

BS ISO/IEC 19988:2015



BSI Standards Publication

# Information technology — GS1 Core business vocabulary (CBV)

**bsi.**

...making excellence a habit.™

### National foreword

This British Standard is the UK implementation of ISO/IEC 19988:2015.

The UK participation in its preparation was entrusted to Technical Committee ICT/-/1, Information systems co-ordination.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2015.  
Published by BSI Standards Limited 2015

ISBN 978 0 580 87129 0

ICS 35.020

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2015.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

---

INTERNATIONAL  
STANDARD

BS ISO/IEC  
19988:2015

**ISO/IEC**  
**19988**

First edition  
2015-09-15

---

---

**Information technology — GS1 Core  
business vocabulary (CBV)**

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



Reference number  
ISO/IEC 19988:2015(E)

© ISO/IEC 2015



**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva,  
Switzerland  
Tel. +41 22 749 01 11 Fax  
+41 22 749 09 47 copyright  
iso.org  
www.iso.org

## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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*.



## GDSN Package Measurement Rules

GS1 Standards Document  
GS1 Standard

Version 1.1, May 2014





© 2010–2014 GS1 AISBL

All rights reserved.

GS1 Global Office

Avenue Louise 326, bte 10

B-1050 Brussels, Belgium

## Disclaimer

GS1 AISBL (GS1) is providing this document as a free service to interested industries.

This document was developed through a consensus process of interested parties in developing the Standard. Although efforts have been made to assure that the document is correct, reliable, and technically accurate, GS1 makes NO WARRANTY, EXPRESS OR IMPLIED, THAT THIS DOCUMENT IS CORRECT, WILL NOT REQUIRE MODIFICATION AS EXPERIENCE AND TECHNOLOGY DICTATE, OR WILL BE SUITABLE FOR ANY PURPOSE OR WORKABLE IN ANY APPLICATION, OR OTHERWISE. Use of this document is with the understanding that GS1 DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF NON-INFRINGEMENT OF PATENTS OR COPYRIGHTS, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE, THAT THE INFORMATION IS ERROR FREE, NOR SHALL GS1 BE LIABLE FOR DAMAGES OF ANY KIND, INCLUDING DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES, ARISING OUT OF USE OR THE INABILITY TO USE INFORMATION CONTAINED HEREIN OR FROM ERRORS CONTAINED HEREIN.

2

## Abstract

3 This GS1 Standard defines Version 1.1 of the Core Business Vocabulary (CBV). The  
4 goal of  
5 this standard is to specify the structure of vocabularies and specific values for the  
6 vocabulary  
7 elements to be utilized in conjunction with the GS1 Electronic Product Code Information  
8 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.

9

## Audience for this document

- 10 The target audience for this standard includes:
- 11 • Users implementing the EPCIS standard for the purposes of capturing and sharing  
12 event data  
in the supply chain.
  - 13 • Parties interested in implementing EPCIS Accessing applications.
  - 14 • Parties interested in implementing EPCIS Capture applications.

15

## Status of this document

16 This section describes the status of this document at the time of its  
17 publication. Other  
18 documents may supersede this document. The latest status of this document  
series is  
maintained at GS1. See [www.gs1.org/gsmg](http://www.gs1.org/gsmg) for more information.  
19 This version of the GS1 CBV 1.1 Standard is the ratified version and has completed  
20 all GSMP  
steps.

21 Comments on this document should be sent to [gsmg@gs1.org](mailto:gsmg@gs1.org).

22

## Differences from CBV 1.0

- 23 CBV 1.1 is fully backward compatible with CBV 1.0 except as noted below.  
24 CBV 1.1 includes these new or enhanced features:
- 25 • A new standard vocabulary for EPCIS source/destination type is added.
  - 26 • Templates for new user vocabularies for EPCIS source/destination identifier,  
27 EPCIS

transformation identifier, and object classes are added.

- 28 • New business step, disposition, and business transaction type values are  
29 added. The  
definitions of existing values are also clarified.
- 30 • Disposition values non\_sellable\_expired, non\_sellable\_damaged,  
31 non\_sellable\_disposed, non\_sellable\_no\_pedigree\_match, and  
32 non\_sellable\_recalleddefined in CBV 1.0 are deprecated in favor of new







147

## 1 Introduction – Core Business Vocabulary

148 This GS1 Standard defines the Core Business Vocabulary (CBV). The goal of this  
 149 standard is to  
 150 specify various vocabulary elements and their values for use in conjunction with the  
 151 EPCIS  
 152 standard [EPCIS1.1], which defines mechanisms to exchange information both within  
 153 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.

154 This standard is intended to provide a basic capability that meets the above goal. In  
 155 particular,  
 156 this standard is designed to define vocabularies that are *core* to the EPCIS abstract  
 157 data model  
 158 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.

159 Additional end user requirements may be addressed by augmenting the vocabulary  
 160 elements  
 161 herein with additional vocabulary elements defined for a particular industry or a set of  
 162 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.

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

- 165 • Business step identifiers
- 166 • Disposition identifiers
- 167 • Business transaction types
- 168 • Source/Destination types

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

- 170 • Objects
- 171 • Locations
- 172 • Business transactions
- 173 • Source/Destination identifiers
- 174 • Transformation identifiers

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

- 177 • Site Location
- 178 • Sub-Site Type
- 179 • Sub-Site Attributes
- 180 • Sub-Site Detail
- 181 Additional detailed master data regarding locations (addresses, etc) are not
- 182 defined in this standard.

183

## 2 Relationship to the GS1 System Architecture

184 The Core Business Vocabulary is a companion standard to the EPCIS standard. EPCIS  
 185 is the  
 186 standard that defines the technical interfaces for capturing and sharing event data.  
 187 EPCIS defines  
 188 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.

189

## 3 Relationship to EPCIS

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

192

### 3.1 EPCIS Event Structure

193 The EPCIS 1.1 standard [EPCIS1.1] specifies the data elements in an EPCIS event.  
 194 The  
 195 following lists these data elements, and indicates where the Core Business Vocabulary provides identifiers that may be used as values for those data elements.

196 • *The “what” dimension* The *what* dimension for most event types contains one or  
 197 more

198 unique identifiers for physical or digital objects or classes of physical or digital  
 199 objects.

200 Identifiers for physical or digital objects in the Core Business Vocabulary are  
 201 specified in

202 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.

203 • *The “when” dimension* The moment in time at which an EPCIS event occurred.

204 Event time is fully specified in the EPCIS standard.

205 • *The “where” dimension* The “where” dimension consists of two identifiers that  
 206 describe different aspects of where an event occurred:

207 • *Read Point* The location where the EPCIS event took place. In the case of an  
 208 EPCIS event arising from reading a bar code or RFID tag, the Read Point is often the  
 209 location  
 210 where the bar code or RFID tag was read. Identifiers for read points in the

## Core

Business Vocabulary are specified in Section 8.3.

211 *Example: A reader is placed at dock door #3 at the London Distribution Center*  
212 *(DC).*

213 *Product passed through the dock door. Read point = <The identifier that*  
*stands for*  
*London DC Dock Door #3>*

214 • *Business Location* The location where the subject of the event is  
215 assumed to be  
216 following an EPCIS event, until a new event takes place that indicates  
217 otherwise.

Identifiers for business locations in the Core Business Vocabulary are  
specified in

Section 8.3.

218 *Example: A product is read through the sales floor transition door at store #123.*

219 *The*

220 *product is now sitting on the sales floor. Business location = <The identifier that*  
*stands*  
*for store #123 Sales Floor>*

- 221 • *The “why” dimension* The “why” dimension consists of two identifiers and a list of  
 222 business transaction identifiers, which collectively provide the business context or  
 223 “why” the  
 event occurred:
- 224 • *Business Step* Denotes a specific activity within a business process. The  
 225 business step  
 226 field of an event specifies what business process step was taking place that  
 227 caused the  
 event to be captured. Identifiers for business steps in the Core Business  
 Vocabulary are  
 specified in Section 7.1.  
 228 *Example: an EPCIS event is generated as a product departs the location*  
 229 *identified by*  
*the Read Point. Business Step = <The identifier that denotes “shipping”>*
  - 230 • *Disposition* Denotes the business state of an object. The disposition field of an  
 231 event  
 232 specifies the business condition of the subject of the event (the things specified in  
 233 the  
 234 “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.  
 235 *Example: an EPCIS event is generated and afterward the products can be sold*  
 236 *as-is and*  
 237 *customers can access product for purchase. Disposition = <The identifier that*  
*denotes*  
*“sellable and accessible”>*
  - 238 • *Business Transaction References* An EPCIS event may refer to one or more  
 239 business  
 transaction documents. Each such reference consists of two identifiers:
    - 240 • *Business Transaction Type* Denotes a particular kind of business  
 241 transaction.  
 242 *Example: the identifier that denotes “purchase order”.* Identifiers for  
 business  
 transaction types in the Core Business Vocabulary are specified in  
 Section 7.3.
    - 243 • *Business Transaction Identifier* Denotes a specific business transaction  
 244 document of  
 245 the type indicated by the Business Transaction Type. *Example: <The*  
 246 *identifier that*  
*denotes Example Corp purchase order #123456>* Identifiers for business  
 transactions in the Core Business Vocabulary are specified in Section 8.5.  - 247 • *Source and Destination References* An EPCIS event may refer to one or more  
 248 sources  
 249 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:
    - 250 • *Source or Destination Type* Denotes a particular kind of source or  
 251 destination.  
 252 *Example: the identifier that denotes “owning party”.* Identifiers for

source and  
destination types in the Core Business Vocabulary are specified in  
Section 7.4.

- 253  
254  
255  
256
- *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.

257

### 3.2 Vocabulary Kinds

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

259 Vocabularies are used extensively within EPCIS to model conceptual, physical,  
260 and digital  
entities that exist in the real world.  
261 Examples of vocabularies defined in the EPCIS standard are business steps,  
262 dispositions,  
263 location identifiers, physical or digital object identifiers, business transaction type  
264 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.  
265 It is useful to distinguish two kinds of vocabularies, which follow different patterns in  
266 the way  
they are defined and extended over time:  
267 • *Standard Vocabulary* A Standard Vocabulary is a set of Vocabulary Elements  
268 whose  
269 definition and meaning must be agreed to in advance by trading partners who will  
exchange  
events using the vocabulary.  
270 • *User Vocabulary* A User Vocabulary is a set of Vocabulary Elements whose  
271 definition and  
meaning are under the control of a single organization.  
272 These concepts are explained in more detail below.

273

### 3.2.1 Standard Vocabulary

274 A Standard Vocabulary is a set of Vocabulary Elements whose definition and meaning  
275 must be  
276 agreed to in advance by trading partners who will exchange events using the  
277 vocabulary. For  
278 example, the EPCIS standard defines a vocabulary called “business step,” whose  
279 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.  
280 Standard Vocabulary elements tend to be defined by organizations of multiple end  
281 users, such as  
282 GS1, industry consortia outside GS1, private trading partner groups, and so on. The  
283 master data  
284 associated with Standard Vocabulary elements, if any master data is defined at all, are  
285 defined by  
286 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.

287 The Standard Vocabularies specified in the Core Business Vocabulary standard are:  
288 *business*  
289 *steps* (Section 7.1), *dispositions* (Section 7.2), *business transaction types* (Section 7.3),  
290 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.

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

292 urn:epcglobal:cbv:bizstep:receiving

293 This identifier is defined by the GS1 Core Business Vocabulary standard, and its  
294 meaning is  
known and accepted by those who implement the standard.

295 While an individual end user organization acting alone may introduce a new Standard  
296 Vocabulary element, such an element would have limited use in a data exchange  
297 setting, and

298 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

299 elements beyond those defined by the Core Business Vocabulary, and these may be  
300 usefully used  
within that trading group.

301

### 3.2.2 User Vocabulary

302 A User Vocabulary is a set of Vocabulary Elements whose definition and meaning are  
303 under the  
304 control of a single organization. For example, the EPCIS standard defines a vocabulary  
305 called  
306 “business location,” whose elements are identifiers denoting such things as “Acme Corp.  
307 Distribution Center #3.” The location identifier and any associated master data is  
308 assigned by  
309 the user. Acme Corp may generate an event whose business location field contains the  
310 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.

311 Example:

312 urn:epc:id:sgln:0614141.12345.400

313 This identifier is assigned by the End User who owns the GS1 Company Prefix  
314 0614141, and the  
315 meaning of the identifier (that is, what location it denotes) is determined exclusively by  
316 that end  
user. Another End User can understand the meaning of this identifier by consulting  
associated  
master data.

317 User Vocabulary elements are primarily defined by individual end user organizations  
318 acting  
319 independently. The master data associated with User Vocabulary elements are typically  
320 defined  
321 by those same organizations, and are usually distributed to trading partners through the  
322 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.

323 While the Core Business Vocabulary standard does not (and as the discussion above  
324 makes clear,  
325 cannot) specify particular user vocabulary elements, the Core Business Vocabulary does  
326 provide  
327 syntax templates that are recommended for use by End Users in constructing their own  
328 user  
329 vocabulary elements. See Section 8.1. The user vocabularies for which templates are  
330 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).

331

## 4 Terminology and Typographical Conventions

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

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

- 339 The following typographical conventions are used throughout the document:
- 340 • ALL CAPS type is used for the special terms from [ISODir2] enumerated above.
  - 341 • Monospace type is used to denote programming language, UML, and XML  
342 identifiers, as  
well as for the text of XML documents.
- 343 Placeholders for changes that need to be made to this document prior to its  
344 reaching the final  
345 stage of approved GS1 standard are prefixed by a rightward-facing arrowhead, as  
this  
paragraph is.

346

## 5 Compliance and Compatibility

347 The GS1 Core Business Vocabulary is designed to facilitate interoperability in EPCIS  
348 data  
349 exchange by providing standard values for vocabulary elements to be included in  
350 EPCIS data.

351 The standard recognizes that the greatest interoperability is achieved when all data  
conforms to  
the standard, and also recognizes that individual End Users or groups of trading  
partners may  
need to extend the standard in certain situations.

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

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

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

361 The formal definition of these terms is specified below.

362

### 5.1 CBV Compliant

363 A “CBV-Compliant Document” is a document that conforms to the schema and other  
364 constraints  
365 specified in [EPCIS1.1], and which furthermore conforms to all the normative language  
in this  
standard that pertains to a “CBV-Compliant Document.”

366 A “CBV-Compliant Application” is any application for which both of the following are true:

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

- 375 The following list summarizes the requirements for an EPCIS document to be a  
376 “CBV-  
Compliant Document,” as specified elsewhere in this standard:
- 377 • A CBV-Compliant Document SHALL conform to the schema and other constraints  
378 specified  
in [EPCIS1.1].
  - 379 • A CBV-Compliant Document SHALL NOT use any URI beginning  
380 with  
urn:epcglobal:cbv: except as specified in this standard.
  - 381 • Each EPCIS event in a CBV-Compliant Document SHALL include a bizStep field,  
382 and  
383 the value of the bizStep field SHALL be a URI consisting of the prefix  
384 urn:epcglobal:cbv:bizstep: followed by the string specified in the first column of  
some row of the table in Section 7.1.2.
  - 385 • A CBV-Compliant Document MAY include a disposition field. If the disposition  
386 field is present, the value of the disposition field SHALL be a URI consisting of the  
387 prefix urn:epcglobal:cbv:disp: followed by the string specified in the first column  
388 of some row of the table in Section 7.2.2.
  - 389 • Each EPCIS event in a CBV-Compliant Document MAY include one or more  
390 bizTransaction elements. If bizTransaction elements are present, each such  
391 element MAY include a type attribute. If a given bizTransaction element includes a  
392 type attribute, the value of the type attribute SHALL be a URI consisting of the prefix  
393 urn:epcglobal:cbv:btt: followed by the string specified in the first column of some  
394 row of the table in Section 7.3.2.
  - 395 • Each EPCIS event in a CBV-Compliant Document MAY include one or more source  
396 or  
397 destination elements. The value of the type attribute of each such element SHALL  
398 be  
a URI consisting of the prefix urn:epcglobal:cbv:sdt: followed by the string  
specified in the first column of some row of the table in Section 7.4.2.
  - 399 • URIs defined in the EPC Tag Data Standard SHALL only be used in a CBV-  
400 Compliant  
Document as specified in Section 8.1.1.
  - 401 • A CBV-Compliant document SHALL use one of the three URI forms specified in  
402 Section 8.2 to populate instance-level identifiers in the “what” dimension of EPCIS  
403 events  
404 (that is, the epcList, parentID, childEPCs, inputEPCList, and  
405 outputEPCList fields in EPCIS ObjectEvents, AggregationEvents,  
406 TransactionEvents, and TransformationEvents), for every such field that is  
407 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.
  - 408 • A CBV-Compliant document SHALL NOT use an SGLN EPC (urn:epc:id:sgln:...) as  
409 an object identifier.

- 410 • A CBV-Compliant document SHALL use one of the three URI forms specified in  
411 Section 8.3 to populate class-level identifiers in the “what” dimension of EPCIS  
412 events (that  
413 is, the epcClass fields in all EPCIS event types), for every such field that is not null.  
414 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.

- 415 • A CBV-Compliant document SHALL use one of the four URI forms specified in  
416 Section 8.4  
417 to populate the “where” dimension of EPCIS events (that is, the readPoint and  
418 businessLocation fields in all EPCIS event types), for every such field that is not null.  
419 A CBV-Compliant document SHOULD use the EPC URI form as specified in Section  
8.4.1  
unless there is a strong reason to do otherwise.
- 420 • When using an EPC URI as a location identifier (Section 8.4.1), a CBV-Compliant  
421 document  
422 SHOULD NOT use EPC schemes other than SGLN (urn:epc:id:sgln:...), unless there  
is a strong reason to do so.
- 423 • A CBV-Compliant document SHALL use one of the four URI forms specified in  
424 Section 8.5  
425 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.
- 426 • When using an EPC URI as a business transaction identifier, a CBV-Compliant  
427 Documents  
428 SHOULD NOT use EPC schemes other than GDTI EPCs (urn:epc:id:gdti:...), or  
429 GSRN EPCs (urn:epc:id:gsrn:...), unless there is a strong reason to do so. GDTI  
430 EPCs SHOULD only be used as business transaction identifiers when they have  
431 been  
assigned to denote a business transaction, rather than a physical document not  
connected with  
any business transaction.
- 432 • A CBV-Compliant document SHALL use one of the three URI forms specified in  
433 Section 8.6 to populate a source or destination identifier field (that is, the text  
434 content of a  
435 source or destination element), for every such field that is not null. A CBV-  
436 Compliant document SHOULD use the EPC URI form as specified in Section 8.6.1  
unless  
there is a strong reason to do otherwise.
- 437 • When using an EPC URI as a location identifier (Section 8.6.1), a CBV-Compliant  
438 document  
439 SHOULD NOT use EPC schemes other than SGLN (urn:epc:id:sgln:...), unless there  
is a strong reason to do so.
- 440 • A CBV-Compliant document SHALL use one of the four URI forms specified in  
441 Section 8.7  
442 to populate the transaction identifier field (that is, the text content of the  
443 transformationID element) of EPCIS TransformationEvents, for every such  
field that is not null.
- 444 • When using an EPC URI as a transformation identifier, a CBV-Compliant Document  
445 SHOULD NOT use EPC schemes other than GDTI EPCs (urn:epc:id:gdti:...), unless  
446 there is a strong reason to do so. GDTI EPCs SHOULD only be used as  
447 transformation  
448 identifiers when they have been assigned to denote a transformation, rather than a  
physical  
document not connected with any transformation.

- 450 A “CBV-Compatible Document” is a document that conforms to the schema and  
451 other  
452 constraints specified in [EPCIS1.1], and which furthermore conforms to all the  
normative  
language in this standard that pertains to a “CBV-Compatible Document.”
- 453 A “CBV-Compatible Application” is any application for which both of the following are true:

- 454 • If it operates in a mode where it claims to accept a CBV-Compatible Document as an  
455 input,  
456 the application SHALL accept any document that is a CBV-Compatible Document  
457 according  
to this standard, and furthermore in processing that input SHALL interpret each CBV  
identifier according to the meaning specified herein.
- 458 • If it operates in a mode where it claims to produce a CBV-Compatible Document as  
459 an  
460 output, the application SHALL only produce a document that is a CBV-Compatible  
461 Document according to this standard, and furthermore in generating that output  
SHALL only  
use CBV identifiers to denote their meaning as specified herein.
- 462 The following list summarizes the requirements for an EPCIS document to be a  
463 “CBV-  
Compatible Document,” as specified elsewhere in this standard.
- 464 • A CBV-Compatible Document SHALL conform to the schema and other  
465 constraints  
specified in [EPCIS1.1].
- 466 • A CBV-Compatible Document SHALL NOT use any URI beginning  
467 with  
urn:epcglobal:cbv: except as specified in this standard.
- 468 • URIs defined in the EPC Tag Data Standard SHALL only be used in a CBV-  
469 Compatible  
Document as specified in Section 8.1.1.
- 470 • A CBV-Compatible Document SHOULD use the EPC URI form as specified in  
471 Section 8.2.1 for each instance-level object identifier unless there is a strong  
472 reason to do  
otherwise.
- 473 • A CBV-Compatible Document SHOULD use the EPC URI form as specified in  
474 Section 8.3.1 for each class-level object identifier unless there is a strong  
475 reason to do  
otherwise.
- 476 • A CBV-Compatible Document SHALL NOT use an SGLN EPC (urn:epc:id:sgln:...)   
477 as an object identifier.
- 478 • A CBV-Compatible Document SHOULD use the EPC URI form as specified in  
479 Section 8.4.1 for each location identifier unless there is a strong reason to do  
otherwise.
- 480 • When using an EPC URI as a location identifier (Section 8.4.1), a CBV-Compatible  
481 Document SHOULD NOT use EPC schemes other than SGLN (urn:epc:id:sgln:...),  
482 unless there is a strong reason to do so.
- 483 • When using an EPC URI as a business transaction identifier, a CBV-Compatible  
484 Document  
SHOULD NOT use EPC schemes other than GDTI EPCs (urn:epc:id:gdti:...) or  
485 GSRN EPCs (urn:epc:id:gsrn:...), unless there is a strong reason to do so. GDTI  
486 EPCs SHOULD only be used as business transaction identifiers when they have  
487 been  
488 assigned to denote a business transaction, rather than a physical document not  
connected with  
any business transaction.

- 489 • When using an EPC URI as a location identifier (Section 8.6.1), a CBV-Compatible  
490 document SHOULD NOT use EPC schemes other than SGLN (urn:epc:id:sgln:...),  
491 unless there is a strong reason to do so.



- 492 • When using an EPC URI as a transformation identifier, a CBV-Compatible  
493 Document  
494 SHOULD NOT use EPC schemes other than GDTI EPCs (urn:epc:id:gdti:...) unless  
495 there is a strong reason to do so. GDTI EPCs SHOULD only be used as  
496 transformation  
identifiers when they have been assigned to denote a transformation, rather than a  
physical  
document not connected with any transformation.
- 497 In general, every CBV-Compliant Document is also a CBV-Compatible Document,  
498 though not  
499 every CBV-Compatible Document is a CBV-Compliant Document. A CBV-Compatible  
500 Document may include an identifier that is compliant with [EPCIS1.1] but which is not  
501 permitted for CBV-Compliant Documents, provided that it meets the requirements  
502 above. A  
CBV-Compatible Document may also include an event in which the bizStepfield is  
omitted,  
whereas that field is always required for CBV-Compliant Documents.

503

## 6 Use of Uniform Resource Identifiers (URIs)

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

505

### 6.1 URI Prefix for Standard Vocabularies in the CBV

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

508 urn:epcglobal:cbv:*qualifier.payload*

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

511

### 6.2 Limitation on Use of the URI Prefix

512 The Core Business Vocabulary standard is the only GS1 standard in which URIs  
513 beginning with  
urn:epcglobal:cbv: are defined.

514 A CBV-Compliant or CBV-Compatible document SHALL NOT use any URI beginning  
515 with

urn:epcglobal:cbv: or urn:epc: except as specified in this standard.

516 Both CBV-Compliant and CBV-Compatible documents MAY contain URIs that do not  
517 begin

518 with urn:epcglobal:cbv:, provided that the requirements specified elsewhere in this  
519 standard are met. These SHALL be used to identify vocabulary elements not defined by  
520 the CBV

standard. URIs beginning with urn:epcglobal: SHALL NOT be used except as specified  
herein or in another GS1 standard.

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

523 urn:epcglobal:cbv:disp:quarantined

524 *In this case the particular URI above is NOT part of this standard and therefore may not*  
525 *be*  
526 *used. Instead a URI like the following could be used and considered CBV-Compatible.*  
527 *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.*

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

529

## 7 Standard Vocabularies

530 This section specifies standard vocabulary elements for four EPCIS standard  
531 vocabularies:  
business steps, dispositions, business transaction types, and source/destination  
types.

532

### 7.1 Business Steps

533 This section specifies standard identifiers for the EPCIS BusinessStepIDvocabulary.  
534 These  
identifiers populate the bizStepfield in an EPCIS event, as specified below.

535

#### 7.1.1 URI Structure

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

537 `urn:epcglobal:cbv:bizstep:payload`

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

540

#### 7.1.2 Element Values and Definitions – Business Step

541 Each EPCIS event in a CBV-Compliant Document SHALL include a bizStepfield, and  
542 the  
543 value of the bizStepfield SHALL be a URI consisting of the prefix  
544 `urn:epcglobal:cbv:bizstep:` followed by the string specified in the first column of  
545 some row of the table below. The portion following the prefix SHALL be written  
546 exactly as  
specified in the table below, in all lowercase letters (possibly including underscores,  
as  
indicated).

547 *Example (non-normative): the following shows an excerpt of a CBV-Compliant EPCIS*  
548 *document in XML format containing a single event, where the business step of that*  
549 *event is the*

*Core Business Vocabulary “shipping” value:*

```
550 <epcis:EPCISDocument xmlns:epcis="urn:epcglobal:epcis:xsd:1" ...>
551   <EPCISBody>
552     <EventList>
553       <ObjectEvent>
554         ...
555         <bizStep>urn:epcglobal:cbv:bizstep:shipping</bizStep>
556         ...
557       </ObjectEvent>
558     </EventList>
559   </EPCISBody>
560 </epcis:EPCISDocument>
```

561 *The following example is NOT CBV-Compliant, because it does not use the full URI*  
562 *string in the*  
563 *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 [EPCIS1.1].*

```
564 <epcis:EPCISDocument xmlns:epcis="urn:epcglobal:epcis:xsd:1" ...>  
565   <EPCISBody>  
566     <EventList>  
567       <ObjectEvent>  
568         ...  
569         <bizStep>shipping</bizStep>
```

**WRONG**

```

570 ...
571 </ObjectEvent>
572 </EventList>
573 </EPCISBody>
574 </epcis:EPCISDocument>

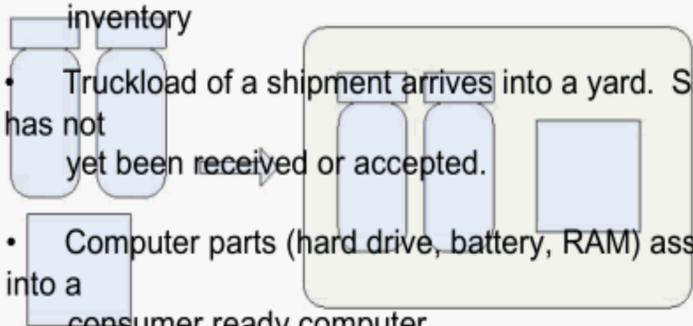
```

575 *Additional samples may be found Section 10.1.*

576 Each EPCIS event in a CBV-Compatible Document MAY include a bizStepfield, and the  
577 value of the bizStepfield MAY be a URI as specified above for a CBV-Compliant  
578 document,  
579 and MAY be any other URI that meets the general requirements specified in [EPCIS1.1],  
580 Section

6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.

Value	Definition	Examples
accepting where	Denotes a specific activity within a business process where an object changes possession and/or ownership.	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>A wholesaler is assigned a lot of fish at a fish auction, verifies the quantity and acknowledges receipt.</li> </ul>
arriving where assembling or	<p>Denotes a specific activity within a business process where an object arrives at a location.</p> <p>Denotes an activity within a business process whereby one or more objects are combined to create a new finished product.</p>	<ul style="list-style-type: none"> <li>Truckload of a shipment arrives into a yard. Shipment has not yet been received or accepted.</li> <li>Computer parts (hard drive, battery, RAM) assembled into a consumer ready computer</li> <li>Healthcare kitting: a surgical kit including drug, syringe, and gauze are combined to create a new 'product': a <i>kit</i></li> </ul>



In contrast to transformation, in the output of assembling the original objects are still recognizable and/or the process is reversible; hence, assembling would be used in an Aggregation Event, not a Transformation Event.

2 Cnt

2 Cnt

2 Cnt

2 Cnt

Syringe Gauze

Syringe  
Gauze

Kit Serial Nbr: 1234566789

Before

Kit with Serial Number  
(New Finished Good)



Business Steps		
Value	Definition	Examples
collecting where	Denotes a specific activity within a business process where an object is picked up and collected for future disposal, recycling or re-used.	<ul style="list-style-type: none"> <li>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</li> </ul>
commissioning	<p>Process of associating an instance-level identifier (such as an EPC) with a specific object, or the process of associating a class-level identifier, not previously used, with one or more objects. A tag may have been encoded and applied in this step, or may have been previously encoded.</p> <p>In the case of a class-level identifier, commissioning differs from <code>creating_class_instance</code> in that commissioning always indicates that this is the first use of the class-level identifier, whereas <code>creating_class_instance</code> does not specify whether the class-level identifier has been used before.</p>	<ul style="list-style-type: none"> <li>Rented or leased pallets are picked up and brought to a collection center.</li> <li>On a packaging line, an encoded EPC is applied to a case and associated to the product.</li> <li>An individual virtual document (e.g. digital coupon, digital voucher, etc.) is assigned an EPC</li> <li>One hundred bottles of a particular batch of pharmaceutical product are produced, those being the first bottles of that batch to be produced.</li> <li>Sides of beef are transformed into individual packaged steaks. This may be an EPCIS 1.1 TransformationEvent if the input sides of beef are also tracked.</li> </ul>
consigning	<p>Indicates the overall process of <code>staging_outbound</code>, loading, departing, and accepting. It may be used when more granular process step information is unknown or inaccessible.</p> <p>The use of <code>consigning</code> is mutually exclusive from the use of <code>staging_outbound</code>, loading, departing, and accepting.</p>	<ul style="list-style-type: none"> <li>A wholesaler comes aboard a fishing vessel, selects and buys boxes of fish, and brings them to his premises.</li> <li>A manufacturer retrieves components from a consignment warehouse for use in its assembly line. In the logical second of leaving the consignment warehouse, the components pass into the ownership of the manufacturer.</li> <li>A manufacturer stages products for loading, loads them into a container, the container is sealed, and the container departs. Ownership transfers to the receiver sometime during this overall process. If this is done in a single step, then <code>consigning</code> is used.</li> </ul>
	Note: This business step is similar to shipping, but includes a change of possession and/or ownership at the outbound side.	

creating\_class\_instance

Denotes a step in a business process where an instance or increased quantity of a class-level identifier is produced. Unlike commissioning, this business step may be repeated for the same class-level identifier.

- Water, sugar, and other ingredients are combined to produce a single batch of soda over a single shift on a single production line. This may be an EPCIS 1.1 TransformationEvent if the input ingredients are tracked.
- Potatoes are sorted by size and quality, washed, and packed into cases of a single lot in a single packaging facility on a single date.



Business Steps		
Value	Definition	Examples
cycle_counting	Process of counting objects within a location in order to obtain an accurate inventory for business needs other than accounting purposes (e.g., replenishment and allocation).	<ul style="list-style-type: none"> <li>A preselected subset of objects (for instance, all products belonging to a certain brand owner or a specific object class) within a retail store, are counted by a handheld reader.</li> <li>All objects of a specific sub-location (sales floor or a shelf on the sales floor, e.g.) are counted by a handheld reader.</li> </ul>
decommissioning	Process of disassociating an instance level identifier (such as an EPC) with an object. The object may be re-commissioned at some point in the future – however only with a new instance-level identifier.	<ul style="list-style-type: none"> <li>An eSeal on a reusable container is broken when the container is opened, so that the container is no longer identified by the instance-level identifier that was in the eSeal.</li> </ul>
departing	Denotes a specific activity within a business process	<ul style="list-style-type: none"> <li>A digital coupon or an empties refund voucher is redeemed at retail point-of-sale</li> <li>Truckload of a shipment departs a yard, typically through a gate and begins transit to another location</li> </ul>
where its destroying	Process of terminating an object. For an instance-level identifier, the object should not be the subject of subsequent events; subsequent events are likely indicative of error (such as a stray read of a tag inside an incinerator). For a class level identifier, quantities are reduced;	<ul style="list-style-type: none"> <li>Distributor or Retailer puts empty case in the incinerator or box crusher.</li> </ul>
disassembling where	Denotes a specific activity within a business process	<ul style="list-style-type: none"> <li>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.</li> <li>A surgical kit (e.g. 2- 50 count bottles of medication and 1 syringe gauze) is broken down into its separate component parts</li> </ul>
encoding	Process of writing an instance-level identifier (typically an EPC) to a bar code or RFID tag, where the identifier is not yet associated with an object at this step in the process.	<ul style="list-style-type: none"> <li>3rd Party writes tags and returns spool of case tags to Manufacturer</li> </ul>
entering_exiting	Denotes a specific activity at the Entrance/Exit door of a facility where customers are either leaving with purchased product or entering with product to be returned to the facility.	<ul style="list-style-type: none"> <li>Customer leaves the facility of Retailer X with their purchased items through a customer entrance/exit door.</li> </ul>



Business Steps		
Value	Definition	Examples
holding where	Denotes a specific activity within a business process  an object is segregated for further review.	<ul style="list-style-type: none"> <li>• Retailer X unloads a second pallet on to their receiving dock, and, finding no purchase order for the pallet, moves the pallet to a holding area on the dock</li> <li>• 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</li> </ul>
inspecting	Process of reviewing objects to address potential physical or documentation defects.	<ul style="list-style-type: none"> <li>• Shipper Z is told by Customs to move a container to a special area until Customs can inspect and clear the container.</li> <li>• Manufacturer A pulls 10 bottles from every batch to ensure that the product and pill count in the bottles match expectations</li> <li>• Distributor Y checks all returned products to designate them either as saleable or as damaged</li> <li>• Regulator R pulls 3 bottles from a shelf to determine if the bottles have a correct pedigree</li> </ul>
installing where	Denotes a specific activity within a business process  an object is put into a composite object (not merely a container).	<ul style="list-style-type: none"> <li>• Customs Agent C uses a machine to scan the contents of a shipping container</li> <li>• Pallet pool operator Z checks if certain pallets comply with quality standards.</li> <li>• Additional memory chips and a rechargeable battery are installed within a computer</li> <li>• A duplexing unit is installed on a laser printer</li> </ul>
installing where	Denotes a specific activity within a business process  an object is put into a composite object (not merely a container).	<ul style="list-style-type: none"> <li>• Additional safety equipment is installed within the cabin of an aircraft or vehicle (e.g. fire extinguishers)</li> </ul>
killing an	In installing the composite object exists prior to this step, whereas in assembling the composite object is created during the step.  Process of terminating an RFID tag previously associated with	<ul style="list-style-type: none"> <li>• Kill Command is issued to the tag to prevent any further</li> </ul>
loading where	object. The object and its instance-level identifier may continue to exist and be the subject of subsequent events  (via a bar code, manual data entry, replacement tag, etc).	<ul style="list-style-type: none"> <li>• Manufacturer A loads pallets into a container. The pallets are aggregated to the container.</li> </ul>
loading where	Denotes a specific activity within a business process  an object is loaded into shipping conveyance.	<ul style="list-style-type: none"> <li>• Distributor Y loads racks full of totes on to a truck</li> </ul>
other	A business step not identified by any of the values listed in the core business vocabulary.	<ul style="list-style-type: none"> <li>• "Other" may be used for terms that have yet to be added to the core business vocabulary from an industry or a user</li> </ul>



Business Steps		
Value	Definition	Examples
packing	Denotes a specific activity within a business process that includes putting objects into a larger container – usually for shipping. Aggregation of one unit to another typically occurs at this point.	<ul style="list-style-type: none"> <li>12 packs of soda are placed into a case</li> <li>Loose potatoes are placed into a tote.</li> </ul>
picking	Denotes a specific activity within a business process that includes the selecting of objects to fill an order.	<ul style="list-style-type: none"> <li>Distributor Y places three units into a tote to meet the requirements of a purchase order</li> <li>Manufacturer A pulls three pallets from its racks to fulfill a purchase order</li> </ul>
receiving	<p>Denotes a specific activity within a business process that indicates that an object is being received at a location and is added to the receiver's inventory.</p> <p>The use of receiving is mutually exclusive from the use of arriving and accepting.</p>	<ul style="list-style-type: none"> <li>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.</li> <li>A shipment from a manufacturer factory site to manufacturer distribution center, is matched against the transaction record then added to local inventory.</li> </ul>
removing where	Denotes a specific activity within a business process where an object is taken out of a composite object.	<ul style="list-style-type: none"> <li>A defective airplane part is taken out of the engine</li> </ul>
repackaging where	Denotes a specific activity within a business process where an object's packaging configuration is changed.	<ul style="list-style-type: none"> <li>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.</li> </ul>
repairing where	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.	<ul style="list-style-type: none"> <li>A computer is brought to a repair center to fix a problem</li> <li>An airplane part is in maintenance center to diagnose an issue</li> </ul>
replacing where	Denotes a specific activity within a business process where an object is substituted or exchanged for another object.	<ul style="list-style-type: none"> <li>A defective airplane part is replaced by a new part.</li> </ul>
reserving	Process in which a set of instance level identifiers, not yet commissioned, are provided for use by another party.	<ul style="list-style-type: none"> <li>Manufacturer provides set of case EPC numbers to a 3rd Party labeler</li> </ul>
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).	<ul style="list-style-type: none"> <li>Retailer X sells a screwdriver to a customer by checking it out through a point-of-sale system.</li> </ul>



Business Steps		
Value	Definition	Examples
shipping	<p>Indicates the overall process of staging_outbound, loading and 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.</p> <p>The use of shipping is mutually exclusive from the use of staging_outbound, departing, or loading.</p>	<ul style="list-style-type: none"> <li>Manufacturer A loads and reads product into the shipping container and closes the door. The product has 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)</li> <li>At Distributor Y, the truck containing racks full of totes pulls away from the shipping dock or staging area.</li> <li>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 "shipping" event.</li> <li>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 "shipping" event. NOTE: This would be the case if there were NO departing step at a read point at the gate.</li> <li>Typical Process flow: staging_outbound loading departing The above steps assume an organization's ability and desire to share all steps in the process. If those process steps are not captured, the single business step of shipping would be used.</li> </ul>
staging_outbound	Denotes a specific activity within a business process in which an object moves from a facility to an area where it will await transport pick-up.	<ul style="list-style-type: none"> <li>Container is being closed and will be subsequently loaded onto a vehicle in the yard.</li> <li>Container is being closed and seal is applied, and will be subsequently loaded onto a vehicle in the yard</li> </ul>
stock_taking	Process of counting objects within a location following established rules and/or standards to serve as a basis for accounting purposes.	<ul style="list-style-type: none"> <li>Product has been picked and is now in a staging lane waiting for loading into a container</li> <li>All EPCs in a retail store are read by a handheld reader following a procedure accepted by the organization's accounting firm.</li> </ul>
stocking	Denotes a specific activity within a business process within a location to make an object available to the customer or for order fulfillment within a DC.	<ul style="list-style-type: none"> <li>Retailer X places cans from a case on to a shelf on the floor</li> <li>Dist X moves goods from a storage area to a picking area</li> </ul>
storing where	Denotes a specific activity within a business process where an object is moved into and out of storage within a location.	<ul style="list-style-type: none"> <li>Manufacturer A moves a pallet from the receiving area to a rack</li> <li>Retailer X moves a case from the receiving dock to a shelf in the backroom</li> </ul>





Business Steps		
Value	Definition	Examples
transforming (Deprecated)	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.  This business step is <b>deprecated</b> for use with EPCIS 1.1. The EPCIS 1.1 standard has an event type, TransformationEvent, dedicated to transformations. The business steps commissioning, new_class_instance, or other business steps may be used with	<ul style="list-style-type: none"> <li>Meat packer X cuts a whole cow into two sides of beef (1 to many)</li> <li>Food processor Y combines water, vegetables, and meat to create a unit of soup (many to one)</li> <li>Butcher Z combines meat from multiple carcasses, grinds them together, and creates individual packages of ground beef (many to many)</li> </ul>
transporting	TransformationEvent. Process of moving an object from one location to another using a vehicle (e.g., a ship, a train, a lorry, an aircraft).	<ul style="list-style-type: none"> <li>Carrier X conveys 150 sea containers from Hong Kong seaport to Hamburg seaport with a container vessel.</li> <li>A train with 20 goods wagons goes from one train station to another.</li> </ul>
unloading	Denotes a specific activity within a business process	<ul style="list-style-type: none"> <li>A lorry moves a swap trailer from a depot to a distribution center.</li> <li>Manufacturer A unloads pallets from a shipping conveyance.</li> </ul>
where	an object is unloaded from a shipping conveyance.	The pallets are disaggregated from the shipping conveyance.
unpacking	Denotes a specific activity within a business process that includes removing products (individuals, inners, cases, pallets) from a larger container – usually after receiving or accepting. Disaggregation of one unit from another typically occurs at this point.	<ul style="list-style-type: none"> <li>Distributor Y unloads racks full of totes from a truck</li> <li>12 packs of soda are removed from a case</li> <li>Loose potatoes are taken off from a tote.</li> </ul>

581

582

## 7.2 Dispositions

583 This section specifies standard identifier values for the EPCIS

584 DispositionIDvocabulary.

These identifiers populate the dispositionfield in an EPCIS event, as specified below.

585

### 7.2.1 URI Structure

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



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

590

## 7.2.2 Element Values and Definitions – Dispositions

591 Each EPCIS event in a CBV-Compliant Document MAY include a dispositionfield. If the  
 592 dispositionfield is present, the value of the dispositionfield SHALL be a URI  
 593 consisting of the prefix urn:epcglobal:cbv:disp:followed by the string specified in the  
 594 first column of some row of the table below. The portion following the prefix SHALL be  
 595 written

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

597 *Example (non-normative): the following shows an excerpt of a CBV-Compliant*  
 598 *EPCIS*

599 *document in XML format containing a single event, where the disposition of that*  
*event is the*

*Core Business Vocabulary “in progress” value:*

```
600 <epcis:EPCISDocument xmlns:epcis="urn:epcglobal:epcis:xsd:1" ...>
601   <EPCISBody>
602     <EventList>
603       <ObjectEvent>
604         ...
605         <disposition>urn:epcglobal:cbv:disp:in_progress</disposition>
606         ...
607       </ObjectEvent>
608     </EventList>
609   </EPCISBody>
610 </epcis:EPCISDocument>
```

611 *The following example is NOT CBV-Compliant, because it does not use the full URI*  
 612 *string in the*  
 613 *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 [EPCIS1.1].*

```
614 <epcis:EPCISDocument xmlns:epcis="urn:epcglobal:epcis:xsd:1" ...>
615   <EPCISBody>
616     <EventList>
617       <ObjectEvent>
618         ...
619         <disposition>in_progress</disposition>
620         ...
621       </ObjectEvent>
622     </EventList>
623   </EPCISBody>
624 </epcis:EPCISDocument>
```

**WRONG**

625 *Additional examples may found in Section 10.1.*

626 Each EPCIS event in a CBV-Compatible Document MAY include a dispositionfield,  
 627 and  
 628 the value of the dispositionfield MAY be a URI as specified above for a CBV-Compliant  
 629 document, and MAY be any other URI that meets the general requirements specified  
 630 in  
 [EPCIS1.1], Section 6.4, except for those URIs which in this standard are forbidden or

designated for a different purpose.



Dispositions		
Value	Definition	Examples
active	A commissioned object has just been introduced into the supply chain.	<ul style="list-style-type: none"> <li>Manufacturer A commissions tags for 10 cases of product.</li> <li>A virtual document has been assigned an EPC</li> </ul> Business step: commissioning
container_closed	Object has been loaded onto a container, the doors have been closed and the shipment sealed.	<ul style="list-style-type: none"> <li>Container is being closed and will be awaiting pickup in the yard.</li> <li>Container is being closed and electronic seal is applied.</li> </ul>
destroyed	Object has been fully rendered non-usable.	Business step: staging_outbound <ul style="list-style-type: none"> <li>Incinerator Operator B indicates that product and packaging have been incinerated</li> </ul>
encoded	An instance-level identifier has been written to a bar code or RFID tag, but not yet commissioned.	Business step: destroying <ul style="list-style-type: none"> <li>3rd Party has written EPCs to tags and returns spool of case tags to Manufacturer</li> </ul>
inactive	Decommissioned object that may be reintroduced to the supply chain.	Business step: encoding <ul style="list-style-type: none"> <li>A reusable tag is removed from a reusable transport item.</li> </ul>
in_progress	Default disposition for object proceeding through points in the supply chain.	<ul style="list-style-type: none"> <li>A digital coupon or an empties refund voucher has been redeemed at retail point-of-sale</li> </ul> Business step: decommissioning <ul style="list-style-type: none"> <li>Product arrives at a location and is being accepted and verified.</li> <li>Product is being prepared for shipment.</li> </ul> Business step: receiving
		picking loading accepting staging_outbound arriving
in_transit	Object being shipped between two trading partners.	<ul style="list-style-type: none"> <li>Shipper Z pulled a container/product out of a manufacturer's yard on to a road</li> </ul> Business step: shipping departing





Dispositions		
Value	Definition	Examples
expired	Object is past expiration date.	<ul style="list-style-type: none"> <li>Distributor Y indicates that a product is past its expiration date</li> </ul> Business step: holding staging_outbound storing
damaged	Object is impaired in its usefulness and/or reduced in value due to a defect.	<ul style="list-style-type: none"> <li>Pallet pool operator P notices that a plank of a pallet is broken and records this incident by scanning the EPC of the pallet.</li> <li>Retailer R receives a shipment where the product packages on the pallet have been dented</li> </ul> Business step: accepting inspecting receiving removing repairing replacing
disposed	Object has been returned for disposal.	<ul style="list-style-type: none"> <li>A package of pharmaceuticals has been picked up by a distributor and will be subsequently destroyed</li> </ul>
no_pedigree_match	In validating the pedigree for the object, no match was found, causing the product to be quarantined for further investigation and disposition.	<ul style="list-style-type: none"> <li>Distributor Y could not obtain a valid pedigree for a product from its Manufacturer A</li> </ul> Business step: holding staging_outbound storing
non_sellable_other	Object cannot be sold to a customer.	<ul style="list-style-type: none"> <li>A product is not sellable pending further evaluation.</li> <li>A product is not sellable, and one of the other dispositions (expired, recalled, damaged, no_pedigree_match) does not apply.</li> <li>Product has been sold and is awaiting customer pick-up.</li> </ul> Business step: holding inspecting staging_outbound storing



Dispositions		
Value	Definition	Examples
recalled	Object is non-sellable because of public safety reasons.	<ul style="list-style-type: none"> <li>Manufacturer A requested that all Retailers and Distributors return its batteries that could overheat and explode</li> </ul> Business step: holding staging_outbound storing
reserved	Instance-level identifier has been allocated for a third party.	<ul style="list-style-type: none"> <li>Distributor receives EPC numbers and can encode tag with the numbers.</li> </ul> Business step: reserving
returned	Object has been sent back for various reasons. It may or may not be sellable.	<ul style="list-style-type: none"> <li>Product is received at a returns center from a customer because of an over-shipment, recall, expired product, etc</li> </ul> Business step: receiving
sellable_accessible	Product can be sold as is and customer can access product for purchase.	holding shipping <ul style="list-style-type: none"> <li>Retailer X puts a case of screwdrivers on to a shelf or display within customer reach</li> </ul> Business step: stocking receiving
sellable_not_accessible	Product can be sold as is, but customer cannot access product for purchase.	<ul style="list-style-type: none"> <li>Retailer X puts a case of screwdrivers on to a shelf in a store backroom</li> </ul> Business step: receiving storing
		loading holding inspecting
retail_sold	Product has been purchased by a customer.	<ul style="list-style-type: none"> <li>A customer at Retailer X purchased a screwdriver by checking it out through the point of sale system</li> </ul> Business step: retail_selling
stolen	An object has been taken without permission or right.	<ul style="list-style-type: none"> <li>A pharmaceutical manufacturer completes an investigation of serial numbers that are missing from inventory, and concludes that they have been stolen</li> </ul>
unknown	An object's condition is not known.	



632 **7.2.2.1 CBV 1.0 Disposition Values Deprecated in CBV 1.1**

633 CBV 1.0 defined several disposition values that are deprecated in CBV 1.1. The  
 634 following table  
 635 lists the deprecated dispositions and the values which replace them in CBV 1.1. Each  
 636 CBV 1.1  
 637 value applies to all the situations that the corresponding CBV 1.0 value did, but may  
 638 also be

applied to similar situations where the concept of “sellable” is not relevant. For example, in

CBV 1.1 the disposition damaged	may be applied to a returnable asset, which was never
never	considered “sellable” even when it was undamaged.
non_sellable_expired	expired

non_sellable_damaged	damaged
non_sellable_disposed	disposed
non_sellable_no_pedigree_match	no_pedigree_match
non_sellable_recalled	recalled

639

640

**7.3 Business Transaction Types**

641 This section specifies standard identifier values for the EPCIS  
 642 BusinessTransactionTypeIDvocabulary. These identifiers may be used to populate the  
 643 typeattribute of a bizTransactionelement in an EPCIS event. See Section 8.5 for details  
 644 of when these identifiers should be used.

645

**7.3.1 URI Structure**

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

647 urn:epcglobal:cbv:btt:*payload*

648 where the *payload* part is a string as specified in the next section. Every payload  
 649 string

defined herein contains only lower case letters and the underscore character.

650

**7.3.2 Element Values and Definitions – Business Transaction Types**

651 Each EPCIS event in a CBV-Compliant Document MAY include one or more  
 652 bizTransactionelements. If bizTransactionelements are present, each such element  
 653 MAY include a typeattribute. If a given bizTransactionelement includes a type  
 654 attribute, the value of the typeattribute SHALL be a URI consisting of the prefix  
 655 urn:epcglobal:cbv:btt: followed by the string specified in the first column of some row  
 656 of the table below. The portion following the prefix SHALL be written exactly as specified  
 657 in

658 the table below, in all lowercase letters (possibly including underscores, as indicated).  
 See

Section 8.5 for more compliance requirements concerning business transaction types.

- 659 *Example (non-normative): An EPCIS document in XML format containing a usage*  
660 *sample may*  
661 *be found in Section 10.1.*  
662 Each EPCIS event in a CBV-Compatible Document MAY include one or more  
662 bizTransactionelements. If bizTransactionelements are present, each such element

663 MAY include a type attribute. If a given bizTransactionelement includes a type attribute,  
 664 the value of the type attribute MAY be a URI as specified above for a CBV-Compliant  
 665 document, and MAY be any other URI that meets the general requirements specified in  
 666 [EPCIS1.1], Section 6.4, except for those URIs which in this standard are forbidden or  
 667 designated for a different purpose.

Business Transaction Types	
Value	Definition
po	<b>Purchase Order.</b> A document/message that specifies details for goods and services ordered under conditions agreed by the seller and buyer.
poc	<b>Purchase Order Confirmation.</b> 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	<b>Bill of Lading.</b> A document issued by a carrier to a shipper, listing and acknowledging receipt of goods for transport and specifying terms of delivery
inv	<b>Invoice.</b> A document/message claiming payment for goods or services supplied under conditions agreed by the seller and buyer.
rma	<b>Return Merchandise Authorization.</b> A document issued by the seller that authorizes a buyer to return merchandise for credit determination.
pedigree	<b>Pedigree.</b> A record that traces the ownership or custody and transactions of a product as it moves among various trading partners.
desadv	<b>Despatch Advice.</b> A document/message by means of which the seller or consignor informs the consignee about the despatch of goods. Also called an "Advanced Shipment Notice," but the value desadv is always used regardless of local nomenclature.
recadv	<b>Receiving Advice.</b> 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.
prodorder	<b>Production Order.</b> An organization-internal document or message issued by a producer that initiates a manufacturing process of goods.

668

## 7.4 Source/Destination Types

669 This section specifies standard identifier values for the EPCIS SourceDestTypeID  
 670 vocabulary. These identifiers may be used to populate the typeattribute of a sourceor  
 671 destinationelement in an EPCIS event. See Section 8.6 for details of when these  
 672 identifiers should be used.

673

### 7.4.1 URI Structure

674 All source/destination type values specified in this section have the following form:

675 urn:epcglobal:cbv:sdt:*payload*

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

678

### 7.4.2 Element Values and Definitions – Source/Destination Types

679 Each EPCIS event in a CBV-Compliant Document MAY include one or more  
 680 sourceand/or

destinationelements. The value of the typeattribute of the sourceor destination

681 element SHALL be a URI consisting of the prefix urn:epcglobal:cbv:sdt:followed by  
 682 the string specified in the first column of some row of the table below. The portion  
 683 following the  
 684 prefix SHALL be written exactly as specified in the table below, in all lowercase letters  
 685 (possibly including underscores, as indicated). See Section 8.6 for more compliance requirements concerning source and destination types.

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

688 Each EPCIS event in a CBV-Compatible Document MAY include one or more  
 689 sourceand/or  
 690 destinationelements. The value of the typeattribute of the sourceor destination  
 691 element MAY be a URI as specified above for a CBV-Compliant document, and MAY  
 692 be any

other URI that meets the general requirements specified in [EPCIS1.1], Section 6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.	
Value	Definition
owning_party	The source or destination identifier denotes the party who owns (or is intended to own) the objects at the originating endpoint or terminating endpoint (respectively) of the business transfer of which this EPCIS event is a part.
possessing_party	The source or destination identifier denotes the party who has (or is intended to have) physical possession of the objects at the originating endpoint or terminating endpoint (respectively) of the business transfer of which this EPCIS event is a part.
location	The source or destination identifier denotes the physical location of the originating endpoint or terminating endpoint (respectively) of the business transfer of which this EPCIS event is a part. When a source of this type is specified on an EPCIS event at the originating endpoint of a business transfer, the source identifier SHOULD be consistent with the Read Point specified in that event. When a destination of this type is specified on an EPCIS event at the terminating endpoint of a business transfer, the destination identifier SHOULD be consistent with the Read Point specified in that event.

693

## 8 User Vocabularies

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

697

### 8.1 General Considerations

698 Unlike the standard vocabularies discussed in Section 7, a vocabulary element in a  
 699 User  
 700 Vocabulary is created by an End User. For example, an End User who creates a new  
 701 business  
 702 location such as a new warehouse may create a business location identifier to refer to  
 703 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.

704 The EPCIS standard (Section 6.4) places general constraints on the identifiers that  
705 End Users  
706 may create for use as User Vocabulary elements. Specifically, an identifier must  
707 conform to  
URI syntax, and must either conform to syntax specified in GS1 standards or must  
belong to a  
subspace of URI identifiers that is under the control of the end user who assigns  
them.

- 708 The Core Business Vocabulary provides additional constraints on the syntax of  
709 identifiers for  
710 user vocabularies, so that CBV-Compliant documents will use identifiers that have a  
711 predictable  
structure. This in turn makes it easier for trading partners to understand the meaning of  
such  
identifiers.
- 712 For each user vocabulary considered here, several different syntax templates are  
713 provided for  
constructing vocabulary elements:
- 714 • *EPC URI* An Electronic Product Code “pure identity” URI may be used as a user  
715 vocabulary element. EPCs have a structure and meaning that is widely  
716 understood. EPCs  
717 may also be encoded into data carriers such as RFID tags and bar codes  
718 according to GS1  
standards. For this reason, EPCs are often the best choice for creating user  
vocabulary  
elements when it is possible to do so.
  - 719 • *Private or Industry-wide URN* A Uniform Resource Name (URN) of the form  
720 `urn:URNNamespace:...`  
721 may be used as a user vocabulary element. Doing so requires that the user who  
722 creates the  
723 vocabulary element be authorized to use the URN namespace that appears following  
724 the  
725 `urn:` prefix. For example, the End User may register its own URN namespace with  
726 the  
727 Internet Assigned Numbers Authority (IANA). Alternatively, an industry consortium  
728 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.
  - 729 • *HTTP URL* A Uniform Resource Locator (URL) of the form  
730 `http://Domain/...`  
731 may be used as a user vocabulary element. Doing so requires that the user who  
732 creates the  
733 vocabulary element be authorized to use the Internet domain name that appears  
734 following the  
735 `http:` prefix. Often a subdomain of the End User’s organization domain is used; for  
736 example, the Example Corporation may choose to use `epcis.example.com` as a  
737 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.

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

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

742 *Explanation (non-normative): The reason that several different syntax templates are*  
743 *provided*  
744 *for each user vocabulary is to provide flexibility for end users to meet their business*  
745 *requirements. Use of an EPC is preferred for most end user vocabularies; however,*  
746 *EPC codes*  
747 *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.*

748 **8.1.1 General Considerations for EPC URIs as User Vocabulary**  
 749 **Elements**

750 Where an EPC URI is used as a User Vocabulary Element, both CBV-Compliant and  
 751 CBV-  
 752 Compatible documents SHALL use an EPC Pure Identity URI, except as noted below.  
 753 An EPC  
 754 Pure Identity URI is a URI as specified in [TDS1.9], Section 6 (specifically, a URI  
 matching the  
 grammar production EPC-URI in [TDS1.9], Section 6.3). EPC “pure identity” URIs begin  
 with  
 urn:epc:id:....

755 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the other  
 756 URI  
 757 forms for EPCs defined in [TDS1.9]. In particular, documents SHALL NOT use EPC Tag  
 758 URIs  
 759 (urn:epc:tag:...), EPC Pure Identity Pattern URIs (urn:epc:idpat:...), or EPC Pattern  
 760 URIs (urn:epc:pat:...), except that both CBV-Compliant and CBV-Compatible documents  
 761 MAY use EPC Pattern URIs for class-level identification of objects as specified in  
 762 Section 8.3.1.

763 Both CBV-Compliant and CBV-Compatible documents MAY use EPC Raw URIs  
 764 (urn:epc:raw:...) as defined in [TDS1.9], 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 [TDS1.9].

765 *Explanation (non-normative): [EPCIS1.1] specifies that “When the unique identity [for an instance-level*  
 766 *identifier*  
 767 *in the “what” dimension] is an Electronic Product Code, the [identifier] SHALL be the “pure identity” URI*  
 768 *for the*  
 769 *EPC as specified in [TDS1.9], Section 6. Implementations MAY accept URI-formatted identifiers other*  
 770 *than EPCs.”*

*The above language clarifies this requirement, and provides more specific references to [TDS1.9]. The*  
*above*

*language also extends these restrictions to the use of EPC URIs in other dimensions of EPCIS events*  
*beyond the*  
*“what” dimension.*

771 **8.1.2 General Considerations for Private or Industry-wide URN as**  
 772 **User Vocabulary Elements**

773 Where specified in Sections 8.2 through 8.5, a CBV-Compliant document or CBV-  
 774 Compatible  
 document MAY use a private or industry-wide URN as specified below.

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

776 urn:URNNamespace:\*\*:quat.Remainder

777 where the components of this template are as follows:

urn: The characters u, r, n, and : (colon).

URNNamespace A URN Namespace registered with the Internet Assigned Numbers Authority according to [RFC2141].

<b>:::</b>	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 <i>quat</i> component, in order to provide flexibility for URN Namespace owners to administer their namespace.
<i>quat.</i>	A qualifier as specified in Sections 8.2 through 8.5, depending on the type of identifier.
<i>Remainder</i>	The remainder of the identifier as specified in Sections 8.2 through 8.5.

778

779 In addition, an identifier of this form SHALL be 128 characters or fewer, and  
 780 SHOULD be  
 60 characters or fewer.  
 781 Identifiers of this form must be assigned by the owner of the URN Namespace. The  
 782 owner of  
 783 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.

784 **8.1.3 General Considerations for HTTP URLs as User Vocabulary**  
 785 **Elements**

786 Where specified in Sections 8.2 through 8.5, a CBV-Compliant document or CBV-  
 787 Compatible  
 document MAY use an HTTP URL.

788 An HTTP URL SHALL have the following form:

789 *http://[Subdomain.]Domain\*\*/qual Remainder*

790 where the components of this template are as follows:

http://	The seven characters h, t, t, p, : (colon), / (slash), and / (slash).
<i>[Subdomain.]Domain</i>	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 registered 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).  <i>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 or organizational 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.</i>
<i>**/</i>	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 object component, in order to provide flexibility for domain owners to administer their namespace.
<i>qual</i>	A qualifier as specified in Sections 8.2 through 8.5, depending on the type of identifier.
<i>Remainder</i>	The remainder of the identifier as specified in Sections 8.2 through 8.5.

791  
 792 In addition, an identifier of this form SHALL be 128 characters or fewer, and  
 793 SHOULD be  
 60 characters or fewer.  
 794 Identifiers of this form must be assigned by the owner of the Internet domain  
 795 *Domain*. The  
 796 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.

797

## 8.2 Physical or Digital Objects (Instance-Level Identification)

798 Instance-level identifiers for physical or digital objects populate the “what” dimension of  
799 EPCIS

800 events. This includes the epclist, parentID, childEPCs, inputEPCs, and  
801 outputEPCs fields in EPCIS ObjectEvents, AggregationEvents,  
802 TransactionEvents, and TransformationEvents. See Section 1 of [EPCIS1.1] for a  
further definition of “object” in this sense, also reproduced below.

803 A CBV-Compliant document SHALL use one of the three URI forms specified in this  
804 section to

805 populate the above fields of EPCIS events, for every such field that is not null. A CBV-  
806 Compatible document MAY use one of the three URI forms specified in this section, or  
807 MAY

use any other URI that meets the general requirements specified in [EPCIS1.1], Section  
6.4,

except for those URIs which in this standard are forbidden or designated for a different  
purpose.

808 Both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI  
809 form as

specified in Section 8.2.1 unless there is a strong reason to do otherwise.

810 *Explanation (non-normative), quoted from [EPCIS1.1]: “Objects” in the context of EPCIS*  
811 *typically refers to physical objects that are identified either at a class or instance level*  
812 *and which*  
813 *are handled in physical handling steps of an overall business process involving one or*  
814 *more*  
815 *organizations. Examples of such physical objects include trade items (products), logistic*  
816 *units,*

817 *returnable assets, fixed assets, physical documents, etc. “Objects” may also refer to*  
818 *digital*

819 *objects, also identified at either a class or instance level, which participate in comparable*  
*business process steps. Examples of such digital objects include digital trade items*  
*(music*  
*downloads, electronic books, etc.), digital documents (electronic coupons, etc), and so*  
*forth.*

*Throughout this document the word “object” is used to denote a physical or digital object,*  
*identified at a class or instance level, that is the subject of a business process step.*

820 *Section 8.2 of this CBV standard defines identifier structures for instance-level*  
821 *identification of*

*Objects; Section 8.3 defines identifier structures for class-level identification of Objects.*

822

### 8.2.1 EPC URI for Instance-level Identification of Objects

823 A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure  
824 Identity

825 URI as specified in Section 8.1.1 to populate the epclist, parentID, and childEPCs  
826 fields in EPCIS ObjectEvents, AggregationEvents, and TransactionEvents.

827 Both CBV-Compliant and CBV-Compatible documents SHOULD use this form unless  
there is a  
strong reason to do otherwise.

828 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use an SGLN  
829 EPC  
(urn:epc:id:sgln:...) as an Object identifier.  
830 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the  
831 other URI  
forms for EPCs defined in [TDS1.9]; see Section 8.1.1 for details.

### 832 **8.2.2 Private or Industry-wide URN for Instance-level Identification of** 833 **Objects**

834 A CBV-Compliant document or CBV-Compatible document MAY use a private or  
835 industry-  
wide URN as specified below to populate the epclList, parentID, and childEPCs fields in

836 EPCIS ObjectEvents, AggregationEvents, and TransactionEvents. However,  
 837 both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form  
 838 (Section 8.2.1) unless there is a strong reason to do otherwise. See Section 8.1 for  
 839 general

considerations regarding the use of Private or Industry-wide URI identifiers.

840 A Private or Industry-wide URI suitable for populating the epclist, parentID, and  
 841 childEPCsfields of EPCIS events SHALL have the following form:

842 urn:*URNNamespace*:*\*\**:obj:*Objid*

843 where the components of this template are as follows:

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

844

845 Identifiers of this form must be assigned by the owner of the URN Namespace. The  
 846 owner of

847 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.

848 *Example (non-normative): An EPCIS document in XML format containing a usage*  
 849 *sample may*

*be found in Section 10.2.*

850

### 8.2.3 HTTP URLs for Instance-level Identification of Objects

851 A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL  
 852 as

853 specified below to populate the epclist, parentID, and childEPCsfields in EPCIS

854 ObjectEvents, AggregationEvents, and TransactionEvents. However, both

855 CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form  
 856 (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.

857 An HTTP URL suitable for populating the epclist, parentID, and childEPCsfields of  
 858 EPCIS events SHALL have the following form:

859 http://[*Subdomain*.]*Domain*:*\*\**/obj/*Objid*

860 where the components of this template are as follows:

http://[ <i>Subdomain</i> .] <i>Domain</i> : <i>**</i> /	As specified in Section 8.1.3.
obj/	The characters o, b, j, and / (slash).
<i>Objid</i>	An identifier for the object that matches the grammar rule segment-nzdefined in [RFC3986], Section 3.3 (among other things, this means <i>Objid</i> may not contain a slash character), and which is unique relative to all other identifiers that begin with the same prefix.



861

862 Identifiers of this form must be assigned by the owner of the Internet domain  
863 *Domain*. The  
864 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.

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

867

### 8.3 Physical or Digital Objects (Class-Level Identification)

868 Class-level identifiers for physical or digital objects populate the “what” dimension of  
869 EPCIS

870 events. This includes the `epcClass` field within the EPCIS `QuantityEvent` (deprecated in  
871 EPCIS 1.1) and within the `quantityElement` structures of EPCIS `ObjectEvents`,  
872 `AggregationEvents`, `TransactionEvents`, and `TransformationEvents`. See  
Section 1 of [EPCIS1.1] for a further definition of “object” in this sense, also reproduced  
below.

873 A CBV-Compliant document SHALL use one of the three URI forms specified in this  
874 section to

875 populate the above fields of EPCIS events, for every such field that is not null. A CBV-  
876 Compatible document MAY use one of the three URI forms specified in this section, or  
877 MAY

use any other URI that meets the general requirements specified in [EPCIS1.1], Section  
6.4,

except for those URIs which in this standard are forbidden or designated for a different  
purpose.

878 Both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI  
879 form as

specified in Section 8.3.1 unless there is a strong reason to do otherwise.

880 *Explanation (non-normative), quoted from [EPCIS1.1]: “Objects” in the context of EPCIS*  
881 *typically refers to physical objects that are identified either at a class or instance level*  
882 *and which*

883 *are handled in physical handling steps of an overall business process involving one or*  
884 *more*

885 *organizations. Examples of such physical objects include trade items (products), logistic*  
886 *units,*

887 *returnable assets, fixed assets, physical documents, etc. “Objects” may also refer to*  
888 *digital*

889 *objects, also identified at either a class or instance level, which participate in comparable*  
*business process steps. Examples of such digital objects include digital trade items*  
*(music*

*downloads, electronic books, etc.), digital documents (electronic coupons, etc), and so*  
*forth.*

*Throughout this document the word “object” is used to denote a physical or digital object,*  
*identified at a class or instance level, that is the subject of a business process step.*

890 *Section 8.2 of this CBV standard defines identifier structures for instance-level*  
891 *identification of*

*Objects; Section 8.3 defines identifier structures for class-level identification of Objects.*

892

### 8.3.1 EPC URI for Class-level Identification of Objects

893 A CBV-Compliant document or CBV-Compatible document MAY use one of the following  
894 URI  
895 forms specified in the EPC Tag Data Standard to populate the epcClassfield within the  
896 EPCIS  
897 QuantityEvent(deprecated in EPCIS 1.1) and within the quantityElementstructures of  
EPCIS ObjectEvents, AggregationEvents, TransactionEvents, and  
TransformationEvents:

GTIN

urn:epc:idpat:sgtin:*CCC.III.\**

[TDS1.9, Section 8]



Identifier Type	URI Form	Normative Reference
GTIN+batch/lot	urn:epc:class:lgtn:CCC.III.LLL	[TDS1.9, Section 6]
GRAI (no serial)	urn:epc:idpat:grai:CCC.TTT.*	[TDS1.9, Section 8]
GDTI (no serial)	urn:epc:idpat:gdti:CCC.TTT.*	[TDS1.9, Section 8]
GCN (no serial)	urn:epc:idpat:sgcn:CCC.TTT.*	[TDS1.9, Section 8]
CPI (no serial)	urn:epc:idpat:cpi:CCC.TTT.*	[TDS1.9, Section 8]

898 where:

- 899 • *CCC* is the GS1 Company Prefix portion of an EPC Pure Identity Pattern URI
- 900 • *III* is the Indicator + Item Reference portion of an SGTIN EPC Pure Identity Pattern
- 901 URI  
or the Indicator + Item Reference portion of an LGTIN EPC Class URI
- 902 • *TTT* is the Returnable Asset Type, Document Type, Coupon Reference, or
- 903 Component/Part  
Type portion of an EPC Pure Identity Pattern for GRAI, GDTI, SGCN, or CPI,  
respectively.

904 A CBV-Compliant document or CBV-Compatible document SHALL NOT use any other  
905 Pure  
906 Identity Pattern URI form specified in [TDS1.9, Section 8]. This includes, for example,  
an

SSCC Pure Identity Pattern URI, or an SGTIN Pure Identity Pattern URI with two “\*”  
wildcards.

907 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the  
908 other URI  
forms for EPCs defined in [TDS1.9]; see Section 8.1.1 for details.

909 *Explanation (non-normative): The EPC Tag Data Standard defines EPC Pure Identity*

910 *Pattern*  
911 *URIs as a way to specify a pattern that matches many instance-level EPCs. For*

912 *example, the*  
913 *EPC Pure Identity Pattern URI urn:epc:idpat:sgtin:0614141.112345.\*matches*  
914 *any SGTIN URI that begins with urn:epc:idpat:sgtin:0614141.112345, for*  
915 *example the specific SGTIN URI urn:epc:idpat:sgtin:0614141.112345.400. In*  
916 *the EPCIS Simple Event Query, such a pattern may be used to match EPCIS events*  
*whose*

*“what” dimension contains instance-level identifiers that have a specified GTIN and*  
*any serial*  
*number.*

917 *The table above specifies the use of EPC Pure Identity Pattern URIs to achieve a*  
918 *second*

919 *purpose, namely as class-level identifiers for use in the Quantity Element fields of*  
920 *EPCIS events.*

*In this usage, the URI urn:epc:idpat:sgtin:0614141.112345.\*refers to the object*  
*class identified by GTIN 10614141123459.*

921 *Not all EPC Pure Identity Pattern URIs make sense as class-level identifiers. For*  
922 *example,*

923 *when urn:epc:idpat:sgtin:0614141.\*.\*is used in an EPCIS query to match*  
924 *instance-level identifiers, it matches all SGTIN identifiers that include GS1 Company*  
925 *Prefix*

926 *0614141. This is valid as a matching condition for a query, but there is no corresponding*  
927 *object*

*class and so this is not a valid class-level identifier. A similar argument applies to a URI such as urn:epc:idpat:sscc:0614141.\*, and the other EPC Pattern URIs not included in the table above.*

928 **8.3.2 Private or Industry-wide URN for Class-level Identification of**  
 929 **Objects**

930 A CBV-Compliant document or CBV-Compatible document MAY use a private or  
 931 industry-  
 932 wide URN as specified below to populate the epcClassfield within the EPCIS  
 933 QuantityEvent(deprecated in EPCIS 1.1) and within the quantityElementstructures of  
 934 EPCIS ObjectEvents, AggregationEvents, TransactionEvents, and  
 935 TransformationEvents. However, both CBV-Compliant and CBV-Compatible documents  
 936 SHOULD use the EPC URI form (Section 8.3.1) unless there is a strong reason to do  
 937 otherwise.

See Section 8.1 for general considerations regarding the use of Private or Industry-wide URI identifiers.

938 A Private or Industry-wide URI suitable for populating the epcClassfield of EPCIS  
 939 events  
 SHALL have the following form:

urn:URNNamespace:**:class:ObjClassid	
941 where the components of this template are as follows:	
urn:URNNamespace:**:	As specified in Section 8.1.2.
class:	The characters c, l, a, s, s, and : (colon).

*ObjClassid* An identifier for the object class 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.

942  
 943 Identifiers of this form must be assigned by the owner of the URN Namespace. The  
 944 owner of  
 945 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.  
 946 *Example (non-normative): An EPCIS document in XML format containing a usage*  
 947 *sample may*  
*be found in Section 10.2.*

948 **8.3.3 HTTP URLs for Class-level Identification of Objects**

949 A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL as  
 950 specified below to populate the epcClassfield within the EPCIS QuantityEvent  
 951 (deprecated in EPCIS 1.1) and within the quantityElementstructures of EPCIS  
 952 ObjectEvents, AggregationEvents, TransactionEvents, and  
 953 TransformationEvents. However, both CBV-Compliant and CBV-Compatible documents  
 954 SHOULD use the EPC URI form (Section 8.3.1) unless there is a strong reason to do  
 955 otherwise.

See Section 8.1 for general considerations regarding the use of HTTP URL identifiers.

956 An HTTP URL suitable for populating the epcClassfields of EPCIS events SHALL have  
 957 the  
 following form:

958 [http://\[Subdomain.\]Domain/\\*\\*/class/ObjClassid](http://[Subdomain.]Domain/**/class/ObjClassid)

959 where the components of this template are as follows:

Template Component	Description
<code>http://[Subdomain.]Domain/**/</code>	As specified in Section 8.1.3.
<code>class/</code>	The characters c, l, a, s, s, and / (slash).
<code>ObjClassid</code>	An identifier for the object class that matches the grammar rule <code>segment-nzdefined</code> in [RFC3986], Section 3.3 (among other things, this means <code>ObjClassid</code> may not contain a slash character), and which is unique relative to all other identifiers that begin with the same prefix.

960

961 Identifiers of this form must be assigned by the owner of the Internet domain  
 962 *Domain*. The  
 963 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.

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

966

## 8.4 Locations

967 Identifiers for locations populate the “where” dimension of EPCIS events. This  
 968 includes the  
`readPoint` and `businessLocation` fields in all EPCIS event types.  
 969 A CBV-Compliant document SHALL use one of the four URI forms specified in this  
 970 section to  
 971 populate the above fields of EPCIS events, for every such field that is not null. A CBV-  
 972 Compatible document MAY use one of the four URI forms specified in this section, or  
 973 MAY  
 any other URI that meets the general requirements specified in [EPCIS1.1], Section  
 6.4, except  
 for those URIs which in this standard are forbidden or designated for a different  
 purpose.

974 Both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI  
 975 form as  
 specified in Section 8.4.1 unless there is a strong reason to do otherwise.

976

### 8.4.1 EPC URI for Location Identifiers

977 A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure  
 978 Identity

979 URI as specified in Section 8.1.1 to populate the `readPoint` and `businessLocation`  
 980 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.

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

984 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the  
985 other URI  
forms for EPCs defined in [TDS1.9]; see Section 8.1.1 for details.

986

#### **8.4.2 Private or Industry-wide URN for Location Identifiers**

987 A CBV-Compliant document or CBV-Compatible document MAY use a private or  
988 industry-  
989 wide URN as specified below to populate the readPointand businessLocationfields in  
all EPCIS event types. However, both CBV-Compliant and CBV-Compatible documents

990 SHOULD use the EPC URI form (Section 8.4.1) unless there is a strong reason to do  
 991 otherwise.

992 See Section 8.1 for general considerations regarding the use of Private or Industry-  
 wide URI  
 identifiers.

993 A Private or Industry-wide URI suitable for populating the readPointand  
 994 businessLocationfields in all EPCIS event types SHALL have the following form:

995 urn:*URNNamespace*:*\*\**:loc:*Locid*

996 where the components of this template are as follows:

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

997

998 Identifiers of this form must be assigned by the owner of the URN Namespace. The  
 999 owner of

1000 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.

1001 *Example (non-normative): An EPCIS document in XML format containing a usage*

1002 *sample may*

*be found in Section 10.2.*

1003

### 8.4.3 HTTP URLs for Location Identifiers

1004 A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL  
 1005 as

1006 specified below to populate the readPointand businessLocationfields in all EPCIS  
 1007 event types. However, both CBV-Compliant and CBV-Compatible documents

1008 SHOULD use

the EPC URI form (Section 8.4.1) unless there is a strong reason to do otherwise.

See

Section 8.1 for general considerations regarding the use of HTTP URL identifiers.

1009 An HTTP URL suitable for populating the readPointand businessLocationfields in all  
 1010 EPCIS event types SHALL have the following form:

1011 http://[*Subdomain*.]*Domain*:*\*\**/loc/*Objid*

1012 where the components of this template are as follows:

http://[*Subdomain*.]*Domain*:*\*\**/

As specified in Section 8.1.3.

loc/

The characters l, o, c, and / (slash).

*Locid*

An identifier for the location that matches the grammar rule segment-nzdefined 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.



1014 Identifiers of this form must be assigned by the owner of the Internet domain  
1015 *Domain*. The  
1016 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.  
1017 *Example (non-normative): An EPCIS document in XML format containing a usage*  
1018 *sample may*  
*be found in Section 10.2.*

1019

#### 8.4.4 Geographic Location URIs for Location Identifiers

1020 A CBV-Compliant document or CBV-Compatible document MAY use a geographic  
1021 location  
1022 URI as specified in [RFC5870] to populate the readPoint and businessLocation fields  
1023 in all EPCIS event types. Such identifiers may be used in situations where it is not  
1024 feasible to  
1025 assign a unique location identifier; for example, to indicate the location of a ship on the  
1026 open  
1027 ocean. Both CBV-Compliant and CBV-Compatible documents SHOULD use a location  
identifier as specified in Sections 8.4.1 through 8.4.3 (with preference given to the EPC  
URI  
form as specified in Section 8.4.1) unless a geographic location URI is the only feasible  
alternative.

1028 The syntax and meaning of geographic location URIs is specified in [RFC5870].

1029 *Explanation (non-normative): The simplest form of RFC5870-compliant geographic*  
1030 *location*

*URI looks like this:*

1031 *geo:22.300,-118.44*

1032 *This example denotes the geographic location with latitude 22.300 degrees (north) and*  
1033 *longitude*  
*118.44 degrees (west).*

1034 *Other forms of the geo URI allow for the inclusion of altitude, uncertainty radius, and*  
1035 *reference*

1036 *coordinate system. Please consult [RFC5870] for details of these and other*  
*considerations that*  
*apply to the use of the geographic location URI.*

1037

#### 8.5 Business Transactions

1038 Identifiers for business transactions populate the “why” dimension of EPCIS  
1039 events. This

includes the bizTransactionList field in all EPCIS event types.

1040 The EPCIS standard provides for a business transaction to be identified by a pair of  
1041 identifiers,

1042 the “business transaction identifier” (hereinafter “BTI”) that names a particular business  
1043 transaction, and an optional “business transaction type” (hereinafter “BTT”) that says  
1044 what kind

of business transaction the identifier denotes (purchase order, invoice, etc.). Section

7.3 of this standard provides standardized values for BTTs.

1045 URI forms for BTIs are specified below. A CBV-Compliant document SHALL use one of  
1046 the  
1047 four URI forms specified in this section to populate the BTI field (text content of the  
1048 bizTransaction element) of EPCIS events, for every such field that is not null. A CBV-  
1049 Compatible document MAY use one of the four URI forms specified in this section, or  
1050 MAY use  
any other URI that meets the general requirements specified in [EPCIS1.1], Section 6.4,  
except  
for those URIs which in this standard are forbidden or designated for a different purpose.  
1051 A bizTransaction element in an EPCIS event includes a BTI and an optional BTT in any  
1052 of  
the following three combinations:

- 1053 • If the goal is to communicate a business transaction identifier without indicating its  
1054 type, a  
BTI is included and the BTT omitted.
- 1055 • If the goal is to communicate a business transaction identifier and to indicate its  
1056 type, and  
1057 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.
- 1058 • If the goal is to communicate a business transaction identifier and to indicate its type,  
1059 and  
1060 furthermore the type is not one of the CBV standard types specified in Section 7.3,  
1061 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.)

1062

### 8.5.1 EPC URI for Business Transaction Identifiers

1063 A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure  
1064 Identity  
URI as specified in Section 8.1.1 as a business transaction identifier in all EPCIS  
event types.

1065 Both CBV-Compliant and CBV-Compatible documents SHOULD NOT use EPC  
1066 schemes other

1067 than GDTI EPCs (urn:epc:id:gdti:...) or GSRN EPCs (urn:epc:id:gsrc:...) for  
1068 business transaction identifiers, unless there is a strong reason to do so. GDTI EPCs  
1069 SHOULD  
1070 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.

1071 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the  
1072 other URI

forms for EPCs defined in [TDS1.9]; see Section 8.1.1 for details.

1073 *Explanation (non-normative): One of the intended uses of the Global Document Type*  
1074 *Identifier*

1075 *(GDTI) is to identify business transactions such as invoices, purchase orders, and so on.*

1076 *When a*

1077 *GDTI is used in this way, it is suitable for use as a business transaction identifier in*  
1078 *EPCIS.*

1079 *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 or digital objects. It is also for this reason that the*  
*form*

*in Section 8.5.2 is provided.*

1080

1081 *Example (non-normative): An EPCIS document in XML format containing a usage*  
1082 *sample may*

*be found in Section 10.1.*

1083 **8.5.2 GLN-based Identifier for Legacy System Business Transaction**  
1084 **Identifiers**

1085 A CBV-Compliant document or CBV-Compatible document MAY use a GLN-based  
1086 identifier

as specified below as a business transaction identifier in all EPCIS event types.

1087 A GLN-based URI suitable for use as a business transaction identifier in all EPCIS  
1088 event types

SHALL have the following form:

1089 urn:epcglobal:cbv:bt:*glr.transID*

1090 where the components of this template are as follows:

Template Component		Description
urn:epcglobal:cbv:bt:	The 21	characters u, r, n, ..., b, t, and : (colon).
<i>gln.</i>	A	13-digit Global Location Number (GLN) that identifies the business system within which <i>transIDs</i> defined, followed by a colon. This is typically a "party GLN" that identifies the organization responsible for the business transaction identifier, or a division of an organization that maintains a separate divisional business information system.
<i>transID</i>	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.

1091

1092 Identifiers of this form must be assigned by the owner of the GLN that is embedded in  
1093 the

1094 identifier. The owner of the GLN may delegate the authority to assign new identifiers  
to other

parties, provided that appropriate rules are employed to ensure global uniqueness.

1095 *Example (non-normative): An EPCIS document in XML format containing a usage  
1096 sample may*

*be found in Section 10.2.*

1097 **8.5.3 Private or Industry-wide URN for Business Transaction**  
1098 **Identifiers**

1099 A CBV-Compliant document or CBV-Compatible document MAY use a private or  
1100 industry-  
wide URN as specified below as a business transaction identifier in all EPCIS event  
types.

1101 A private or industry-wide URN suitable for use as a business transaction identifier in all  
1102 EPCIS

event types SHALL have the following form:

1103 urn:*URNNamespace*:\*\*:*bt:transID*

1104 where the components of this template are as follows:

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.

1105

1106 Identifiers of this form must be assigned by the owner of the URN Namespace. The  
1107 owner of

1108 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.

1109 *Example (non-normative): An EPCIS document in XML format containing a usage  
1110 sample may*

*be found in Section 10.2*

1111

#### **8.5.4 HTTP URLs for Business Transaction Identifiers**

1112 A CBV-Compliant document or CBV-Compatible document MAY use an HTTP  
1113 URL as  
specified below as a business transaction identifier in all EPCIS event types.

1114 An HTTP URL suitable for use as a business transaction identifier in all EPCIS  
 1115 event types  
 SHALL have the following form:

1116 `http://[Subdomain.]Domain/**/bt/transID`

1117 where the components of this template are as follows:

Template Component	Description
<code>http://[Subdomain.]Domain/**/</code>	As specified in Section 8.1.3.
<code>bt/</code>	The characters b, t, and / (slash).
<code>transID</code>	An identifier for the business transaction that matches the grammar rule segment-nzdefined 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.

1118  
 1119 Identifiers of this form must be assigned by the owner of the Internet domain  
 1120 *Domain*. The  
 1121 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.  
 1122 *Example (non-normative): An EPCIS document in XML format containing a usage*  
 1123 *sample may*  
*be found in Section 10.2.*

1124  
**8.6 Source/Destination Identifiers**

1125 Identifiers for sources and destinations populate the sourceand destinationelements  
 1126 (respectively) in the “why” dimension of EPCIS events.  
 1127 A CBV-Compliant document SHALL use one of the three URI forms specified in this  
 1128 section to  
 1129 populate the above fields of EPCIS events. A CBV-Compatible document MAY use one  
 1130 of the  
 1131 three URI forms specified in this section, or MAY use any other URI that meets the  
 general  
 requirements specified in [EPCIS1.1], Section 6.4, except for those URIs which in this  
 standard  
 are forbidden or designated for a different purpose.  
 1132 Both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI  
 1133 form as  
 specified in Section 8.6.1 unless there is a strong reason to do otherwise.

1134  
**8.6.1 EPC URI for Source/Destination Identifiers**

1135 A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure  
 1136 Identity  
 1137 URI as specified in Section 8.1.1 to populate the sourceand destinationelements in all  
 1138 EPCIS event types. Both CBV-Compliant and CBV-Compatible documents SHOULD  
 use this

form unless there is a strong reason to do otherwise.

- 1139 Both CBV-Compliant and CBV-Compatible documents SHOULD NOT use EPC  
1140 schemes other  
1141 than SGLN EPCs (urn:epc:id:sgln:...) for source and destination identifiers, unless there  
is a strong reason to do so.  
1142 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the  
1143 other URI  
forms for EPCs defined in [TDS1.9]; see Section 8.1.1 for details.

1144

**8.6.2 Private or Industry-wide URN for Source/Destination Identifiers**

1145 A CBV-Compliant document or CBV-Compatible document MAY use a private or  
 1146 industry-  
 1147 wide URN as specified below to populate the sourceand destinationfields in all EPCIS  
 1148 event types. However, both CBV-Compliant and CBV-Compatible documents  
 1149 SHOULD use  
 1150 the EPC URI form (Section 8.6.1) 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.

1151 A Private or Industry-wide URI suitable for populating the sourceand destinationfields  
 1152 in all EPCIS event types SHALL have the following form:

1153 *urn:URNNamespace:\*\*.sd:Locid*

1154 where the components of this template are as follows:

<i>urn:URNNamespace:**:</i>	As specified in Section 8.1.2.
<i>sd:</i>	The characters s, d, and : (colon).
<i>Locid</i>	An identifier for the location that complies with the requirements of [RFC2141] and any syntax rules defined for the registered URN namespace <i>URNNamespace</i> , and which does not contain a colon character. This identifier must be unique relative to all other identifiers that begin with the same prefix.

1155

1156 Identifiers of this form must be assigned by the owner of the URN Namespace. The  
 1157 owner of  
 1158 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.

1159

**8.6.3 HTTP URLs for Source/Destination Identifiers**

1160 A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL as  
 1161 specified below to populate the sourceand destinationfields in all EPCIS event types.  
 1162 However, both CBV-Compliant and CBV-Compatible documents SHOULD use the  
 1163 EPC URI  
 1164 form (Section 8.6.1) unless there is a strong reason to do otherwise. See Section 8.1  
 for general  
 considerations regarding the use of HTTP URL identifiers.

1165 An HTTP URL suitable for populating the sourceand destinationfields in all EPCIS  
 1166 event types SHALL have the following form:

1167 *http://[Subdomain.]Domain\*\*/sd/SourceOrDestId*

1168 where the components of this template are as follows:

<i>http://[Subdomain.]Domain**/</i>	As specified in Section 8.1.3.
<i>sd/</i>	The characters s, d, and / (slash).



Template Component	Description
<i>SourceOrDestId</i>	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.

1169

1170 Identifiers of this form must be assigned by the owner of the Internet domain  
 1171 *Domain*. The  
 1172 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.

1173

### 8.7 Transformation Identifiers

1174 Identifiers for transformations populate the transformationID field of EPCIS  
 1175 TransformationEvents.  
 1176 URI forms for transformation identifiers are specified below. A CBV-Compliant  
 1177 document  
 1178 SHALL use one of the four URI forms specified in this section to populate the  
 1179 transformationID field of EPCIS TransformationEvents, for every such field that is  
 1180 not null. A CBV-Compatible document MAY use one of the four URI forms specified in  
 1181 this  
 1182 section, or MAY use any other URI that meets the general requirements specified in [EPCIS1.1], Section 6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.

1183

#### 8.7.1 EPC URI for Transformation Identifiers

1184 A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure  
 1185 Identity  
 1186 URI as specified in Section 8.1.1 to populate the transformationID field of EPCIS  
 TransformationEvents.  
 1187 Both CBV-Compliant and CBV-Compatible documents SHOULD NOT use EPC  
 1188 schemes other  
 1189 than GDTI EPCs (urn:epc:id:gdti:...) for transformation identifiers unless there is a  
 1190 strong reason to do so. GDTI EPCs SHOULD only be used as transformation identifiers  
 1191 when  
 they have been assigned to denote a transformation, rather than a physical document not connected with any transformation.  
 1192 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the  
 1193 other URI forms for EPCs defined in [TDS1.9]; see Section 8.1.1 for details.

1194 *Explanation (non-normative): One of the intended uses of the Global Document Type*  
1195 *Identifier*  
1196 *(GDTI) is to identify business transactions such as production orders which may be in*  
1197 *one-to-*  
1198 *one correspondence with transformations. When a GDTI is used in this way, it is*  
1199 *suitable for*  
1200 *use as a transformation identifier in EPCIS. However, many business information*  
*systems use*  
*other types of identifiers for transformations, and so the use of GDTI is not as strongly*  
*recommended as SGLNs are for locations or other types of EPCs are for physical or*  
*digital*  
*objects. It is also for this reason that the form in Section 8.7.2 is provided.*

1201 **8.7.2 GLN-based Identifier for Legacy System Transformation**  
 1202 **Identifiers**

1203 A CBV-Compliant document or CBV-Compatible document MAY use a GLN-based  
 1204 identifier  
 1205 as specified below 8.1.1 to populate the transformationIDfield of EPCIS  
 TransformationEvents.

1206 A GLN-based URI SHALL have the following form:

1207 urn:epcglobal:cbv:xform:*gln.xformID*

1208 where the components of this template are as follows:

Template Component	Description
urn:epcglobal:cbv:xform:	The 24 characters u, r, n, ..., r, m, and : (colon).
<i>gln.</i>	A 13-digit Global Location Number (GLN) that identifies the business system within which <i>xformIDs</i> defined, followed by a colon. This is typically a "party GLN" that identifies the organization responsible for the transformation identifier, or a division of an organization that maintains a separate divisional business information system.
<i>xformID</i>	An identifier for the transformation 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.

1209

1210 Identifiers of this form must be assigned by the owner of the GLN that is embedded in  
 1211 the  
 1212 identifier. The owner of the GLN may delegate the authority to assign new identifiers  
 to other  
 parties, provided that appropriate rules are employed to ensure global uniqueness.

1213

**8.7.3 Private or Industry-wide URN for Transformation Identifiers**

1214 A CBV-Compliant document or CBV-Compatible document MAY use a private or  
 1215 industry-  
 1216 wide URN as specified below to populate the transformationIDfield of EPCIS  
 TransformationEvents.

1217 A private or industry-wide URN SHALL have the following form:

1218 urn:*URNNamespace*:*\*\**:xform:*transID*

1219 where the components of this template are as follows:

urn: <i>URNNamespace</i> : <i>**</i> :	As specified in Section 8.1.2.
xform:	The characters x, f, o, r, m, and : (colon).
<i>xformID</i>	An identifier for the transformation that complies with the requirements of [RFC2141] and any syntax rules defined for the registered URN namespace <i>URNNamespace</i> , and which does not contain a colon character. This identifier must be unique relative to all other identifiers that begin with the same prefix.

1220

1221 Identifiers of this form must be assigned by the owner of the URN Namespace. The  
1222 owner of  
1223 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.

1224

### 8.7.4 HTTP URLs for Transformation Identifiers

1225 A CBV-Compliant document or CBV-Compatible document MAY use an HTTP  
 1226 URL as  
 1227 specified below to populate the transformationIDfield of EPCIS  
 TransformationEvents.

1228 An HTTP URL SHALL have the following form:

1229 `http://[Subdomain.]Domain/**/xform/transID`

1230 where the components of this template are as follows:

<code>http://[Subdomain.]Domain/**/</code>	As specified in Section 8.1.3.
<code>xform/</code>	The characters x, f, o, r, m, and / (slash).
<code>xformID</code>	An identifier for the transformation that matches the grammar rule segment-nz defined in [RFC3986], Section 3.3 (among other things, this means xformID may not contain a slash character), and which is unique relative to all other identifiers that begin with the same prefix.

1231

1232 Identifiers of this form must be assigned by the owner of the Internet domain

1233 *Domain*. The

1234 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.

1235 *Example (non-normative): An EPCIS document in XML format containing a usage*

1236 *sample may*

*be found in Section 10.2.*

1237

## 9 Location Master Data

1238 In addition to being able to uniquely identify locations, it will often be useful to exchange  
 1239 information about those location identifiers. The Core Business Vocabulary specifies

1240 master

1241 data that may be used to describe a location identifier. CBV master data for a location

1242 identifier

1243 consists of five data values (“master data attributes”) associated with that location

1244 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.

1245 Different location identifiers may denote locations at different levels of granularity. The

1246 master

1247 data attributes defined in the CBV are designed to be used for locations at two different levels of

granularity:

- 1248 • *Site* A physical location where a structure or group of structures (and / or  
1249 areas) is.  
Examples of a Site include a distribution center, a retail store, a hospital,  
etc.
- 1250 • *Sub-site* A specific physical location contained within a site. Examples of a Sub-site  
1251 include a back room within a retail store, the sales floor of a retail store, a storage  
1252 area within  
a warehouse, and so on.
- 1253 A location at any level of granularity may be described by an appropriate combination of  
1254 master  
data attributes defined in the CBV. The master data attributes are:

- 1255 • *Site Location* A master data attribute of a location that identifies the site in which  
 1256 this  
 1257 location is contained. For a Sub-site location, this is the identifier of the parent  
 1258 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.
- 1259 When the identifier for the location to which this master data attribute applies is an  
 1260 SGLN  
 1261 EPC, the Site Location master data attribute is always the 13-digit GLN implied by the  
 the  
 company prefix and location reference components of that SGLN.
- 1262 • *Sub-Site Type* A master data attribute of a sub-site location that describes the  
 1263 primary  
 1264 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  
 1265 example, code  
 1266 201 indicates that the sub-site type is a “back room” as defined below.
- 1267 • *Sub-Site Attributes* A master data attribute of a sub-site location that further  
 1268 qualifies the  
 1269 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  
 1270 below). For  
 1271 example, if the sub-site type is 203 (sales area), then sub-site attributes of “404,412”  
 1272 further  
 1273 specifies that this location identifier is a sales area for groceries (attribute 412) that  
 are frozen  
 (attribute 404).

1274 • *Sub-Site Detail* A master data attribute of a sub-site location that provides  
 1275 additional

proprietary information. This master data attribute is only applicable to a sub-site location.			
1276 For example, instead of sharing that a product is on <i>some</i> shelf in the back room of			
1277 store 123,			
1278 a party may wish to communicate the <i>exact</i> shelf in the backroom of store 123, e.g.			
1279 shelf			
#4567. The Sub-Site Detail master data attribute provides the identity of the specific			
shelf;			
e.g., 4567.			

1280

### 9.1 Location Master Data Constraints

1281 The following table specifies which master data attributes may or must be used  
 1282 depending on the  
 type of location.

		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

1283

1284

## 9.2 Location Master Data Names

1285 The EPCIS standard provides for access to master data elements through the use of  
 1286 name value  
 1287 pairs. In order to access the value of a particular master data element, one must know  
 1288 the

1289 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.	

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
---------------------------	-----------------

1290

1291 *Example (non-normative): An EPCIS document in XML format containing a usage*  
 1292 *sample may be found in Section 10.4.*

1293

## 9.3 Location Master Data Values

1294 Using the names above, one can access the master data associated with a particular  
 1295 location.

1296 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.

1297

### 9.3.1 Site Location

1298 The Site Location master data attribute provides a well-known identifier for the site within  
 1299 which

1300 the location is contained (or, in the case of a site-level location identifier, is the well-  
 1301 known

1302 identifier for the site itself). When the identifier for the location to which this master data  
 1303 attribute applies is an SGLN EPC, the value of the corresponding Site Location master

1304 data

1305 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.

1306 *Explanation (non-normative): If the location identifier is something other than an*  
1307 *SGLN EPC,*  
1308 *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.*

1309

### **9.3.2 Sub-Site Type**

1310 The value of the Sub-Site Type master data attribute for a location identifier, if present,  
1311 SHALL  
be one of the codes in the following table:

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

Sub-Site Type Master Data Attribute Values		
Code	Short Description	Definition
202	Storage Area	<p>An area where product is kept within a facility to fulfill future need.</p> <p>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</p> <p>For a retail store Secondary storage area associated with a store (may not be in the physical location)</p> <p>Potential to use this more broadly and add attributes to make distinction where necessary (recalled area, quarantined area, controlled substance, lay-away)</p>
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.
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	<p>An area where cargo may get transferred between carriers.</p> <p>Cargo terminals provide the interface between modes of transportation.</p>
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

1312

### 9.3.3 Sub-Site Attributes

1313 The value of the Sub-Site Attributes master data attribute for a location identifier

1314 SHALL be

zero or more of the codes in the following table.



1315 When the value of the Sub-Site Attributes master data attribute is transmitted as a  
 1316 single string  
 1317 (including when the Sub-Site Attributes master data attribute is transmitted using the  
 1318 EPCISMasterDataDocument form specified in [EPCIS1.1]), the string SHALL consist  
 1319 of  
 1320 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.

1321 *Explanation (non-normative): The restriction on ascending numerical sequence*  
 1322 *guarantees that*  
 1323 *there is only one way to compose the string for a given set of attributes. This simplifies*  
 1324 *application processing of this data; e.g., when comparing whether two location*  
*identifiers have*  
*an identical set of Sub-Site Attributes.*

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)
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)



Sub-Site Attribute Master Data Attribute Values		
Code	Short Description	Definition
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
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 manufacturer's 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 <b>DC</b> or <b>Manf Facility</b>  Please note – this supports the process where an EPC tag is encoded off the line and is later commissioned and associated with a particular product.
430	Loading 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 – 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).

1325

### 9.3.4 Sub-Site Detail

1326 The value of the Sub-Site Detail master data attribute for a location, if present, SHALL  
1327 be any  
string of up to 128 characters in length.

1328

## 10 Example EPCIS Documents (non-normative)

1329 The following sections provide examples of usage of the Core Business Vocabulary..

1330

### 10.1 CBV-Compliant Object Event using standard vocabulary

1331 The following shows a CBV-Compliant EPCIS document in XML format containing a  
1332 single  
1333 object event, where CBV-Compliant identifiers are used for business step and  
disposition, and  
EPCs are used for all user vocabulary values.

```

1334 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
1335 <epcis:EPCISDocument
1336     xmlns:epcis="urn:epcglobal:epcis:xsd:1"
1337     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
1338     creationDate="2005-07-11T11:30:47.0Z"
1339     schemaVersion="1">
1340 <EPCISBody>
1341     <EventList>
1342         <ObjectEvent>
1343             <eventTime>2007-07-26T21:41:19Z</eventTime>
1344             <recordTime>2007-07-26T21:41:19Z</recordTime>
1345             <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
1346             <epcList>
1347                 <!-- Section 8.2.1 – EPC Identifier -->
1348                 <epc>urn:epc:id:sgtin:0614141.181335.234</epc>
1349             </epcList>
1350             <action>ADD</action>
1351             <!-- Section 7.2.1 – BizStep -->
1352             <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
1353             <!-- Section 7.2.2 – Disposition -->
1354             <disposition>urn:epcglobal:cbv:disp:active</disposition>
1355             <!-- Section 8.4.1 – EPC URI for Locations -->
1356             <readPoint>
1357                 <id>urn:epc:id:sgln:0614141.00300.1</id>
1358             </readPoint>
1359             <!-- Section 8.4.1 – EPC URI for Locations -->
1360             <bizLocation>
1361                 <id>urn:epc:id:sgln:0614141.00300.0</id>
1362             </bizLocation>
1363             <bizTransactionList>
1364                 <!-- Section 8.5.1 – EPC URI -->
1365                 <!-- Section 7.3.2 – BTT -->
1366                 <bizTransaction
1367 type="urn:epcglobal:cbv:btt:po">urn:epc:id:gdti:0614141.06012.1234</bizTransa
1368 ction>
1369                 </bizTransactionList>
1370             </ObjectEvent>
1371         </EventList>
1372     </EPCISBody>
1373 </epcis:EPCISDocument>

```

## 1374 10.2 CBV-Compliant Object Event using HTTP URLs and Private or 1375 Industry-wide URNs

1376 The following shows a CBV-Compliant EPCIS document in XML format containing a  
1377 single  
1378 object event, illustrating the use of HTTP URLs and Private or Industry-wide URNs  
for user  
vocabulary values.

```
1379 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
1380 <epcis:EPCISDocument
1381     xmlns:epcis="urn:epcglobal:epcis:xsd:1"
1382     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
1383     creationDate="2005-07-11T11:30:47.0Z"
1384     schemaVersion="1">
1385 <EPCISBody>
1386 <EventList>
1387 <ObjectEvent>
1388 <eventTime>2007-07-26T21:41:19Z</eventTime>
1389 <recordTime>2007-07-26T21:41:19Z</recordTime>
1390 <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
1391 <epcList>
1392 <!-- Section 8.2.2 -->
1393 <epc>urn:example:epcis:id:obj:Q12345.67890.001</epc>
1394 <!-- Section 8.2.3 -->
1395 <epc>http://epcis.example.com/user/vocab/obj/12345.67890</epc>
1396 </epcList>
1397 <action>ADD</action>
1398 <!-- Section 7.1.2 – BizStep -->
1399 <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
1400 <!-- Section 7.2.2– Disposition -->
1401 <disposition>urn:epcglobal:cbv:disp:active</disposition>
1402
1403 <!-- Section 8.3.2 Location identifier -->
1404 <readPoint>
1405 <id>urn:example:epcis:id:loc:warehouse23</id>
1406 </readPoint>
1407 <!-- Section 8.3.3 Location identifier -->
1408 <bizLocation>
1409 <id>http://epcis.example.com/user/vocabularies/loc/abc.12345</id>
1410 </bizLocation>
1411 <bizTransactionList>
1412 <!-- Section 8.4.4 -->
1413 <bizTransaction
1414 type="urn:epcglobal:cbv:btt:po">http://transaction.example.com/production/orde
1415 rs/bt/po12345</bizTransaction>
1416 <!-- Section 8.4.3 -->
1417 <bizTransaction
1418 type="urn:epcglobal:cbv:btt:inv">urn:example:epcis:bt:inv:12345</bizTransacti
1419 on>
1420 <!-- Section 8.4.2 – Legacy System BT Identifier -->
1421 <bizTransaction
1422 type="urn:epcglobal:cbv:btt:desadv">urn:epcglobal:cbv:bt:0614141000029:asn123
1423 45</bizTransaction>
1424 </bizTransactionList>
1425 </ObjectEvent>
1426 </EventList>
1427 </EPCISBody>
```



1428  
 </epcis:EPCISDocument>

### 1429 10.3 CBV-Compatible Event

1430 The following shows a CBV-Compatible EPCIS document in XML format containing a  
 1431 single  
 1432 object event. CBV-Compliant EPC identifiers are used for physical objects and  
 1433 locations, but  
 because non-standard identifiers are used for business step and disposition the  
 document is CBV-  
 Compatible and not CBV-Compliant.

```

1434 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
1435 <epcis:EPCISDocument
1436     xmlns:epcis="urn:epcglobal:epcis:xsd:1"
1437     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
1438     creationDate="2005-07-11T11:30:47.0Z"
1439     schemaVersion="1">
1440 <EPCISBody>
1441   <EventList>
1442     <ObjectEvent>
1443       <eventTime>2007-07-26T21:41:19Z</eventTime>
1444       <recordTime>2007-07-26T21:41:19Z</recordTime>
1445       <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>
1446       <epcList>
1447         <!-- Section 8.2.1 – EPC Identifier -->
1448         <epc>urn:epc:id:sgtin:0614141.181335.234</epc>
1449       </epcList>
1450       <action>ADD</action>
1451       <bizStep>urn:example:uservocab:bizstep:quarantined</bizStep>
1452       <disposition>http://epcis.example.com/user/vocab/disp/contaminated</dis
1453 position>
1454       <!-- Section 8.3.1 – Locations -->
1455       <readPoint>
1456         <id>urn:epc:id:sgln:0614141.00300.1</id>
1457       </readPoint>
1458       <!-- Section 8.3.1 – Locations -->
1459       <bizLocation>
1460         <id>urn:epc:id:sgln:0614141.00300.0</id>
1461       </bizLocation>
1462     </ObjectEvent>
1463   </EventList>
1464 </EPCISBody>
1465 </epcis:EPCISDocument>
1466
  
```

### 1467 10.4 Location Master Data

1468 The following shows an EPCIS Master Data document illustrating the use of location  
 1469 master data  
 attributes defined in Section 8.6.

```
1470 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
1471 <epcismd:EPCISMasterDataDocument
1472     xmlns:epcismd="urn:epcglobal:epcis-masterdata:xsd:1"
1473     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
1474     schemaVersion="1"
1475     creationDate="2005-07-11T11:30:47.0Z">
1476 <EPCISBody>
1477     <VocabularyList>
1478         <Vocabulary type="urn:epcglobal:epcis:vtype:ReadPoint">
```



```
1479     <VocabularyElementList>
1480         <!-- Section 9.2 - Location Master Data Names -->
1481         <VocabularyElement id="urn:epc:id:sgln:0614141.00300.0">
1482             <attribute
1483 id="urn:epcglobal:cbv:mda:site">0614141003006</attribute>
1484         </VocabularyElement>
1485
1486         <!-- Section 9.2 - Location Master Data Names -->
1487         <VocabularyElement id="urn:epc:id:sgln:0614141.00300.1">
1488             <attribute
1489 id="urn:epcglobal:cbv:mda:site">0614141003006</attribute>
1490             <!-- Section 9.3.2 SST -->
1491             <attribute id="urn:epcglobal:cbv:mda:sst">208</attribute>
1492             <!-- Section 9.3.3 SSA -->
1493             <attribute id="urn:epcglobal:cbv:mda:ssa">422</attribute>
1494             <attribute id="urn:epcglobal:cbv:mda:ssd">Line #1 at Manufacturing
1495 Plant 1</attribute>
1496         </VocabularyElement>
1497
1498         <!-- Section 9.2 - Location Master Data Names -->
1499         <VocabularyElement id="urn:epc:id:sgln:0614141.00300.2">
1500             <attribute
1501 id="urn:epcglobal:cbv:mda:site">0614141003006</attribute>
1502             <!-- Section 9.3.2 SST -->
1503             <attribute id="urn:epcglobal:cbv:mda:sst">251</attribute>
1504             <!-- Section 9.3.3 SSA -->
1505             <attribute id="urn:epcglobal:cbv:mda:ssa">416,417</attribute>
1506         </VocabularyElement>
1507     </VocabularyElementList>
1508 </Vocabulary>
1509 </VocabularyList>
1510 </EPCISBody>
1511 </epcismd:EPCISMasterDataDocument>
```

1512

## 11 References

- 1513 [EPCIS1.1] GS1, "EPC Information Services (EPCIS) Version 1.1 Standard," GS1  
1514 Standard,  
May 2014, [http://www.gs1.org/gsm/kc/epcglobal/epcis/epcis\\_1\\_1-standard-20140520.pdf](http://www.gs1.org/gsm/kc/epcglobal/epcis/epcis_1_1-standard-20140520.pdf).
- 1515 [ISODir2] ISO, "Rules for the structure and drafting of International Standards  
1516 (ISO/IEC Directives, Part 2, 2001, 4th edition)," July 2002.
- 1517 [RFC2141] R. Moats, "URN Syntax," RFC 2141, May 1997, <http://www.ietf.org/rfc/rfc2141>.
- 1518 [RFC3986] T. Berners-Lee, R. Fielding, L. Masinter, "Uniform Resource Identifier  
1519 (URI):  
Generic Syntax," RFC3986, January 2005, <http://www.ietf.org/rfc/rfc3986>.
- 1520 [RFC5870] A. Mayrhofer, C. Spanring, "A Uniform Resource Identifier for  
1521 Geographic  
Locations ('geo' URI)," RFC 5870, June 2010, <http://www.ietf.org/rfc/rfc5870>.
- 1522 [TDS1.9] GS1, "GS1 EPCglobal Tag Data Standards Version 1.9," GS1 Standard, June 2014.



1523

## 12 Contributors

1524 Disclaimer

1525 Whilst every effort has been made to ensure that this document and the information  
 1526 contained  
 1527 herein are correct, GS1 and any other party involved in the creation of the document  
 1528 hereby state  
 1529 that the document is provided on an “as is” basis without warranty, either expressed or  
 1530 implied,  
 including but not limited to any warranty that the use of the information herein with not  
 infringe  
 any rights, of accuracy or fitness for purpose, and hereby disclaim any liability, direct or  
 indirect,  
 for damages or loss relating to the use of the document.

1531 Below is a list of more active participants and contributors in the development of CBV

1532 1.1. This  
 1533 list does not acknowledge those who only monitored the process or those who chose  
 1534 not to have  
 1535 their name listed here. The participants listed below generated emails, attended face-  
 to-face  
 meetings and conference calls that were associated with the development of this  
 Standard.

Andrew	Kennedy	FoodLogiQ	Working group co-chair
Michele	Southall	GS1 US	Working group co-chair
Gena	Morgan	GS1	Working group facilitator
Ken	Traub	Ken Traub Consulting LLC	Editor
Craig	Alan Repec	GS1 Global Office	
Jean-Pierre	Allard	Optel Vision	
Romain	Arnaud	Courbon	
Shirley	Arsenault	GS1 Global Office	
Koji	Asano	GS1 Japan Karla	
Biggs-Gregory	Oracle		
Havard	Bjastad	TraceTracker AS	
Stephan	Bourguignon	Daimler AG	
Bob	Bunsey	SPEDE	
Technologies			
Birgit	Burmeister	Daimler AG	
Jonas	Buskenfried	GS1 Sweden	
Robert	Celeste	GS1 US Chris	
Chandler	GS1 US Lucy	Deus	
Tracetracker			
Hussam	El-Leithy	GS1 US	
Heinz	Graf	GS1 Switzerland	
Anders	Grangard	GS1 Global	
Emmanuel	Hadzipetros	TraceLink	
Mark	Harrison	Auto-ID Labs	
Dave	Harty	Systech International	
Douglas	Hill	GS1 Denmark	

Robert	Hotaling	Supply Insight
John	Howells	HDMA
Tany	Hui	GS1 Hong Kong







Company
Oracle
rfXcel Corporation
Robert Bosch GmbH
SAP AG
Schweizerische Bundesbahnen SBB
Shantalla Inc
SPEDE Technologies
Supply Chain RFID
Consulting LLC
Supply Insight
Systech International
Teva
Pharmaceuticals
Europe BV
TraceLink
TraceTracker AS
Tyson UPS
Wipro Technologies
Zimmer, Inc.









# British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

## About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

## Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at [bsigroup.com/standards](http://bsigroup.com/standards) or contacting our Customer Services team or Knowledge Centre.

## Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at [bsigroup.com/shop](http://bsigroup.com/shop), where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

## Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to [bsigroup.com/subscriptions](http://bsigroup.com/subscriptions).

With British Standards Online (BSOL) you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a BSI Subscribing Member.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit [bsigroup.com/shop](http://bsigroup.com/shop).

With a Multi-User Network Licence (MUNL) you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email [bsmusales@bsigroup.com](mailto:bsmusales@bsigroup.com).

## Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

## Copyright

All the data, software and documentation set out in all British Standards and other BSI publications are the property of and copyrighted by BSI, or some person

or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use. Except as permitted under the Copyright, Designs

and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI. Details and advice can be obtained from the Copyright & Licensing Department.

## Useful Contacts:

### Customer Services

Tel: +44 845 086 9001

Email (orders): [orders@bsigroup.com](mailto:orders@bsigroup.com)

Email (enquiries): [cservices@bsigroup.com](mailto:cservices@bsigroup.com)

### Subscriptions

Tel: +44 845 086 9001

Email: [subscriptions@bsigroup.com](mailto:subscriptions@bsigroup.com)

### Knowledge Centre

Tel: +44 20 8996 7004

Email: [knowledgecentre@bsigroup.com](mailto:knowledgecentre@bsigroup.com)

### Copyright & Licensing

Tel: +44 20 8996 7070

Email: [copyright@bsigroup.com](mailto:copyright@bsigroup.com)

## BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK



...making excellence a habit.™