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Information technology — GS1 Core business vocabulary (CBV)

Technologies de l'information — Vocabulaire relatif aux activités de base GS1

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*.

Core Business Vocabulary (CBV)

GS1 Standard

Version 1.1, May 2014

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Abstract

This GS1 Standard defines Version 1.1 of the Core Business Vocabulary (CBV). The goal of this standard is to specify the structure of vocabularies and specific values for the vocabulary elements to be utilized in conjunction with the GS1 Electronic Product Code Information Services (EPCIS) standard for data sharing both within and across enterprises. The aim is to standardize these elements across users of EPCIS to improve the understanding of data contained in EPCIS events.

Audience for this document

The target audience for this standard includes:

- Users 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 GS1. See `www.gs1.org/gsmp` for more information.

This version of the GS1 CBV 1.1 Standard is the ratified version and has completed all GSMP steps.

Comments on this document should be sent to `gsmp@gs1.org`.

Differences from CBV 1.0

CBV 1.1 is fully backward compatible with CBV 1.0 except as noted below.

CBV 1.1 includes these new or enhanced features:

- A new standard vocabulary for EPCIS source/destination type is added.
- Templates for new user vocabularies for EPCIS source/destination identifier, EPCIS transformation identifier, and object classes are added.
- New business step, disposition, and business transaction type values are added. The definitions of existing values are also clarified.
- Disposition values `non_sellable_expired`, `non_sellable_damaged`, `non_sellable_disposed`, `non_sellable_no_pedigree_match`, and `non_sellable_recalled` defined in CBV 1.0 are deprecated in favor of new

disposition values `expired`, `damaged`, `disposed`, `no_pedigree_match`, and `recalled` introduced in CBV 1.1.

- RFC5870-compliant geocoordinate URIs are now permitted as location identifiers.
- The introductory material is revised to align with the GS1 System Architecture.

Table of Contents

1 Introduction – Core Business Vocabulary

This GS1 Standard 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 [EPCIS1.1], which defines mechanisms to exchange information both within and across organization 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
- Source/Destination types

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

- Objects
- Locations
- Business transactions
- Source/Destination identifiers
- Transformation identifiers

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 GS1 System Architecture

The Core Business Vocabulary is a companion standard to the EPCIS standard. EPCIS is the standard that defines the technical interfaces for capturing and sharing event data. EPCIS defines a framework data model for event data. The Core Business Vocabulary is a GS1 *data standard* that supplements that framework by defining specific data values that may populate the EPCIS data model. As such, the CBV exists in the "Share" group of GS1 standards.

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 1.1 standard [EPCIS1.1] 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 or digital objects or classes of physical or digital objects. Identifiers for physical or digital objects in the Core Business Vocabulary are specified in Section 8.2 (instance-level) and Section 8.3 (class-level). In the case of an EPCIS TransformationEvent, an optional TransformationID may be used to link together multiple events that describe the same transformation. The Core Business Vocabulary includes TransformationIDs in Section 8.7.

- *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 "where" 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 a bar code or RFID tag, the Read Point is often the location where the bar code or RFID tag was read. 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 "why" dimension consists of two identifiers and a list of business transaction identifiers, which collectively provide the business context or "why" 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 "what" 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 8.5.
  - *Source and Destination References* An EPCIS event may refer to one or more sources and/or destinations that describe the endpoints of a business transfer of which the event is a part. Each source or destination reference consists of two identifiers:
    - *Source or Destination Type* Denotes a particular kind of source or destination. *Example: the identifier that denotes "owning party".* Identifiers for source and destination types in the Core Business Vocabulary are specified in Section 7.4.
    - *Source or Destination Identifier* Denotes a source or destination of the type indicated by the Business Transaction Type. *Example: <The identifier that denotes Example Corp as an owning party>* Identifiers for sources and destinations in the Core Business Vocabulary are specified in Section 8.6.

3.2 Vocabulary Kinds

(The material in this section is adapted directly from [EPCIS1.1], Section 6.2.)

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

Examples of vocabularies defined in the EPCIS standard are business steps, dispositions, location identifiers, physical or digital 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 “business step,” whose elements are identifiers denoting such things as “shipping,” “receiving,” and so on. One trading partner may generate an event having a business step of “shipping,” and another partner receiving that event through a query can interpret it because of a prior agreement as to what “shipping” means.

Standard Vocabulary elements tend to be defined by organizations of multiple end users, such as GS1, industry consortia outside GS1, 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), *business transaction types* (Section 7.3), and *source and destination types* (Section 7.4). 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 GS1 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 organization’s 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 "business location," whose elements are identifiers denoting such things as "Acme Corp. Distribution Center #3." 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 "Acme Corp. Distribution Center #3," 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:id: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 or digital objects* (Sections 8.2 and 8.3), *locations* which include both read points and business locations (Section 8.4), *business transaction identifiers* (Section 8.5), *source/destination identifiers* (Section 8.6), and *transformation identifiers* (Section 8.7).

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.