>
    <instanceIdentifier>3f1bdabdfaee466664c87e1ukb7e586e6ab</instanceIdentifier>
    <messagestatus>E</messagestatus>
    <logList>
      <log>
        <type>I</type>
        <message>Object Event received from urn:epc:id:sgln:0123456.99999.0 Action
OBSERVE</message>
      </log>
      <log>
        <type>I</type>
        <message>BizStep: urn:epcglobal:cbv:bizstep:retail_selling Time:
20210531120211</message>
      </log>
      <log>
        <type>E</type>
        <message>Instance Identifier is not Unique</message>
      </log>
    </logList>
  </tatmeenResponse>
```

Table 19 System Error Response

## 6 SOAP Message Format

This section provides detailed information about the format of the SOAP Services and message events that may be sent by the logistics partner organisations to the Tatmeen system.

It is assumed that the recipient of this document is familiar with SOAP services and the technical details described in the subsequent sections.

### 6.1 Product Verification Service

The Tatmeen system provides a product verification service where the Dispenser participant sends a query message to the Tatmeen solution to determine the status of an object (SGTIN or SSCC) that are located at the Dispenser's facility.

The response from the Tatmeen solution provides a confirmation of the object ID and the current status of the successfully queried object.

#### 6.1.1 SGTIN Product Verification Query

```
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope">
  <env:Header/>
  <env:Body>
    <ProductVerificationRequest>
      <GeoLatitude/>
      <GeoLongitude/>
      <Language>E</Language>
      <ProductID>urn:epc:id:sgtin:6295000041.055.01118926886313825</ProductID>
    </ProductVerificationRequest>
  </env:Body>
</env:Envelope>
```

Table 20 SGTIN Product Verification Query Example

#### 6.1.2 SSCC Product Verification Query

```
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope">
  <env:Header/>
  <env:Body>
    <ProductVerificationRequest>
      <GeoLatitude/>
      <GeoLongitude/>
      <Language>E</Language>
      <ProductID>urn:epc:id:sscc:6033923.1189268863</ProductID>
```

```

        </ProductVerificationRequest>
    </env:Body>
</env:Envelope>

```

Table 21 SGTIN Product Verification Query Example

### 6.1.3 Product Verification Success Response

```

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
  <soap:Header/>
  <soap:Body>
    <ProductVerificationResponse>
      <ProductDetails>
        <ProductID>(01)06295000041557(21)01118926886313825</ProductID>
        <GLN>6295000041663</GLN>
        <LocationName>AL Taweelah Medical Center</LocationName>
        <LocationNumber>
          <RegulationAuthority>DHCC</RegulationAuthority>
          <RegulationLicense>132</RegulationLicense>
        </LocationNumber>
        <GeoLongitude>25.111144586569</GeoLongitude>
        <GeoLatitude>55.280821232987</GeoLatitude>
        <ProductDescription>LacArte    Splash    EDO    100mg    LacArte    Splash    EDO
100mg</ProductDescription>
        <LotNumber>PKY11417</LotNumber>
        <DateOfManufacture>2023-05-24</DateOfManufacture>
        <DateOfExpiry>2022-01-15</DateOfExpiry>
      </ProductDetails>
      <ProductStatusList>
        <ProductStatus>
          <Status>Active</Status>
        </ProductStatus>
        <ProductStatus>
          <Status>Status 2</Status>
        </ProductStatus>
      </ProductStatusList>
    </ProductVerificationResponse>
  </soap:Body>
</soap:Envelope>

```

Table 22 Product Verification Success Response Example

### 6.1.4 Product Verification Error Response

```

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">

```

```

<soap:Header/>
<soap:Body>
  <ProductVerificationResponse>
    <LogList>
      <Log>
        <Type>E</Type>
        <code>E016</code>
        <Message>ID urn:epc:id:sgtin:6295000041.055.01118926886314825 is not verified
successfully!.</Message>
      </Log>
    </LogList>
  </ProductVerificationResponse>
</soap:Body>
</soap:Envelope>

```

Table 23 Product Verification Error Response Example

## 7 EPCIS Message Summary

Activity	Field	Event Type	Action Type	EPC(List)	Business Step	Disposition	Business Transaction Type	Read Point	Business Location
	XML Tag	Variable	<action>	variable	<bizstep>	<disposition>	<bizTransactionType>	<readPoint>	<bizLocation>
	Dimension	EVENT		WHAT	WHY			WHERE	
Dispensing SSCC	<ObjectEvent>	OBSERVE	<epc> sscc	retail_selling	retail_sold			sgln	sgln
Dispensing SGTIN	<ObjectEvent>	OBSERVE	<epc> sgtin	retail_selling	retail_sold			sgln	sgln

Table 24 Summary of EPCIS Message Constant Values

### NOTES:

1. The Action Types apply to the actions being applied to the EPCs in the 'WHAT' dimension above.
2. The 'WHEN' and 'EXTENSION' dimensions are omitted from this table for simplicity.

## 8 Glossary

General short terms and abbreviations can be found in the Global Glossary (see references).

Short Term	Description
3PL	3 <sup>rd</sup> Party Logistics
API	Application Programming Interface
BrandSync	The GS1-UAE master data system that contains all product information
EPCIS	Electronic Product Code Information Services
ESB	Enterprise Service Bus
GLN	Global Location Number
GTIN	Global Trade Item Number
HTTP(s)	Hypertext Transfer Protocol
IT	Information Technology
MoHAP	UAE Ministry of Health And Prevention
REST	Representational State Transfer
SGTIN	Serialised Global Trade Item Number
SSCC	Serial Shipping Container Code
UAE	United Arab Emirates
XML	Extensible Markup Language

Table 25 Glossary