Core Business Vocabulary Standard

Ratified on October 13th, 2010

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Abstract

This document is an EPCglobal normative standard that defines Version 1.0 of Core Business Vocabulary (CBV). The goal of CBV is to specify the structure of vocabularies and specific values for the vocabulary elements to be utilized in conjunction with the Electronic Product Code Information Services (EPCIS) standard for data sharing both within and across enterprises. The aim is to standardize these elements across participants in the EPC Network to improve the understanding of data contained in EPCIS events.

Audience for this document

The target audience for this standard includes:

- Participant implementing the EPCIS standard for the purposes of capturing and sharing event data in the supply chain.
- Parties interested in implementing EPCIS Accessing applications.
- Parties interested in implementing EPCIS Capture applications.

Status of this document

This section describes the status of this document at the time of its publication. Other documents may supersede this document. The latest status of this document series is maintained at EPCglobal. See `www.epcglobalinc.org` for more information.

This document is an EPCglobal **Ratified Standard**. This version of the standard was raitified by the EPCglobal Board of Governors on October 13th, 2010.

Table of Contents

1 Introduction – Core Business Vocabulary

This document is an EPCglobal normative standard that defines the Core Business Vocabulary (CBV). The goal of this standard is to specify various vocabulary elements and their values for use in conjunction with the EPCIS standard, which defines mechanisms to exchange information both within and across company boundaries. The vocabulary identifiers and definitions in this standard will ensure that all parties who exchange EPCIS data using the Core Business Vocabulary will have a common understanding of the semantic meaning of that data.

This standard is intended to provide a basic capability that meets the above goal. In particular, this standard is designed to define vocabularies that are *core* to the EPCIS abstract data model and are applicable to a broad set of business scenarios common to many industries that have a desire or requirement to share data. This standard intends to provide a useful set of values and definitions that can be consistently understood by each party in the supply chain.

Additional end user requirements may be addressed by augmenting the vocabulary elements herein with additional vocabulary elements defined for a particular industry or a set of users or a single user. Additional values for the standard vocabulary types defined in this standard may be included in follow-on versions of this standard.

This standard includes identifier syntax and specific vocabulary element values with their definitions for these *Standard Vocabularies*:

- Business step identifiers
- Disposition identifiers
- Business transaction types

This standard provides identifier syntax options for these *User Vocabularies:*

- Objects
- Locations
- Business transactions

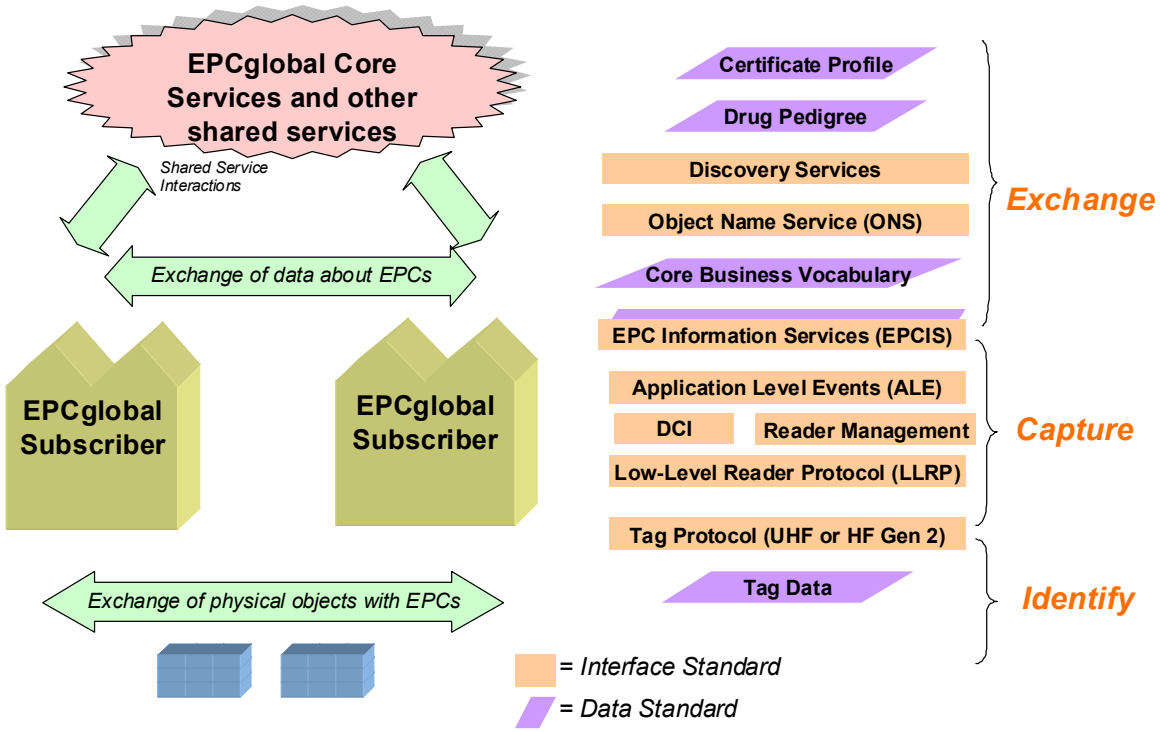
This standard provides *Master Data Attributes and Values* for describing Physical Locations including:

- Site Location
- Sub-Site Type
- Sub-Site Attributes
- Sub-Site Detail

Additional detailed master data regarding locations (addresses, etc) are not defined in this standard.

2 Relationship to the Architecture Framework

As depicted in the diagram below, the Core Business Vocabulary sits at the highest level of the EPCglobal Architecture Framework, both above the level of raw EPC observations (e.g., the Tag Protocol and the Reader Protocol), as well as above the level of filtered, consolidated observations (e.g., the Filtering & Collection Interface). The Core Business Vocabulary is a companion standard to the EPCglobal EPCIS standard. EPCIS is the standard that defines the technical interfaces for capturing and exchanging event data. EPCIS defines a framework data model for event data. The Core Business Vocabulary is an EPCglobal *data standard* that supplements that framework by defining specific data values that may populate the EPCIS data model. In the diagram, the plain green bars denote interfaces governed by EPCglobal standards, the purple bars denote EPCglobal data standards and the blue shadowed boxes denote roles played by hardware and/or software components of the system



3 Relationship to EPCIS

This section specifies how the Core Business Vocabulary standard relates to the EPC Information Services (EPCIS) standard.

3.1 EPCIS Event Structure

The EPCIS 1.0 standard [EPCIS1.0.1] specifies the data elements in an EPCIS event. The following lists these data elements, and indicates where the Core Business Vocabulary provides identifiers that may be used as values for those data elements.

- *The "what" dimension* The *what* dimension for most event types contains one or more unique identifiers for physical objects. Identifiers for physical objects in the Core Business Vocabulary are specified in Section 8.2.
- *The "when" dimension* The moment in time at which an EPCIS event occurred. Event time is fully specified in the EPCIS standard.
- *The "where" dimension* The ñwhereò dimension consists of two identifiers that describe different aspects of where an event occurred:
  - *Read Point* The location where the EPCIS event took place. In the case of an EPCIS event arising from reading an RFID tag, the Read Point is often the location where the RFID reader read the tag. Identifiers for read points in the Core Business Vocabulary are specified in Section 8.3.

Example: A reader is placed at dock door #3 at the London Distribution Center (DC). Product passed through the dock door. Read point = <The identifier that stands for London DC Dock Door #3>

- *Business Location* The location where the subject of the event is assumed to be following an EPCIS event, until a new event takes place that indicates otherwise. Identifiers for business locations in the Core Business Vocabulary are specified in Section 8.3.

  Example: A product is read through the sales floor transition door at store #123. The product is now sitting on the sales floor. Business location = <The identifier that stands for store #123 Sales Floor>

- *The "why" dimension* The ñwhyò dimension consists of two identifiers and a list of business transaction identifiers, which collectively provide the business context or ñwhyò the event occurred:

  - *Business Step* Denotes a specific activity within a business process. The business step field of an event specifies what business process step was taking place that caused the event to be captured. Identifiers for business steps in the Core Business Vocabulary are specified in Section 7.1.

    Example: an EPCIS event is generated as a product departs the location identified by the Read Point. Business Step = <The identifier that denotes "shipping">

  - *Disposition* Denotes the business state of an object. The disposition field of an event specifies the business condition of the subject of the event (the things specified in the ñwhatò dimension), subsequent to the event. The disposition is assumed to hold true until another event indicates a change of disposition. Identifiers for dispositions in the Core Business Vocabulary are specified in Section 7.2.

    Example: an EPCIS event is generated and afterward the products can be sold as-is and customers can access product for purchase. Disposition = <The identifier that denotes "sellable and accessible">

  - *Business Transaction References* An EPCIS event may refer to one or more business transaction documents. Each such reference consists of two identifiers:

    - *Business Transaction Type* Denotes a particular kind of business transaction. *Example: the identifier that denotes "purchase order"*. Identifiers for business transaction types in the Core Business Vocabulary are specified in Section 7.3.

    - *Business Transaction Identifier* Denotes a specific business transaction document of the type indicated by the Business Transaction Type. *Example: <The identifier that denotes Example Corp purchase order #123456>* Identifiers for business transactions in the Core Business Vocabulary are specified in Section 8.4.

3.2 Vocabulary Kinds

(The material in this section is adapted directly from [EPCIS1.0.1], Section 6.2.)

Vocabularies are used extensively within EPCIS to model conceptual and physical entities that exist in the real world.

Examples of vocabularies defined in the EPCIS standard are business steps, dispositions, location identifiers, physical object identifiers, business transaction type names, and business transaction identifiers. In each case, a vocabulary represents a finite (though open-ended) set of alternatives that may appear in specific fields of events.

It is useful to distinguish two kinds of vocabularies, which follow different patterns in the way they are defined and extended over time:

- *Standard Vocabulary* A Standard Vocabulary is a set of Vocabulary Elements whose definition and meaning must be agreed to in advance by trading partners who will exchange events using the vocabulary.
- *User Vocabulary* A User Vocabulary is a set of Vocabulary Elements whose definition and meaning are under the control of a single organization.

These concepts are explained in more detail below.

3.2.1 Standard Vocabulary

A Standard Vocabulary is a set of Vocabulary Elements whose definition and meaning must be agreed to in advance by trading partners who will exchange events using the vocabulary. For example, the EPCIS standard defines a vocabulary called ñbusiness step,ò whose elements are identifiers denoting such things as ñshipping,ò ñreceiving,ò and so on. One trading partner may generate an event having a business step of ñshipping,ò and another partner receiving that event through a query can interpret it because of a prior agreement as to what ñshippingò means.

Standard Vocabulary elements tend to be defined by organizations of multiple end users, such as EPCglobal, industry consortia outside EPCglobal, private trading partner groups, and so on. The master data associated with Standard Vocabulary elements, if any master data is defined at all, are defined by those same organizations, and tend to be distributed to users as part of a standard or by some similar means. New vocabulary elements within a given Standard Vocabulary tend to be introduced through a very deliberate and occasional process, such as the ratification of a new version of a standard or through a vote of an industry group.

The Standard Vocabularies specified in the Core Business Vocabulary standard are: *business steps* (Section 7.1), *dispositions* (Section 7.2), and *business transaction types* (Section 7.3). The elements and definitions are agreed to by parties prior to exchanging data, and there is general agreement on their meaning.

Example: the following is a business step identifier defined in Section 7.1 herein:

```
urn:epcglobal:cbv:bizstep:receiving
```

This identifier is defined by the EPCglobal Core Business Vocabulary standard, and its meaning is known and accepted by those who implement the standard.

While an individual end user organization acting alone may introduce a new Standard Vocabulary element, such an element would have limited use in a data exchange setting, and would probably only be used within an organizationôs four walls. On the other hand, an industry consortium or other group of trading partners may define and agree on standard vocabulary elements beyond those defined by the Core Business Vocabulary, and these may be usefully used within that trading group.

3.2.2 User Vocabulary

A User Vocabulary is a set of Vocabulary Elements whose definition and meaning are under the control of a single organization. For example, the EPCIS standard defines a vocabulary called ñbusiness location,ò whose elements are identifiers denoting such things as ñAcme Corp. Distribution Center #3.ò The location identifier and any associated master data is assigned by the user. Acme Corp may generate an event whose business location field contains the identifier that denotes ñAcme Corp. Distribution Center #3,ò and another partner receiving that event through a query can interpret it either because the partner recognizes the identifier as being identical to the identifier received in other events that took place in the same location, or because the partner consults master data attributes associated with the location identifier, or both.

Example:

```
urn:epc:sgln:0614141.12345.400
```

This identifier is assigned by the End User who owns the GS1 Company Prefix 0614141, and the meaning of the identifier (that is, what location it denotes) is determined exclusively by that end user. Another End User can understand the meaning of this identifier by consulting associated master data.

User Vocabulary elements are primarily defined by individual end user organizations acting independently. The master data associated with User Vocabulary elements are typically defined by those same organizations, and are usually distributed to trading partners through the EPCIS Query Interface or other data exchange / data synchronization mechanisms. New vocabulary elements within a given User Vocabulary are introduced at the sole discretion of an end user, and trading partners must be prepared to respond accordingly.

While the Core Business Vocabulary standard does not (and as the discussion above makes clear, cannot) specify particular user vocabulary elements, the Core Business Vocabulary does provide syntax templates that are recommended for use by End Users in constructing their own user vocabulary elements. See Section 8.1. The user vocabularies for which templates are specified in this standard are: *physical objects* (Section 8.2), *locations* which include both read points and business locations (Section 8.3), and *business transaction identifiers* (Section 8.4).

4 Terminology and Typographical Conventions

Within this standard, the terms SHALL, SHALL NOT, SHOULD, SHOULD NOT, MAY, NEED NOT, CAN, and CANNOT are to be interpreted as specified in Annex G of the ISO/IEC Directives, Part 2, 2001, 4th edition [ISODir2]. When used in this way, these terms will always be shown in ALL CAPS; when these words appear in ordinary typeface they are intended to have their ordinary English meaning.

All sections of this document, with the exception of Sections 1, 2, and 3, are normative, except where explicitly noted as non-normative.

The following typographical conventions are used throughout the document:

- ALL CAPS type is used for the special terms from [ISODir2] enumerated above.
- `Monospace` type is used to denote programming language, UML, and XML identifiers, as well as for the text of XML documents.

➢ Placeholders for changes that need to be made to this document prior to its reaching the final stage of approved EPCglobal standard are prefixed by a rightward-facing arrowhead, as this paragraph is.

5 Compliance and Compatibility

The EPCglobal Core Business Vocabulary is designed to facilitate interoperability in EPCIS data exchange by providing standard values for vocabulary elements to be included in EPCIS data. The standard recognizes that the greatest interoperability is achieved when all data conforms to the standard, while at the same also recognizes that individual End Users or groups of trading partners may need to extend the standard in certain situations.

To that end, this standard defines two levels of conformance for EPCIS documents:

- *CBV-Compliant* An EPCIS document that only uses vocabulary identifiers specified in the Core Business Vocabulary standard in the standard fields of EPCIS events.
- *CBV-Compatible* An EPCIS document that uses a combination of vocabulary identifiers specified in the Core Business Vocabulary standard and other identifiers that are outside the standard.

An EPCIS document is neither CBV-Compliant nor CBV-Compatible if it wrongly uses identifiers defined in the Core Business Vocabulary standard or if it violates any other rules specified herein.

The formal definition of these terms is specified below.

5.1 CBV Compliant

A ñCBV-Compliant Documentò is a document that conforms to the schema and other constraints specified in [EPCIS1.0.1], and which furthermore conforms to all the normative language in this standard that pertains to a ñCBV-Compliant Document.ò

A ñCBV-Compliant Applicationò is any application for which both of the following are true:

- If it operates in a mode where it claims to accept a CBV-Compliant Document as an input, the application SHALL accept any document that is a CBV-Compliant Document according to this standard, and furthermore in processing that input SHALL interpret each CBV identifier according to the meaning specified herein.
- If it operates in a mode where it claims to produce a CBV-Compliant Document as an output, the application SHALL only produce a document that is a CBV-Compliant Document according to this standard, and furthermore in generating that output SHALL only use CBV identifiers to denote their meaning as specified herein.

The following list summarizes the requirements for an EPCIS document to be a ñCBV-Compliant Document,ò as specified elsewhere in this standard:

- A CBV-Compliant Document SHALL conform to the schema and other constraints specified in [EPCIS1.0.1].
- A CBV-Compliant Document SHALL NOT use any URI beginning with `urn:epcglobal:cbv:` except as specified in this standard.
- Each EPCIS event in a CBV-Compliant Document SHALL include a `bizStep` field, and the value of the `bizStep` field SHALL be a URI consisting of the prefix `urn:epcglobal:cbv:bizstep:` followed by the string specified in the first column of some row of the table in Section 7.1.2.
- A CBV-Compliant Document MAY include a `disposition` field. If the `disposition` field is present, the value of the `disposition` field SHALL be a URI consisting of the prefix `urn:epcglobal:cbv:disp:` followed by the string specified in the first column of some row of the table in Section 7.2.2.
- Each EPCIS event in a CBV-Compliant Document MAY include one or more `bizTransaction` elements. If `bizTransaction` elements are present, each such element MAY include a `type` attribute. If a given `bizTransaction` element includes a `type` attribute, the value of the `type` attribute SHALL be a URI consisting of the prefix `urn:epcglobal:cbv:btt:` followed by the string specified in the first column of some row of the table in Section 7.3.2.
- URIs defined in the EPC Tag Data Standard SHALL only be used in a CBV-Compliant Document as specified in Section 8.1.1.
- A CBV-Compliant document SHALL use one of the three URI forms specified in Section 8.2 to populate the ñwhatò dimension of EPCIS events (that is, the `epcList`, `parentID`, and `childEPCs` fields in EPCIS `ObjectEvents`, `AggregationEvents`, and `TransacationEvents`), for every such field that is not null. A CBV-Compliant document SHOULD use the EPC URI form as specified in Section 8.2.1 unless there is a strong reason to do otherwise.
- A CBV-Compliant document SHALL NOT use an SGLN EPC (`urn:epc:id:sgln:…`) as a physical object identifier.

- A CBV-Compliant document SHALL use one of the three URI forms specified in Section 8.3 to populate the ñwhereò dimension of EPCIS events (that is, the `readPoint` and `businessLocation` fields in all EPCIS event types), for every such field that is not null. A CBV-Compliant document SHOULD use the EPC URI form as specified in Section 8.3.1 unless there is a strong reason to do otherwise.
- When using an EPC URI as a location identifier (Section 8.3.1), a CBV-Compliant document SHOULD NOT use EPC schemes other than SGLN (`urn:epc:id:sgln:…`), unless there is a strong reason to do so.
- A CBV-Compliant document SHALL use one of the four URI forms specified in Section 8.4 to populate the business transaction identifier field (that is, the text content of the `bizTransaction` element) of EPCIS events, for every such field that is not null.
- When using an EPC URI as a business transaction identifier, a CBV-Compliant Documents SHOULD NOT use EPC schemes other than GDTI EPCs (`urn:epc:id:gdti:…`) or GSRN EPCs (`urn:epc:id:gsrn:…`), unless there is a strong reason to do so. GDTI EPCs SHOULD only be used as business transaction identifiers when they have been assigned to denote a business transaction, rather than a physical document not connected with any business transaction.

5.2 CBV Compatible

A ñCBV-Compatible Documentò is a document that conforms to the schema and other constraints specified in [EPCIS1.0.1], and which furthermore conforms to all the normative language in this standard that pertains to a ñCBV-Compatible Document.ò

A ñCBV-Compatible Applicationò is any application for which both of the following are true:

- If it operates in a mode where it claims to accept a CBV-Compatible Document as an input, the application SHALL accept any document that is a CBV-Compatible Document according to this standard, and furthermore in processing that input SHALL interpret each CBV identifier according to the meaning specified herein.
- If it operates in a mode where it claims to produce a CBV-Compatible Document as an output, the application SHALL only produce a document that is a CBV-Compatible Document according to this standard, and furthermore in generating that output SHALL only use CBV identifiers to denote their meaning as specified herein.

The following list summarizes the requirements for an EPCIS document to be a ñCBV-Compatible Document,ò as specified elsewhere in this standard.

- A CBV-Compatible Document SHALL conform to the schema and other constraints specified in [EPCIS1.0.1].
- A CBV-Compatible Document SHALL NOT use any URI beginning with `urn:epcglobal:cbv:` except as specified in this standard.

- URIs defined in the EPC Tag Data Standard SHALL only be used in a CBV-Compatible Document as specified in Section 8.1.1.
- A CBV-Compatible Document SHOULD use the EPC URI form as specified in Section 8.2.1 for each physical object identifier unless there is a strong reason to do otherwise.
- A CBV-Compatible Document SHALL NOT use an SGLN EPC (`urn:epc:id:sgln:…`) as a physical object identifier.
- A CBV-Compatible Document SHOULD use the EPC URI form as specified in Section 8.3.1 for each location identifier unless there is a strong reason to do otherwise.
- When using an EPC URI as a location identifier (Section 8.3.1), a CBV-Compatible Document SHOULD NOT use EPC schemes other than SGLN (`urn:epc:id:sgln:…`), unless there is a strong reason to do so.
- When using an EPC URI as a business transaction identifier, a CBV-Compatible Document SHOULD NOT use EPC schemes other than GDTI EPCs (`urn:epc:id:gdti:…`) or GSRN EPCs (`urn:epc:id:gsrn:…`), unless there is a strong reason to do so. GDTI EPCs SHOULD only be used as business transaction identifiers when they have been assigned to denote a business transaction, rather than a physical document not connected with any business transaction.

In general, every CBV-Compliant Document is also a CBV-Compatible Document, though not every CBV-Compatible Document is a CBV-Compliant Document. A CBV-Compatible Document may include an identifier that is compliant with [EPCIS1.0.1] but which is not permitted for CBV-Compliant Documents, provided that it meets the requirements above. A CBV-Compatible Document may also include an event in which the `bizStep` field is omitted, whereas that field is always required for CBV-Compliant Documents.

6 Use of Uniform Resource Identifiers (URIs)

This section specifies general rules that apply to all uses of URIs in this standard.

6.1 URI Prefix for Standard Vocabularies in the CBV

All URIs for standard vocabulary elements specified in the Core Business Vocabulary standard have the following syntax:

`urn:epcglobal:cbv:`*`qualifier`*`:`*`payload`*

where the *`qualifier`* denotes the type of the vocabulary the vocabulary element belongs to and *`payload`* the vocabulary element unambiguously identifies an element of the vocabulary.

6.2 Limitation on Use of the URI Prefix

The Core Business Vocabulary standard is the only EPCglobal standard in which URIs beginning with `urn:epcglobal:cbv:` are defined.

A CBV-Compliant or CBV-Compatible document SHALL NOT use any URI beginning with `urn:epcglobal:cbv:` or `urn:epc:` except as specified in this standard.

Both CBV-Compliant and CBV-Compatible documents MAY contain URIs that do not begin with `urn:epcglobal:cbv:`, provided that the requirements specified elsewhere in this standard are met. These SHALL be used to identify vocabulary elements not defined by the CBV standard. URIs beginning with `urn:epcglobal:` SHALL NOT be used except as specified herein or in another GS1 standard.

Example (Non Normative): *Suppose a user needs a new disposition value to stand for "quarantined." The user may NOT use the following URI:*

`urn:epcglobal:cbv:disp:quarantined`

In this case the particular URI above is NOT part of this standard and therefore may not be used. Instead a URI like the following could be used and considered CBV-Compatible. However, it must be noted that this vocabulary would have limited meaning to supply chain participants receiving this unless a prior understanding had been established.

`http://epcis.example.com/disp/quarantined`

7 Standard Vocabularies

This section specifies standard vocabulary elements for three EPCIS standard vocabularies: business steps, dispositions, and business transaction types.

7.1 Business Steps

This section specifies standard identifiers for the EPCIS `BusinessStepID` vocabulary. These identifiers populate the `bizStep` field in an EPCIS event, as specified below.

7.1.1 URI Structure

All business step values specified in this section have the following form:

`urn:epcglobal:cbv:bizstep:`*`payload`*

where the *`payload`* part is a string as specified in the next section. Every payload string defined herein contains only lower case letters and the underscore character.

7.1.2 Element Values and Definitions – Business Step

Each EPCIS event in a CBV-Compliant Document SHALL include a `bizStep` field, and the value of the `bizStep` field SHALL be a URI consisting of the prefix `urn:epcglobal:cbv:bizstep:` followed by the string specified in the first column of some row of the table below. The portion following the prefix SHALL be

written exactly as specified in the table below, in all lowercase letters (possibly including underscores, as indicated).

Example (non-normative): the following shows an excerpt of a CBV-Compliant EPCIS document in XML format containing a single event, where the business step of that event is the Core Business Vocabulary "shipping" value:

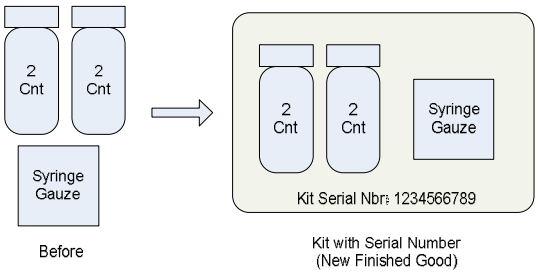
```
<epcis:EPCISDocument xmlns:epcis="urn:epcglobal:epcis:xsd:1" ...>
  <EPCISBody>
    <EventList>
      <ObjectEvent>
        ...
        <bizStep>urn:epcglobal:cbv:bizstep:shipping</bizStep>
        ...
      </ObjectEvent>
    </EventList>
  </EPCISBody>
</epcis:EPCISDocument>
```

The following example is NOT CBV-Compliant, because it does not use the full URI string in the business step field. It is also not CBV-Compatible, because the value of the business step field is not a URI with an owning authority, as required by Section 6.4 of [EPCIS1.0.1].

```
<epcis:EPCISDocument xmlns:epcis="urn:epcglobal:epcis:xsd:1" ...>
  <EPCISBody>
    <EventList>
      <ObjectEvent>
        ...
        <bizStep>shipping</bizStep>          WRONG
        ...
      </ObjectEvent>
    </EventList>
  </EPCISBody>
</epcis:EPCISDocument>
```

Additional samples may be found Section 10.1.

Each EPCIS event in a CBV-Compatible Document MAY include a `bizStep` field, and the value of the `bizStep` field MAY be a URI as specified above for a CBV-Compliant document, and MAY be any other URI that meets the general requirements specified in [EPCIS1.0.1], Section 6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.

Business Steps		
Value	**Definition**	**Examples**
`accepting`	Denotes a specific activity within a business process where an object (i.e. product, shipment or asset) arrives into a location causing a change of possession and/or responsibility.	• Retailer X unloads a pallet on to the receiving dock. The numbers of cases on the pallet are counted. The pallets are disaggregated from the shipping conveyance. The quantity is verified against the delivery document (Freight Bill or Bill of Lading), notating any over, short or damaged product at the time of delivery. Typically this process releases freight payment and completes the contractual agreement with the carrier of delivering the product/assets to a specified location. • A parcel carrier drops off five boxes at Distributor Y's DC. A person on the Receiving Dock signs that they accept the five boxes from the parcel carrier.
`arriving`	Shipment is arriving at a location	• Truckload of a shipment arrives into a yard. Shipment has not yet been received or accepted.
`assembling`	Denotes an activity within a business process whereby one or more trade item(s) or identifiable component parts are combined with other objects creating a new finished product.	• Computer parts (hard drive, battery, RAM) assembled into a consumer ready computer • Healthcare kitting: a surgical kit including drug, syringe, and gauze are combined to create a new óproductô a *kit* 

Business Steps		
Value	**Definition**	**Examples**
collecting	Denotes a specific activity within a business process where an object (i.e. product, asset, shipment or container) is picked up and collected for future disposal, recycling or re-used.	• An organization picks up disposed consumer electronics in an end of life state from various different organizations. After the goods are picked up, they typically are brought back and received into a Collection Center • Rented or leased pallets are picked up and brought to a collection center.
commissioning	Process of associating an EPC with a particular object (product, shipment, asset or container). A tag may have been encoded and applied in this step, or may have been previously encoded.	• On a packaging line, an encoded EPC is applied to a case and associated to the product.
decommissioning	Process of disassociating an EPC with an object (i.e. product, shipment, asset or container). EPC may be re-commissioned at some point in the future and read again ï however only with new information.	• A reusable tote is taken out of service for repair. • A non-functioning tag is removed from a good product.
departing	Shipment is leaving a location on its way to a destination	• Truckload of a shipment departs a yard, typically through a gate and begins transit to another location

Business Steps		
Value	**Definition**	**Examples**
`destroying`	Process of terminating an object (i.e. product, shipment, asset or shipping container) The object and its EPC should not be the subject of subsequent events that require a physical observation; subsequent physical observations are likely indicative of error (such as a stray read of a tag inside an incinerator)	• Distributor or Retailer puts empty case in the incinerator or box crusher.
`disassembling`	Denotes a specific activity within a business process where a trade item is broken down into separate, uniquely identified component parts.	• Before feeding a consumer electronics end of life item (a computer) into recycling operation line, it is necessary to disassemble the parts for the purpose of being recycled or disposed of in an environmentally sound manner. • A surgical kit (e.g. 2- 50 count bottles of medication and 1 syringe gauze) is broken down into its separate component parts
`encoding`	Process of writing an EPC code to a tag. EPC is not associated with an object (i.e. product, shipment, asset or container) at this step in the process.	• 3rd Party writes tags and returns spool of case tags to Manufacturer

Business Steps		
Value	**Definition**	**Examples**
`entering_exiting`	Denotes a specific activity within a business at the Entrance/Exit door of a facility. Customers are either leaving with purchased product or entering with product to be returned to the facility.	• Customer leaves the facility of Retailer X with their purchased items through a customer entrance/exit door.
`holding`	Denotes a specific activity within a business process where an object (i.e. product, shipment, asset, or containers) is being segregated for further review.	• Retailer X unloads a second pallet on to their receiving dock. Finds no purchase order for the pallet. Moves the pallet to a holding area on the dock • Distributor Y obtains a shipment of pharmaceutical product. Distributor Y finds that their supplier cannot provide a complete pedigree. Distributor Y moves the shipment to a quarantine area on their dock. • Shipper Z is told by Customs to move a container to a special area until Customs can inspect and clear the container.
`inspecting`	Process of reviewing product to address potential product or documentation defects	• Manufacturer A pulls 10 bottles from every batch to ensure that the product and pill count in the bottles match expectations • Distributor Y checks all returned product to designate the returned product either as saleable or as damaged • Regulator R pulls 3 bottles from a shelf to determine if the bottles have a correct pedigree • Customs Agent C uses a machine to scan the contents of a shipping container

Business Steps		
Value	**Definition**	**Examples**
`installing`	Denotes a specific activity within a business process where part or component is put into a composite product or piece of equipment or machinery.	• Additional memory chips and a rechargeable battery are installed within a computer • A duplexing unit is installed on a laser printer • Additional safety equipment is installed within the cabin of an aircraft or vehicle (e.g. fire extinguishers)
`killing`	Process of terminating an EPC RFID tag previously associated with an object. The object and its EPC code may continue to exist and be the subject of subsequent events (via a bar code, manual data entry, replacement tag, etc)	• Kill Command is issued to the tag to prevent any further reading of the tag or the information on the tag.
`loading`	Denotes a specific activity within a business process where an object (i.e. product, shipment, asset, or container) is loaded into shipping conveyance.	• Manufacturer A loads pallets into a shipping conveyance. The pallets are aggregated to the shipping conveyance. • Distributor Y loads racks full of totes on to a truck
`other`	A business step not identified by any of the values listed in the core business vocabulary	• ñOtherò may be used for terms that have yet to be added to the core business vocabulary from an industry or a user

Business Steps		
Value	**Definition**	**Examples**
packing	Denotes a specific activity within a business process that includes putting product (individuals, inners, cases, pallets) into a larger container ï usually for shipping. Aggregation of one unit to another typically occurs at this point.	• 12 packs of soda are placed into a case • Loose potatoes are placed into a tote.
picking	Denotes a specific activity within a business process that includes the selecting of product to fill an order	• Distributor Y places three units into a tote to meet the requirements of a purchase order • Manufacturer A pulls three pallets from its racks to fulfill a purchase order
receiving	Denotes a specific activity within a business process that indicates that an object (i.e. product, shipment or asset), is being received at a location and is added to the receiver's inventory.	• Retailer X confirms that the count of cases on the pallet equals the expected count in a purchase order. Retailer X takes the cases into inventory. Typically, this process matches the product to the purchase order for payment to the supplier. • A shipment from a manufacturer factory site to manufacturer distribution center, is matched against the transaction record then added to local inventory.
removing	Denotes a specific activity within a business process where a part or component is taken out of a composite product, or piece of equipment or machinery.	• A defective airplane part is taken out of the engine

Business Steps		
Value	**Definition**	**Examples**
repackaging	Denotes a specific activity within a business process where an objectôs packaging configuration is changed.	• Distributor Y receives one box full of batteries and another box full of laptops without batteries. Distributor Y ships out new boxes containing one laptop and one battery.
repairing	Denotes a specific activity within a business process where a malfunctioning product is repaired (typically by a post-sales service), without replacing it by a new one.	• A computer is brought to a repair center to fix a problem • An airplane part is in maintenance center to diagnose an issue
replacing	Denotes a specific activity within a business process where an object (part, product, asset, container) is substituted or exchanged for another object.	• A defective airplane part is replaced by a new part.
reserving	Process for an EPC number manager to provide a set of EPC numbers for use by another party.	• Manufacturer provides set of case EPC numbers to a 3rd Party
retail_selling	Denotes a specific activity within a business process at a point-of-sale for the purpose of transferring ownership to a customer in exchange for something of value (currency, credit, etc).	• Retailer X sells a screwdriver to a customer by checking it out through a point-of-sale system.
shipping	Indicates the overall process of picking, staging, loading and	• Manufacturer A loads and reads product into the shipping container and closes the door. The product has

Business Steps		
Value	**Definition**	**Examples**

	departing. It may be used when more granular process step information is unknown or inaccessible. It may indicate a final event from a shipping point.
	
	The use of `shipping` is mutually exclusive from the use of `departing`, `staging`, or `loading`.
		been read out of the shipping facility. The shipment is immediately picked up and a BOL is associated at this point. (The shipment has left the yard)
		• At Distributor Y, the truck containing racks full of totes pulls away from the shipping dock or staging area.
		• Manufacturer A completes loading product into trailer and seals door. The trailer is ready for pickup. The generation of a Despatch Advice / ASN triggers a ñshippingò event.
		• A 3PL picks and tags the product. The product is loaded into a trailer and signed over to a transportation carrier. The 3PL notifies the manufacturer who generates a ñshippingò event. NOTE: This would be the case if there were NO departing step at a read point at the gate.
		• Typical Process flow:
		`picking`
		`loading`
		`departing`
		or
		`picking`
		`loading`
		`staging_outbound`
		The above steps assume an organizationôs ability and desire to share all steps in the process. If those process steps are not captured, the single business step of ñshippingò would be used.

Business Steps		
Value	**Definition**	**Examples**
staging_outbound	Denotes a specific activity within a business process associated with the movement of an object (i.e. product, shipment, asset, container) from a facility to an area where it will await transport pick-up	• Container is being closed and will be awaiting pickup in the yard. • Container is being closed and seal is applied. • Product is picked and stored on dock waiting for loading
stocking	Denotes a specific activity within a business process within a location to make a product available to the customer or for order fulfillment within a DC	• Retailer X places cans from a case on to a shelf on the sales floor • Dist X moves goods from a storage area to a picking area
storing	Denotes a specific activity within a business process where objects are moved into and out of storage within a location	• Manufacturer A moves a pallet from the receiving area to a rack • Retailer X moves a case from the receiving dock to a shelf in the backroom
transforming	Denotes a specific activity within a business process where one or more objects are an input into a process that irreversibly changes that object / those objects into a new object or objects; the output has a new identity and characteristics.	• Meat packer X cuts a whole cow into two sides of beef (1 to many) • Food processor Y combines water, vegetables, and meat to create a unit of soup (many to one) • Butcher Z combines meat from multiple carcasses, grinds them together, and creates individual packages of ground beef (many to many)

519

520 7.2 Dispositions

521 This section specifies standard identifier values for the EPCIS `DispositionID`
522 vocabulary. These identifiers populate the `disposition` field in an EPCIS event, as
523 specified below.

7.2.1 URI Structure

All disposition values specified in this section have the following form:

`urn:epcglobal:cbv:disp:`*`payload`*

where the *`payload`* part is a string as specified in the next section. Every payload string defined herein contains only lower case letters and the underscore character.

7.2.2 Element Values and Definitions – Dispositions

Each EPCIS event in a CBV-Compliant Document MAY include a `disposition` field. If the `disposition` field is present, the value of the `disposition` field SHALL be a URI consisting of the prefix `urn:epcglobal:cbv:disp:` followed by the string specified in the first column of some row of the table below. The portion following the prefix SHALL be written exactly as specified in the table below, in all lowercase letters (possibly including underscores, as indicated).

Example (non-normative): the following shows an excerpt of a CBV-Compliant EPCIS document in XML format containing a single event, where the disposition of that event is the Core Business Vocabulary "in progress" value:

```
<epcis:EPCISDocument xmlns:epcis="urn:epcglobal:epcis:xsd:1" ...>
  <EPCISBody>
    <EventList>
      <ObjectEvent>
        ...
        <disposition>urn:epcglobal:cbv:disp:in_progress</disposition>
        ...
      </ObjectEvent>
    </EventList>
  </EPCISBody>
</epcis:EPCISDocument>
```

The following example is NOT CBV-Compliant, because it does not use the full URI string in the disposition field. It is also not CBV-Compatible, because the value of the disposition field is not a URI with an owning authority, as required by Section 6.4 of [EPCIS1.0.1].

```
<epcis:EPCISDocument xmlns:epcis="urn:epcglobal:epcis:xsd:1" ...>
  <EPCISBody>
    <EventList>
      <ObjectEvent>
        ...
        <disposition>in_progress</disposition>          WRONG
        ...
      </ObjectEvent>
    </EventList>
  </EPCISBody>
</epcis:EPCISDocument>
```

Additional examples may found in Section 10.1.

Each EPCIS event in a CBV-Compatible Document MAY include a `disposition` field, and the value of the `disposition` field MAY be a URI as specified above for a

568 CBV-Compliant document, and MAY be any other URI that meets the general
569 requirements specified in [EPCIS1.0.1], Section 6.4, except for those URIs which in this
570 standard are forbidden or designated for a different purpose.

Dispositions		
Value	**Definition**	**Examples**
`active`	Commissioned objects (product, shipment, asset, or container) introduced into the supply chain	• Manufacturer A commissions tags for 10 cases of product. Business step: `commissioning`
`container_closed`	Object (product, shipment, asset,) has been loaded onto a container, the doors have been closed and the shipment sealed.	• Container is being closed and will be awaiting pickup in the yard. • Container is being closed and electronic seal is applied. Business step: `staging_outbound`
`destroyed`	Object (product, shipment, asset, or container) and/or EPC on packaging have been fully rendered non-usable	• Incinerator Operator B indicates that product and packaging have been incinerated Business step: `destroying`
`encoded`	EPCs have been written to a tag	• 3rd Party has written EPCs to tags and returns spool of case tags to Manufacturer Business step: `encoding`
`inactive`	Decommissioned object (product, shipment, asset, or container) that may be reintroduced to the supply chain	• A reusable tag is removed from a reusable transport item. Business step: `decommissioning`

Dispositions		
Value	**Definition**	**Examples**

`in_progress`	Default disposition for object (product, shipment, asset, or container) proceeding through points in the supply chain.	• Product arrives at a location and is being accepted and verified.
		• Product is being prepared for shipment.
		Business step:
		`receiving`
		`picking`
		`loading`
		`accepting`
		`staging_outbound`
		`arriving`

`in_transit`	Object (product, shipment, asset, or container) being shipped between two trading partners	• Shipper Z pulled a container/product out of a manufacturerôs yard on to a road
		Business step:
		`shipping`
		`departing`

`non_sellable_expired`	Product is non-sellable because current date is past expiration date	• Distributor Y indicates that a product is past its expiration date
		Business step:
		`holding`
		`staging_outbound`
		`storing`

`non_sellable_damaged`	Product that cannot be sold because it has a flaw	• A customer at Retailer X broke an EPC tagged bottle by knocking it on to the floor
		• A forklift operator at Manufacturer A ran into a case of EPC tagged product
		Business step:
		`holding`
		`staging_outbound`
		`storing`

Dispositions		
Value	**Definition**	**Examples**
non_sellable_disposed	Product is non-sellable because it has been returned for disposal	•
non_sellable_no_pedigree_match	In validating the pedigree for the product, no match was found, causing the product to be quarantined for further investigation and disposition	• Distributor Y could not obtain a valid pedigree for a product from its Manufacturer A Business step: holding staging_outbound storing
non_sellable_other	Product cannot be sold to a customer.	• A product is not sellable pending further evaluation. • A product is not sellable, and one of the other reasons (expired, recalled, damaged, no-pedigree-match) does not apply. • Product has been sold and is awaiting customer pick-up. Business step: holding inspecting staging_outbound storing
non_sellable_recalled	Product is non-sellable because of public safety reasons.	• Manufacturer A requested that all Retailers and Distributors return its batteries that could overheat and explode Business step: holding staging_outbound storing

Dispositions		
Value	**Definition**	**Examples**
`reserved`	EPCs have been allocated by an EPC number manager for a third party	• Distributor receives EPC numbers and can encode tag with the numbers. Business step: `reserving`

`returned`	Object (product, shipment, asset, or container) has been sent back for various reasons. It may or may not be sellable	• Product is received at a returns center from a customer because of an over-shipment, recall, expired product, etc
		Business step:
		`receiving`
		`holding`
		`shipping`

`sellable_accessible`	Product can be sold as is and customer can access product for purchase	• Retailer X puts a case of screwdrivers on to a shelf or display within customer reach
		Business step:
		`stocking`
		`receiving`

`sellable_not_accessible`	Product can be sold as is, but customer cannot access product for purchase	• Retailer X puts a case of screwdrivers on to a shelf in a store backroom
		Business step:
		`receiving`
		`storing`
		`loading`
		`holding`
		`inspecting`

`retail_sold`	Product has been purchased by a customer	• A customer at Retailer X purchased a screwdriver by checking it out through the point of sale system Business step: `retail_selling`
`unknown`	Product condition is not known	

7.3 Business Transaction Types

This section specifies standard identifier values for the EPCIS `BusinessTransactionTypeID` vocabulary. These identifiers may be used to populate the `type` attribute of a `bizTransaction` element in an EPCIS event. See Section 8.4 for details of when these identifiers should be used.

7.3.1 URI Structure

All business transaction type values specified in this section have the following form:

`urn:epcglobal:cbv:btt:`*`payload`*

where the *`payload`* part is a string as specified in the next section. Every payload string defined herein contains only lower case letters and the underscore character.

7.3.2 Element Values and Definitions – Business Transaction Types

Each EPCIS event in a CBV-Compliant Document MAY include one or more `bizTransaction` elements. If `bizTransaction` elements are present, each such element MAY include a `type` attribute. If a given `bizTransaction` element includes a `type` attribute, the value of the `type` attribute SHALL be a URI consisting of the prefix `urn:epcglobal:cbv:btt:` followed by the string specified in the first column of some row of the table below. The portion following the prefix SHALL be written exactly as specified in the table below, in all lowercase letters (possibly including underscores, as indicated). See Section 8.4 for more compliance requirements concerning business transaction types.

Example (non-normative): An EPCIS document in XML format containing a usage sample may be found in Section 10.1.

Each EPCIS event in a CBV-Compliant Document MAY include one or more `bizTransaction` elements. If `bizTransaction` elements are present, each such element MAY include a type attribute. If a given `bizTransaction` element includes a type attribute, the value of the type attribute MAY be a URI as specified above for a CBV-Compliant document, and MAY be any other URI that meets the general requirements specified in [EPCIS1.0.1], Section 6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.

Business Transaction Types	
Value	**Definition**
`po`	**Purchase Order**. A document/message that specifies details for goods and services ordered under conditions agreed by the seller and buyer.

Business Transaction Types	
Value	**Definition**
`poc`	**Purchase Order Confirmation**. A document that provides confirmation from an external supplier to the request of a purchaser to deliver a specified quantity of material, or perform a specified service, at a specified price within a specified time.
`bol`	**Bill of Lading**. A document issued by a carrier to a shipper, listing and acknowledging receipt of goods for transport and specifying terms of delivery
`inv`	**Invoice**. A document/message claiming payment for goods or services supplied under conditions agreed by the seller and buyer.
`rma`	**Return Merchandise Authorization**. A document issued by the seller that authorizes a buyer to return merchandise for credit determination.
`pedigree`	**Pedigree**. A record that traces the ownership and transactions of a product as it moves among various trading partners.
`desadv`	**Despatch Advice**. A document/message by means of which the seller or consignor informs the consignee about the despatch of goods. Also called an ñAdvanced Shipment Notice,ò but the value `desadv` is always used regardless of local nomenclature.
`recadv`	**Receiving Advice**. A document/message that provides the receiver of the shipment the capability to inform the shipper of actual goods received, compared to what was advised as being sent..

8 User Vocabularies

This section specifies syntax templates that end users may use to define vocabulary elements for three EPCIS user vocabularies: physical objects, locations (both read points and business locations), and business transactions.

8.1 General Considerations

Unlike the standard vocabularies discussed in Section 7, a vocabulary element in a User Vocabulary is created by an End User. For example, an End User who creates a new business location such as a new warehouse may create a business location identifier to refer to that location in EPCIS events. The specific identifier string is defined by the End User, and its meaning may be described to trading partners via master data exchange, or via some other mechanism outside of the EPCIS Query Interface.

The EPCIS standard (Section 6.4) places general constraints on the identifiers that End Users may create for use as User Vocabulary elements. Specifically, an identifier must

conform to URI syntax, and must either conform to syntax specified in EPCglobal standards or must belong to a subspace of URI identifiers that is under the control of the end user who assigns them.

The Core Business Vocabulary provides additional constraints on the syntax of identifiers for user vocabularies, so that CBV-Compliant documents will use identifiers that have a predictable structure. This in turn makes it easier for trading partners to understand the meaning of such identifiers.

For each user vocabulary considered here, several different syntax templates are provided for constructing vocabulary elements:

- *EPC URI* An Electronic Product Code ñpure identityò URI may be used as a user vocabulary element. EPCs have a structure and meaning that is widely understood. EPCs may also be encoded into data carriers such as RFID tags and bar codes according to GS1 EPCglobal standards. For this reason, EPCs are often the best choice for creating user vocabulary elements when it is possible to do so.
- *Private or Industry-wide URN* A Uniform Resource Name (URN) of the form

  `urn:`*`URNNamespace`*`:…`

  may be used as a user vocabulary element. Doing so requires that the user who creates the vocabulary element be authorized to use the URN namespace that appears following the `urn:` prefix. For example, the End User may register its own URN namespace with the Internet Assigned Numbers Authority (IANA). Alternatively, an industry consortium or other trading group could register a URN namespace, and define a syntax template beginning with this namespace for use by its members in creating vocabulary elements. Because of the difficulty of registering a URN namespace, this method is typically used by trading groups, not individual end users.
- *HTTP URL* A Uniform Resource Locator (URL) of the form

  `http://`*`Domain`*`/…`

  may be used as a user vocabulary element. Doing so requires that the user who creates the vocabulary element be authorized to use the Internet domain name that appears following the `http:` prefix. Often a subdomain of the End Userôs company domain is used; for example, the Example Corporation may choose to use `epcis.example.com` as a domain name for constructing user vocabulary identifiers. Because registering an Internet domain name is relatively easy, this method is quite appropriate for use by individual end users as well as by industry groups.

  Note that HTTP URLs used as EPCIS user vocabulary elements do not necessarily refer to a web page. They are just identifiers (names) that happen to use the HTTP URI scheme for the sake of convenience.

Further details about each of these three forms are specified below.

Explanation (non-normative): The reason that several different syntax templates are provided for each user vocabulary is to provide flexibility for end users to meet their

business requirements. Use of an EPC is preferred for most end user vocabularies; however, EPC codes are somewhat constrained in syntax (e.g., limitations on character set and number of characters allowed), and may not easily accommodate the construction of identifiers based on codes already in use within legacy business systems. The other forms provide an alternative.

8.1.1 General Considerations for EPC URIs as User Vocabulary Elements

Where an EPC URI is used as a User Vocabulary Element, both CBV-Compliant and CBV-Compatible documents SHALL use an EPC Pure Identity URI, except as noted below. An EPC Pure Identity URI is a URI as specified in [TDS1.4], Section 4.1; equivalently, an EPC Pure Identity URI is a URI as specified in [TDS1.5], Section 6 (specifically, a URI matching the grammar production `EPC-URI` in [TDS1.5], Section 6.3). EPC ñpure identityò URIs begin with `urn:epc:id:`….

Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the other URI forms for EPCs defined in [TDS1.4] or [TDS1.5]. In particular, documents SHALL NOT use EPC Tag URIs (`urn:epc:tag:`…) , EPC Pure Identity Pattern URIs (`urn:epc:idpat:`…), or EPC Pattern URIs (`urn:epc:pat:`…). Both CBV-Compliant and CBV-Compatible documents MAY use EPC Raw URIs (`urn:epc:raw:`…) as defined in [TDS1.4], Section 4.2.2, and [TDS1.5], Section 12, provided that the raw value cannot be decoded as an EPC. Both CBV-Compliant and CBV-Compatible documents SHALL NOT use an EPC Raw URI representing EPC memory bank contents that could be successfully decoded into an EPC Pure Identity URI according to [TDS1.4] or [TDS1.5].

Explanation (non-normative): [EPCIS1.0] specifies that "When the unique identity [in the "what" dimension] is an Electronic Product Code, the [identifier] SHALL be the "pure identity" URI for the contained EPC as specified in [TDS1.3], Section 4.1. Implementations MAY accept URI-formatted identifiers other than EPCs." The above language clarifies this requirement, and provides more specific references to [TDS1.4] and [TDS1.5]. The above language also extends these restrictions to the use of EPC URIs in other dimensions of EPCIS events beyond the "what" dimension.

8.1.2 General Considerations for Private or Industry-wide URN as User Vocabulary Elements

Where specified in Sections 8.2 through 8.4, a CBV-Compliant document or CBV-Compatible document MAY use a private or industry-wide URN as specified below.

A Private or Industry-wide URN SHALL have the following form:

`urn:`*`URNNamespace`*`:**:`*`qual`*`:`*`Remainder`*

where the components of this template are as follows:

Template Component	Description
`urn:`	The characters `u`, `r`, `n`, and `:` (colon).
`URNNamespace`	A URN Namespace registered with the Internet Assigned Numbers Authority according to [RFC2141].
`:**:`	Denotes either a single colon character or any string that conforms to the requirements of [RFC2141] and any syntax rules defined for the registered URN namespace, and which begins and ends with a colon character. In other words, any number of additional subfields may be included between the URN Namespace and the *`qual`* component, in order to provide flexibility for URN Namespace owners to administer their namespace.
`qual``:`	A qualifier as specified in Sections 8.2 through 8.4, depending on the type of identifier.
`Remainder`	The remainder of the identifier as specified in Sections 8.2 through 8.4.

691

692 In addition, an identifier of this form SHALL be 128 characters or fewer, and SHOULD
693 be 60 characters or fewer.

694 Identifiers of this form must be assigned by the owner of the URN Namespace. The
695 owner of the URN Namespace may delegate the authority to assign new identifiers to
696 End Users or other parties, provided that appropriate rules are employed to ensure global
697 uniqueness.

698 8.1.3 General Considerations for HTTP URLs as User Vocabulary
699 Elements

700 Where specified in Sections 8.2 through 8.4, a CBV-Compliant document or CBV-
701 Compatible document MAY use an HTTP URL.

702 An HTTP URL SHALL have the following form:

703 `http://`*`[Subdomain.]Domain`*`/**/`*`qual`*`/`*`Remainder`*

704 where the components of this template are as follows:

Template Component	Description
`http://`	The seven characters `h`, `t`, `t`, `p`, `:` (colon), `/` (slash), and `/` (slash).

Template Component	Description

[Subdomain.]Domain	An Internet Domain name that has been registered with an Internet Domain Name Registrar, optionally preceded by one or more subdomain names.
	
	For example, if `example.com` is a registred Internet Domain Name, then the following are acceptable values for this component:
	
	`example.com`
	`epcis.example.com`
	`a.rather.verbose.example.com`
	
	Unless there is a reason to do otherwise, `epcis.example.com` is recommended for most End Users (where the End User substitutes its own company or organizational Domain Name for `example.com`).
	
	Explanation (non-normative): Use of a subdomain dedicated to EPCIS, such as `epcis.example.com`, helps to avoid the possibility of conflict with other uses of the company domain name, such as URLs of web pages on the company web site. While HTTP URLs used as identifiers in EPCIS events are not usually intended to be dereferenced via a web browser, it is usually helpful to emphasize this fact by making the URL distinct from the URLs used by the company web site.

*/**/*	Denotes either a single slash character, or any string that matches the grammar rule `path-absolute` defined in [RFC3986], Section 3.3. In other words, any number of additional path components may be included between the authority component and the `obj` component, in order to provide flexibility for domain owners to administer their namespace.
qual/	A qualifier as specified in Sections 8.2 through 8.4, depending on the type of identifier.
Remainder	The remainder of the identifier as specified in Sections 8.2 through 8.4.

705

706 In addition, an identifier of this form SHALL be 128 characters or fewer, and SHOULD
707 be 60 characters or fewer.

708 Identifiers of this form must be assigned by the owner of the Internet domain *Domain*.
709 The owner of the domain may delegate the authority to assign new identifiers to other
710 parties, provided that appropriate rules are employed to ensure global uniqueness.

8.2 Physical Objects

Identifiers for physical objects populate the ñwhatò dimension of EPCIS events. This includes the `epcList`, `parentID`, and `childEPCs` fields in EPCIS `ObjectEvents`, `AggregationEvents`, and `TransacationEvents`.

A CBV-Compliant document SHALL use one of the three URI forms specified in this section to populate the above fields of EPCIS events, for every such field that is not null. A CBV-Compatible document MAY use one of the three URI forms specified in this section, or MAY use any other URI that meets the general requirements specified in [EPCIS1.0.1], Section 6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.

Both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form as specified in Section 8.2.1 unless there is a strong reason to do otherwise.

Explanation (non-normative): The term "object" in the sense of this definition stands for a tracked, physical item, that can be referenced in the elements `epcList`, `parentID`, and `childEPCs` of an EPCIS event. This may, for instance be, a serialized product item, or, a container (box, pallet etc.). It does not comprise other more "conceptual" or "virtual" objects like master data objects, services, or projects.

8.2.1 EPC URI for Physical Objects

A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure Identity URI as specified in Section 8.1.1 to populate the `epcList`, `parentID`, and `childEPCs` fields in EPCIS `ObjectEvents`, `AggregationEvents`, and `TransacationEvents`. Both CBV-Compliant and CBV-Compatible documents SHOULD use this form unless there is a strong reason to do otherwise.

Both CBV-Compliant and CBV-Compatible documents SHALL NOT use an SGLN EPC (`urn:epc:id:sgln:…`) as a physical object identifier.

Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the other URI forms for EPCs defined in [TDS1.4] or [TDS1.5]; see Section 8.1.1 for details.

8.2.2 Private or Industry-wide URN for Physical Objects

A CBV-Compliant document or CBV-Compatible document MAY use a private or industry-wide URN as specified below to populate the `epcList`, `parentID`, and `childEPCs` fields in EPCIS `ObjectEvents`, `AggregationEvents`, and `TransacationEvents`. However, both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form (Section 8.2.1) unless there is a strong reason to do otherwise. See Section 8.1 for general considerations regarding the use of Private or Industry-wide URI identifiers.

A Private or Industry-wide URI suitable for populating the `epcList`, `parentID`, and `childEPCs` fields of EPCIS events SHALL have the following form:

`urn:`*`URNNamespace`*`:**:obj:`*`Objid`*

where the components of this template are as follows:

Template Component	Description
`urn:`*`URNNamespace`*`:**:`	As specified in Section 8.1.2.
`obj:`	The characters `o`, `b`, `j`, and `:` (colon).
`Objid`	An identifier for the object that complies with the requirements of [RFC2141] and any syntax rules defined for the registered URN namespace *`URNNamespace`*, and which does not contain a colon character. This identifier must be unique relative to all other identifiers that begin with the same prefix.

Identifiers of this form must be assigned by the owner of the URN Namespace. The owner of the URN Namespace may delegate the authority to assign new identifiers to End Users or other parties, provided that appropriate rules are employed to ensure global uniqueness.

Example (non-normative): An EPCIS document in XML format containing a usage sample may be found in Section 10.2.

8.2.3 HTTP URLs for Physical Objects

A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL as specified below to populate the `epcList`, `parentID`, and `childEPCs` fields in EPCIS `ObjectEvents`, `AggregationEvents`, and `TransacationEvents`. However, both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form (Section 8.2.1) unless there is a strong reason to do otherwise. See Section 8.1 for general considerations regarding the use of HTTP URL identifiers.

An HTTP URL suitable for populating the `epcList`, `parentID`, and `childEPCs` fields of EPCIS events SHALL have the following form:

`http://`*`[Subdomain.]Domain`*`/**/obj/`*`Objid`*

where the components of this template are as follows:

Template Component	Description
`http://`*`[Subdomain.]Domain`*`/**/`	As specified in Section 8.1.3.
`obj/`	The characters `o`, `b`, `j`, and `/` (colon).

Template Component	Description
Objid	An identifier for the object that matches the grammar rule `segment-nz` defined in [RFC3986], Section 3.3 (among other things, this means `Objid` may not contain a slash character), and which is unique relative to all other identifiers that begin with the same prefix.

Identifiers of this form must be assigned by the owner of the Internet domain *Domain*. The owner of the domain may delegate the authority to assign new identifiers to other parties, provided that appropriate rules are employed to ensure global uniqueness.

Example (non-normative): An EPCIS document in XML format containing a usage sample may be found in Section 10.2.

8.3 Locations

Identifiers for locations populate the ñwhereò dimension of EPCIS events. This includes the `readPoint` and `businessLocation` fields in all EPCIS event types.

A CBV-Compliant document SHALL use one of the three URI forms specified in this section to populate the above fields of EPCIS events, for every such field that is not null. A CBV-Compatible document MAY use one of the three URI forms specified in this section, or MAY any other URI that meets the general requirements specified in [EPCIS1.0.1], Section 6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.

Both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form as specified in Section 8.3.1 unless there is a strong reason to do otherwise.

8.3.1 EPC URI for Location Identifiers

A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure Identity URI as specified in Section 8.1.1 to populate the `readPoint` and `businessLocation` fields in all EPCIS event types. Both CBV-Compliant and CBV-Compatible documents SHOULD use this form unless there is a strong reason to do otherwise.

Both CBV-Compliant and CBV-Compatible documents SHOULD NOT use EPC schemes other than SGLN EPCs (`urn:epc:id:sgln:…`) for location identifiers, unless there is a strong reason to do so.

Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the other URI forms for EPCs defined in [TDS1.4] or [TDS1.5]; see Section 8.1.1 for details.

8.3.2 Private or Industry-wide URN for Location Identifiers

A CBV-Compliant document or CBV-Compatible document MAY use a private or industry-wide URN as specified below to populate the `readPoint` and `businessLocation` fields in all EPCIS event types. However, both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form (Section 8.3.1) unless there is a strong reason to do otherwise. See Section 8.1 for general considerations regarding the use of Private or Industry-wide URI identifiers.

A Private or Industry-wide URI suitable for populating the `readPoint` and `businessLocation` fields in all EPCIS event types SHALL have the following form:

`urn:`*`URNNamespace`*`:**:loc:`*`Locid`*

where the components of this template are as follows:

Template Component	Description
`urn:`*`URNNamespace`*`:**:`	As specified in Section 8.1.2.
`loc:`	The characters `l`, `o`, `c`, and `:` (colon).
`Locid`	An identifier for the location that complies with the requirements of [RFC2141] and any syntax rules defined for the registered URN namespace *`URNNamespace`*, and which does not contain a colon character. This identifier must be unique relative to all other identifiers that begin with the same prefix.

Identifiers of this form must be assigned by the owner of the URN Namespace. The owner of the URN Namespace may delegate the authority to assign new identifiers to End Users or other parties, provided that appropriate rules are employed to ensure global uniqueness.

Example (non-normative): An EPCIS document in XML format containing a usage sample may be found in Section 10.2.

8.3.3 HTTP URLs for Location Identifiers

A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL as specified below to populate the `readPoint` and `businessLocation` fields in all EPCIS event types. However, both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form (Section 8.3.1) unless there is a strong reason to do otherwise. See Section 8.1 for general considerations regarding the use of HTTP URL identifiers.

An HTTP URL suitable for populating the `readPoint` and `businessLocation` fields in all EPCIS event types SHALL have the following form:

`http://`*`[Subdomain.]Domain`*`/**/loc/`*`Objid`*

where the components of this template are as follows:

Template Component	Description
`http://[Subdomain.]Domain/**/`	As specified in Section 8.1.3.
`loc/`	The characters `l`, `o`, `c`, and `/` (colon).
`Locid`	An identifier for the location that matches the grammar rule `segment-nz` defined in [RFC3986], Section 3.3 (among other things, this means `Locid` may not contain a slash character), and which is unique relative to all other identifiers that begin with the same prefix.

Identifiers of this form must be assigned by the owner of the Internet domain *`Domain`*. The owner of the domain may delegate the authority to assign new identifiers to other parties, provided that appropriate rules are employed to ensure global uniqueness.

Example (non-normative): An EPCIS document in XML format containing a usage sample may be found in Section 10.2.

8.4 Business Transactions

Identifiers for business transactions populate the ñwhyò dimension of EPCIS events. This includes the `bizTrasactionList` field in all EPCIS event types.

The EPCIS standard provides for a business transaction to be identified by a pair of identifiers, the ñbusiness transaction identifierò (hereinafter ñBTIò) that names a particular business transaction, and an optional ñbusiness transaction typeò (hereinafter ñBTTò) that says what kind of business transaction the identifier denotes (purchase order, invoice, etc.). Section 7.3 of this standard provides standardized values for BTTs.

URI forms for BTIs are specified below. A CBV-Compliant document SHALL use one of the four URI forms specified in this section to populate the BTI field (text content of the `bizTransaction` element) of EPCIS events, for every such field that is not null. A CBV-Compatible document MAY use one of the four URI forms specified in this section, or MAY use any other URI that meets the general requirements specified in [EPCIS1.0.1], Section 6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.

A `bizTransaction` element in an EPCIS event includes a BTI and an optional BTT in any of the following three combinations:

- If the goal is to communicate a business transaction identifier without indicating its type, a BTI is included and the BTT omitted.
- If the goal is to communicate a business transaction identifier and to indicate its type, and furthermore the type is one of the CBV standard types specified in Section 7.3, a BTI is included, and one of the URIs specified in Section 7.3 is included as the BTT.

- If the goal is to communicate a business transaction identifier and to indicate its type, and furthermore the type is not one of the CBV standard types specified in Section 7.3, the BTI is included, and some URI that does not begin with `urn:epcglobal:cbv:…` is included as the BTT. (This is CBV-Compatible but not CBV-Compliant.)

8.4.1 EPC URI for Business Transaction Identifiers

A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure Identity URI as specified in Section 8.1.1 as a business transaction identifier in all EPCIS event types.

Both CBV-Compliant and CBV-Compatible documents SHOULD NOT use EPC schemes other than GDTI EPCs (`urn:epc:id:gdti:…`) or GSRN EPCs (`urn:epc:id:gsrn:…`) for business transaction identifiers, unless there is a strong reason to do so. GDTI EPCs SHOULD only be used as business transaction identifiers when they have been assigned to denote a business transaction, rather than a physical document not connected with any business transaction.

Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the other URI forms for EPCs defined in [TDS1.4] or [TDS1.5]; see Section 8.1.1 for details.

Explanation (non-normative): One of the intended uses of the Global Document Type Identifier (GDTI) is to identify business transactions such as invoices, purchase orders, and so on. When a GDTI is used in this way, it is suitable for use as a business transaction identifier in EPCIS. However, many business information systems use other types of identifiers for business transactions, and so the use of GDTI is not as strongly recommended as SGLNs are for locations or other types of EPCs are for physical objects. It is also for this reason that the form in Section 8.4.2 is provided.

Example (non-normative): An EPCIS document in XML format containing a usage sample may be found in Section 10.1.

8.4.2 GLN-based Identifier for Legacy System Business Transaction Identifiers

A CBV-Compliant document or CBV-Compatible document MAY use a GLN-based identifier as specified below as a business transaction identifier in all EPCIS event types.

A GLN-based URI suitable for use as a business transaction identifier in all EPCIS event types SHALL have the following form:

`urn:epcglobal:cbv:bt:`*`gln`*`:`*`transID`*

where the components of this template are as follows:

Template Component	Description
`urn:epcglobal:cbv:bt:`	The 21 characters `u`, `r`, `n`, é , `b`, `t`, and `:` (colon).

Template Component	Description
gln:	A 13-digit Global Location Number (GLN) that identifies the business system within which *transID* is defined, followed by a colon. This is typically a ñparty GLNò that identifies the company responsible for the business transaction identifier, or a division of a company that maintains a separate divisional business information system.
transID	An identifier for the business transaction that complies with the requirements of [RFC2141] and which does not contain a colon character. This identifier must be unique relative to all other identifiers that begin with the same prefix.

888

889 Identifiers of this form must be assigned by the owner of the GLN that is embedded in
890 the identifier. The owner of the GLN may delegate the authority to assign new identifiers
891 to other parties, provided that appropriate rules are employed to ensure global
892 uniqueness.

893 *Example (non-normative): An EPCIS document in XML format containing a usage*
894 *sample may be found in Section 10.2.*

895 8.4.3 Private or Industry-wide URN for Business Transaction 896 Identifiers

897 A CBV-Compliant document or CBV-Compatible document MAY use a private or
898 industry-wide URN as specified below as a business transaction identifier in all EPCIS
899 event types.

900 A private or industry-wide URN suitable for use as a business transaction identifier in all
901 EPCIS event types SHALL have the following form:

902 urn:*URNNamespace*:**:bt:*transID*

903 where the components of this template are as follows:

Template Component	Description
urn:*URNNamespace*:**:	As specified in Section 8.1.2.
bt:	The characters b, t, and : (colon).
transID	An identifier for the business transaction that complies with the requirements of [RFC2141] and any syntax rules defined for the registered URN namespace *URNNamespace*, and which does not contain a colon character. This identifier must be unique relative to all other identifiers that begin with the same prefix.

Identifiers of this form must be assigned by the owner of the URN Namespace. The owner of the URN Namespace may delegate the authority to assign new identifiers to End Users or other parties, provided that appropriate rules are employed to ensure global uniqueness.

Example (non-normative): An EPCIS document in XML format containing a usage sample may be found in Section 10.2

8.4.4 HTTP URLs for Business Transaction Identifiers

A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL as specified below as a business transaction identifier in all EPCIS event types.

An HTTP URL suitable for use as a business transaction identifier in all EPCIS event types SHALL have the following form:

`http://[Subdomain.]Domain/**/bt/`*`transID`*

where the components of this template are as follows:

Template Component	Description
`http://`*`[Subdomain.]Domain/**/`*	As specified in Section 8.1.3.
`bt/`	The characters `b`, `t`, and `/` (slash).
`transID`	An identifier for the business transaction that matches the grammar rule `segment-nz` defined in [RFC3986], Section 3.3 (among other things, this means `transID` may not contain a slash character), and which is unique relative to all other identifiers that begin with the same prefix.

Identifiers of this form must be assigned by the owner of the Internet domain *`Domain`*. The owner of the domain may delegate the authority to assign new identifiers to other parties, provided that appropriate rules are employed to ensure global uniqueness.

Example (non-normative): An EPCIS document in XML format containing a usage sample may be found in Section 10.2.

9 Location Master Data

In addition to being able to uniquely identify locations, it will often be useful to exchange information about those location identifiers. The Core Business Vocabulary specifies master data that may be used to describe a location identifier. CBV master data for a location identifier consists of five data values (ñmaster data attributesò) associated with that location identifier. These same master data attributes may be used to describe a

location identifier whether the location identifier is a Read Point or a Business Location. These master data attributes are defined below.

Different location identifiers may denote locations at different levels of granularity. The master data attributes defined in the CBV are designed to be used for locations at two different levels of granularity:

- *Site* A physical location where a structure or group of structures (and / or areas) is. Examples of a Site include a distribution center, a retail store, a hospital, etc.
- *Sub-site* A specific physical location contained within a site. Examples of a Sub-site include a back room within a retail store, the sales floor of a retail store, a storage area within a warehouse, and so on.

A location at any level of granularity may be described by an appropriate combination of master data attributes defined in the CBV. The master data attributes are:

- *Site Location* A master data attribute of a location that identifies the site in which this location is contained. For a Sub-site location, this is the identifier of the parent location. For a Site location, this is the identifier of the location itself. The Site Location master data attribute applies to locations of any granularity.

  When the identifier for the location to which this master data attribute applies is an SGLN EPC, the Site Location master data attribute is always the 13-digit GLN implied by the company prefix and location reference components of that SGLN.
- *Sub-Site Type* A master data attribute of a sub-site location that describes the primary business function of the sub-site location. This master data attribute is only applicable to a sub-site location.

  This value is expressed as a single numerical code (see code list below); for example, code 201 indicates that the sub-site type is a ñback roomò as defined below.
- *Sub-Site Attributes* A master data attribute of a sub-site location that further qualifies the business function of the sub-site location. This master data attribute is only applicable to a sub-site location.

  Sub-site attributes are expressed as zero or more numerical codes (see code list below). For example, if the sub-site type is 203 (sales area), then sub-site attributes of ñ404,412ò further specifies that this location identifier is a sales area for groceries (attribute 412) that are frozen (attribute 404).
- *Sub-Site Detail* A master data attribute of a sub-site location that provides additional proprietary information. This master data attribute is only applicable to a sub-site location.

  For example, instead of sharing that a product is on *some* shelf in the back room of store 123, a party may wish to communicate the *exact* shelf in the backroom of store 123, e.g. shelf #4567. The Sub-Site Detail master data attribute provides the identity of the specific shelf; e.g., 4567.

9.1 Location Master Data Constraints

The following table specifies which master data attributes may or must be used depending on the type of location.

Master Data Attribute	Value of Master Data Attribute	Attribute Usage	
		Site Location	Sub-Site Location
Site Location	A GLN or other site identifier	Required	Required
Sub-Site Type	One of the numeric codes specified below.	Omitted	Required
Sub-Site Attributes	Zero or more numeric codes specified below.	Omitted	Optional
Sub-Site Detail	An arbitrary string, whose meaning must be agreed upon by trading partners	Omitted	Optional

9.2 Location Master Data Names

The EPCIS standard provides for access to master data elements through the use of name value pairs. In order to access the value of a particular master data element, one must know the corresponding name by which it can be looked up. The following table defines the names by which the values (see subsequent section) for the master data elements defined here can be accessed.

Name	Master Data Element
`urn:epcglobal:cbv:mda:site`	Site Location
`urn:epcglobal:cbv:mda:sst`	Sub-Site Type
`urn:epcglobal:cbv:mda:ssa`	Sub-Site Attributes
`urn:epcglobal:cbv:mda:ssd`	Sub-Site Detail

Example (non-normative): An EPCIS document in XML format containing a usage sample may be found in Section 10.4.

9.3 Location Master Data Values

Using the names above, one can access the master data associated with a particular location. Each of the master data elements associated with a particular location identifier have specific values that are allowed. Those values are specified in the sections below.

9.3.1 Site Location

The Site Location master data attribute provides a well-known identifier for the site within which the location is contained (or, in the case of a site-level location identifier, is the well-known identifier for the site itself). When the identifier for the location to which this master data attribute applies is an SGLN EPC, the value of the corresponding Site Location master data attribute SHALL be the 13-digit GLN implied by the company prefix and location reference components of that SGLN. When the location identifier is some other URI, the value of the corresponding Site Location master data attribute SHALL be any string of 128 characters or fewer that identifies the site.

Explanation (non-normative): If the location identifier is something other than an SGLN EPC, the site location is typically something other than a GLN. The meaning of the site location master data attribute in that case is outside the scope of the CBV.

9.3.2 Sub-Site Type

The value of the Sub-Site Type master data attribute for a location identifier, if present, SHALL be one of the codes in the following table:

Sub-Site Type Master Data Attribute Values		
Code	**Short Description**	**Definition**
201	Backroom	An area within a store (all formats - club, etc) used to hold product until it is purchased or can be moved to the sales floor
202	Storage Area	An area where product is kept within a facility to fulfill future need. Reserve rack or bulk stacking. A location where the product is stored until it is needed in selection aisles making it accessible to the consumer. Reserve slots may contain one or multiple pallet loads, as well as multiple items within them For a retail store Secondary storage area associated with a store (may not be in the physical location) Potential to use this more broadly and add attributes to make distinction where necessary (recalled area, quarantined area, controlled substance, lay-away)
203	Sales Floor	An area within a store (all formats - club, etc) where product is displayed for customer purchase
207	Returns Area	An area within a facility for holding or consolidating product to be sent back to the supplier, shipper or designated location
208	Production Area	An area within a facility where the conversion of materials and or assembly of components to manufacture goods, products or services takes place.

Sub-Site Type Master Data Attribute Values		
Code	**Short Description**	**Definition**
209	Receiving Area	An area within a facility where incoming merchandise is unloaded and checked for condition and completeness
210	Shipping Area	An area within a facility where outgoing merchandise is checked for condition and completeness and loaded onto a conveyance for transport
211	Sales Floor Transition Area	An area within a store between two physical locations (e.g. Backroom and Sales Floor) - used for a read point only
212	Customer Pick-Up Area	An area designated at a store for customer to take possession of purchased product.
213	Yard	An area outside of the main building used for holding product (e.g. Trailer or container)
214	Container Deck	An area on board a shipping vessel where containers are loaded.
215	Cargo Terminal	An area where cargo may get transferred between carriers. Cargo terminals provide the interface between modes of transportation.
251	Packaging Area	An area within a facility where product is packaged.
252	Picking Area	An area within a facility in which product is picked to fulfill an order.
253	Pharmacy Area	An area within a facility where prescription products are stored, dispensed and/or sold.
299	Undefined	Any sub-site type not identified by any of the listed values

9.3.3 Sub-Site Attributes

The value of the Sub-Site Attributes master data attribute for a location identifier SHALL be zero or more of the codes in the following table.

When the value of the Sub-Site Attributes master data attribute is transmitted as a single string (including when the Sub-Site Attributes master data attribute is transmitted using

the `EPCISMasterDataDocument` form specified in [EPCIS1.0]), the string SHALL consist of the codes separated by commas with no leading, trailing, or internal whitespace characters, and furthermore the codes SHALL appear in ascending numerical sequence reading from left-to-right.

Explanation (non-normative): The restriction on ascending numerical sequence guarantees that there is only one way to compose the string for a given set of attributes. This simplifies application processing of this data; e.g., when comparing whether two location identifiers have an identical set of Sub-Site Attributes.

Sub-Site Attribute Master Data Attribute Values		
Code	**Short Description**	**Definition**
401	Electronics	A specific area within the store for holding electronic products such as TV's, DVD players, etc.
402	Cold storage	A specific area or room that maintains a temperature above freezing but below ambient room temperature.
403	Shelf	A specified internal location for holding product.
404	Frozen	A specific area or room that maintains a temperature at or below freezing
405	Fresh	A specific area or room that maintains a specified temperature and/or humidity to preserve stored product
406	Promotion	A specific area or room that is used to hold special purchased product.
407	End Cap	A specific internal location on the sales floor, typically at the end of an aisle, for displaying product.
408	Point of Sale	An area in a retail location where sales transactions occur
409	Security	A designated internal location for the purpose of minimizing direct access to the product
411	General Mdse	An area where typically - nonfood products other than perishable, dry groceries and health and beauty care products that are displayed in stores on standard shelving. Examples include household cleaning products, paper napkins, laundry detergents, and insect repellents
412	Grocery	An area where typically - food products that are displayed in stores on standard shelving. Examples include canned goods, produce, meats.
413	Box Crusher	A Baler used to compact recycled materials (e.g. corrugated boxes, slip sheets and packaging material)

Sub-Site Attribute Master Data Attribute Values		
Code	**Short Description**	**Definition**
414	Dock / Door	One or more doors where trucks or rail cars are loaded (shipping) or unloaded (receiving). Used to load or unload trailers or vans.
415	Conveyor Belt	A continuous moving strip or surface that is used for transporting single cartons or a load of objects from one place to another
416	Pallet Wrapper	An are where any automatic or manual method using bands of plastic film applied to product used to encase palletized loads prior to shipment to protect against product damage
417	Fixed Reader	Any fixed read point configuration (reader and antennas) for the purpose of capturing EPC data (e.g. Door way or conveyor read point)
418	Mobile Reader	Any non-fixed (portable) reader configuration (reader and antennas) for the purpose of capturing EPC data (e.g. Hand held or forklift reader)
419	Shelf/Storage	Where the product is stored on the sales floor, not accessible to the customer, until it can be moved, making it accessible to the consumer.
420	Returns	An area within a store or retailer DC for holding or consolidating product to be sent back to the supplier, shipper or designated location.
421	Staging	An area within a DC or Manufacturing Facility which the receiving and shipping docks use to gather and check inbound and outbound loads.
422	Assembly	An area where components are put together into an end product, appropriate to the process concerned.
423	Lay-Away	An area area within a store for holding or consolidating customer purchases for final payment and pickup
424	Dispenser	Tablet, caplet or capsule dispensing machine in which bulk product has been placed to be dispensed on a prescription basis.
425	Quarantine	An area at a Manufacturing, Distribution or Retail facility to hold product that may not be suitable for consumption until further inspection

Sub-Site Attribute Master Data Attribute Values		
Code	**Short Description**	**Definition**
426	Controlled Substance	A caged and locked area in which regulated, controlled substance pharmaceuticals are held while awaiting shipment.
427	Recalled Product	An area in which recalled product is stored pending shipment back to the manufacturer or the manufacturerôs designated returns center for final disposition
428	Quality Control	An area in which any product not meeting quality standards is held pending further evaluation.
429	Printing Room	An area which provides printed labels/tags for the goods/cartons/pallets within a **DC** or **Manf Facility** Please note ï this supports the process where an EPC tag is encoded off the line and is later commissioned and associated with a particular product.
430	Truck Dock	A parking bay, partly enclosed by a raised platform, at which trucks are loaded and unloaded, e.g. in a warehouse site.
431	Entrance Gate	A point of transport access into a yard or other arriving area.
432	Exit Gate	A point of transport exit from a yard or other departing area.
433	Gate	A point of transport within a facility ï not indicated specifically as an entrance or an exit point.
434	Read Point Verification Spot	A point at which a tagged object's location has been verified by an associated read of a separate fixed location tag. Read Point Verification Spot would be used when there is a business process to capture the current location of an object at rest (typically with a mobile reader).

9.3.4 Sub-Site Detail

The value of the Sub-Site Detail master data attribute for a location, if present, SHALL be any string of up to 128 characters in length.

10 Example EPCIS Documents (non-normative)

The following sections provide examples of usage of the Core Business Vocabulary..

10.1 CBV-Complaint Object Event using standard vocabulary

The following shows a CBV-Compliant EPCIS document in XML format containing a single object event, where CBV-Compliant identifiers are used for business step and disposition, and EPCs are used for all user vocabulary values.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<epcis:EPCISDocument
    xmlns:epcis="urn:epcglobal:epcis:xsd:1"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    creationDate="2005-07-11T11:30:47.0Z"
    schemaVersion="1">
<EPCISBody>
  <EventList>
    <ObjectEvent>
      <eventTime>2007-07-26T21:41:19Z</eventTime>
      <recordTime>2007-07-26T21:41:19Z</recordTime>
      <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
      <epcList>
        <!-- Section 8.2.1 – EPC Identifier -->
        <epc>urn:epc:id:sgtin:0614141.181335.234</epc>
      </epcList>
      <action>ADD</action>
      <!-- Section 7.2.1 – BizStep -->
      <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
      <!-- Section 7.2.2 – Disposition -->
      <disposition>urn:epcglobal:cbv:disp:active</disposition>
      <!-- Section 8.3.1 – EPC URI for Locations -->
      <readPoint>
         <id>urn:epc:id:sgln:0614141.00300.1</id>
      </readPoint>
      <!-- Section 8.3.1 – EPC URI for Locations -->
      <bizLocation>
         <id>urn:epc:id:sgln:0614141.00300.0</id>
     </bizLocation>
     <bizTransactionList>
        <!-- Section 8.4.1 – EPC URI -->
        <!-- Section 7.3.2 – BTT -->
        <bizTransaction
type="urn:epcglobal:cbv:btt:po">urn:epc:id:gdti:0614141.06012.1234</biz
Transaction>
     </bizTransactionList>
    </ObjectEvent>
  </EventList>
</EPCISBody>
</epcis:EPCISDocument>
```

10.2 CBV-Compliant Object Event using HTTP URLs and Private or Industry-wide URNs

The following shows a CBV-Compliant EPCIS document in XML format containing a single object event, illustrating the use of HTTP URLs and Private or Industry-wide URNs for user vocabulary values.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<epcis:EPCISDocument
    xmlns:epcis="urn:epcglobal:epcis:xsd:1"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    creationDate="2005-07-11T11:30:47.0Z"
    schemaVersion="1">
<EPCISBody>
  <EventList>
    <ObjectEvent>
      <eventTime>2007-07-26T21:41:19Z</eventTime>
      <recordTime>2007-07-26T21:41:19Z</recordTime>
      <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
      <epcList>
        <!-- Section 8.2.2 -->
        <epc>urn:example:epcis:id:obj:Q12345.67890.001</epc>
        <!-- Section 8.2.3 -->
        <epc>http://epcis.example.com/user/vocab/obj/12345.67890</epc>
      </epcList>
      <action>ADD</action>
      <!-- Section 7.1.2 – BizStep -->
      <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
      <!-- Section 7.2.2– Disposition -->
      <disposition>urn:epcglobal:cbv:disp:active</disposition>

      <!-- Section 8.3.2 Location identifier -->
      <readPoint>
        <id>urn:example:epcis:id:loc:warehouse23</id>
      </readPoint>
      <!-- Section 8.3.3 Location identifier -->
      <bizLocation>
      <id>http://epcis.example.com/user/vocabularies/loc/abc.12345</id>
      </bizLocation>
      <bizTransactionList>
        <!-- Section 8.4.4 -->
        <bizTransaction
type="urn:epcglobal:cbv:btt:po">http://transaction.example.com/produtio
n/orders/bt/po12345</bizTransaction>
        <!-- Section 8.4.3 -->
        <bizTransaction
type="urn:epcglobal:cbv:btt:inv">urn:example:epcis:bt:inv:12345</bizTra
nsaction>
         <!-- Section 8.4.2 – Legacy System BT Identifier -->
        <bizTransaction
type="urn:epcglobal:cbv:btt:desadv">urn:epcglobal:cbv:bt:0614141000029:
asn12345</bizTransaction>
      </bizTransactionList>
     </ObjectEvent>
   </EventList>
</EPCISBody>
```

```
</epcis:EPCISDocument>
```

10.3 CBV-Compatible Event

The following shows a CBV-Compatible EPCIS document in XML format containing a single object event. CBV-Compliant EPC identifiers are used for physical objects and locations, but because non-standard identifiers are used for business step and disposition the document is CBV-Compatible and not CBV-Compliant.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<epcis:EPCISDocument
    xmlns:epcis="urn:epcglobal:epcis:xsd:1"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    creationDate="2005-07-11T11:30:47.0Z"
    schemaVersion="1">
<EPCISBody>
  <EventList>
    <ObjectEvent>
      <eventTime>2007-07-26T21:41:19Z</eventTime>
      <recordTime>2007-07-26T21:41:19Z</recordTime>
      <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
      <epcList>
        <!-- Section 8.2.1 – EPC Identifier -->
        <epc>urn:epc:id:sgtin:0614141.181335.234</epc>
      </epcList>
      <action>ADD</action>
      <bizStep>urn:example:uservocab:bizstep:quarantined</bizStep>
      <disposition>http://epcis.example.com/user/vocab/disp/contaminate
d</disposition>
      <!-- Section 8.3.1 – Locations -->
      <readPoint>
         <id>urn:epc:id:sgln:0614141.00300.1</id>
      </readPoint>
      <!-- Section 8.3.1 – Locations -->
      <bizLocation>
         <id>urn:epc:id:sgln:0614141.00300.0</id>
     </bizLocation>
    </ObjectEvent>
  </EventList>
</EPCISBody>
</epcis:EPCISDocument>
```

10.4 Location Master Data

The following shows an EPCIS Master Data document illustrating the use of location master data attributes defined in Section 9.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<epcismd:EPCISMasterDataDocument
   xmlns:epcismd="urn:epcglobal:epcis-masterdata:xsd:1"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   schemaVersion="1"
   creationDate="2005-07-11T11:30:47.0Z">
<EPCISBody>
  <VocabularyList>
```

```
    <Vocabulary type="urn:epcglobal:epcis:vtype:ReadPoint">
      <VocabularyElementList>
        <!-- Section 9.2 - Location Master Data Names -->
        <VocabularyElement id="urn:epc:id:sgln:0614141.00300.0">
          <attribute
id="urn:epcglobal:cbv:mda:site">0614141003006</attribute>
        </VocabularyElement>

        <!-- Section 9.2  - Location Master Data Names -->
        <VocabularyElement id="urn:epc:id:sgln:0614141.00300.1">
          <attribute
id="urn:epcglobal:cbv:mda:site">0614141003006</attribute>
          <!-- Section 9.3.2  SST -->
          <attribute id="urn:epcglobal:cbv:mda:sst">208</attribute>
          <!-- Section 9.3.3  SSA -->
          <attribute id="urn:epcglobal:cbv:mda:ssa">422</attribute>
          <attribute id="urn:epcglobal:cbv:mda:ssd">Line #1 at
Manufacturing Plant 1</attribute>
        </VocabularyElement>

        <!-- Section 9.2  - Location Master Data Names -->
        <VocabularyElement id="urn:epc:id:sgln:0614141.00300.2">
          <attribute
id="urn:epcglobal:cbv:mda:site">0614141003006</attribute>
          <!-- Section 9.3.2 SST -->
          <attribute id="urn:epcglobal:cbv:mda:sst">251</attribute>
          <!-- Section 9.3.3 SSA -->
          <attribute id="urn:epcglobal:cbv:mda:ssa">416,417</attribute>
        </VocabularyElement>
      </VocabularyElementList>
    </Vocabulary>
  </VocabularyList>
</EPCISBody>
</epcismd:EPCISMasterDataDocument>
```

11 References

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