Core Business Vocabulary (CBV)

GS1 Standard

Version 1.1, May 2014

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2 Abstract

3 This GS1 Standard defines Version 1.1 of the Core Business Vocabulary (CBV). The goal of
4 this standard is to specify the structure of vocabularies and specific values for the vocabulary
5 elements to be utilized in conjunction with the GS1 Electronic Product Code Information
6 Services (EPCIS) standard for data sharing both within and across enterprises. The aim is to
7 standardize these elements across users of EPCIS to improve the understanding of data contained
8 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 event data
12 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 publication. Other
17 documents may supersede this document. The latest status of this document series is
18 maintained at GS1. See `www.gs1.org/gsmp` for more information.

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

21 Comments on this document should be sent to `gsmp@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, EPCIS
27 transformation identifier, and object classes are added.

28 • New business step, disposition, and business transaction type values are added. The
29 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_recalled` defined in CBV 1.0 are deprecated in favor of new

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

35 • RFC5870-compliant geocoordinate URIs are now permitted as location identifiers.

36 • The introductory material is revised to align with the GS1 System Architecture.

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1 Introduction – Core Business Vocabulary

147

148 This GS1 Standard defines the Core Business Vocabulary (CBV). The goal of this standard is to
149 specify various vocabulary elements and their values for use in conjunction with the EPCIS
150 standard [EPCIS1.1], which defines mechanisms to exchange information both within and across
151 organization boundaries. The vocabulary identifiers and definitions in this standard will ensure
152 that all parties who exchange EPCIS data using the Core Business Vocabulary will have a
153 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 particular,
155 this standard is designed to define vocabularies that are *core* to the EPCIS abstract data model
156 and are applicable to a broad set of business scenarios common to many industries that have a
157 desire or requirement to share data. This standard intends to provide a useful set of values and
158 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 elements
160 herein with additional vocabulary elements defined for a particular industry or a set of users or a
161 single user. Additional values for the standard vocabulary types defined in this standard may be
162 included in follow-on versions of this standard.

163 This standard includes identifier syntax and specific vocabulary element values with their
164 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 Locations
176 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 defined in this
182 standard.

2   Relationship to the GS1 System Architecture

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

3   Relationship to EPCIS

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

3.1 EPCIS Event Structure

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

- *The "what" dimension*   The *what* dimension for most event types contains one or more unique identifiers for physical or digital objects or classes of physical or digital objects. Identifiers for physical or digital objects in the Core Business Vocabulary are specified in Section 8.2 (instance-level) and Section 8.3 (class-level). In the case of an EPCIS TransformationEvent, an optional TransformationID may be used to link together multiple events that describe the same transformation. The Core Business Vocabulary includes TransformationIDs in Section 8.7.

- *The "when" dimension*   The moment in time at which an EPCIS event occurred. Event time is fully specified in the EPCIS standard.

- *The "where" dimension*   The "where" dimension consists of two identifiers that describe different aspects of where an event occurred:

  - *Read Point*   The location where the EPCIS event took place. In the case of an EPCIS event arising from reading a bar code or RFID tag, the Read Point is often the location where the bar code or RFID tag was read.   Identifiers for read points in the Core Business Vocabulary are specified in Section 8.3.

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

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

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

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 "why" the
223   event occurred:

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

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

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

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

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

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

243   • *Business Transaction Identifier*   Denotes a specific business transaction document of
244   the type indicated by the Business Transaction Type. *Example: <The identifier that*
245   *denotes Example Corp purchase order #123456>* Identifiers for business
246   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 sources
248   and/or destinations that describe the endpoints of a business transfer of which the event is
249   a part. Each source or destination reference consists of two identifiers:

250   • *Source or Destination Type*   Denotes a particular kind of source or destination.
251   *Example: the identifier that denotes "owning party".*   Identifiers for source and
252   destination types in the Core Business Vocabulary are specified in Section 7.4.

253   • *Source or Destination Identifier*   Denotes a source or destination of the type
254   indicated by the Business Transaction Type. *Example: <The identifier that denotes*
255   *Example Corp as an owning party>* Identifiers for sources and destinations in the
256   Core Business Vocabulary are specified in Section 8.6.

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, and digital
260 entities that exist in the real world.

261 Examples of vocabularies defined in the EPCIS standard are business steps, dispositions,
262 location identifiers, physical or digital object identifiers, business transaction type names, and
263 business transaction identifiers. In each case, a vocabulary represents a finite (though open-
264 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 the way
266 they are defined and extended over time:

267 • *Standard Vocabulary*   A Standard Vocabulary is a set of Vocabulary Elements whose
268   definition and meaning must be agreed to in advance by trading partners who will exchange
269   events using the vocabulary.

270 • *User Vocabulary*   A User Vocabulary is a set of Vocabulary Elements whose definition and
271   meaning are under the control of a single organization.

272 These concepts are explained in more detail below.

3.2.1 Standard Vocabulary

274 A Standard Vocabulary is a set of Vocabulary Elements whose definition and meaning must be
275 agreed to in advance by trading partners who will exchange events using the vocabulary. For
276 example, the EPCIS standard defines a vocabulary called "business step," whose elements are
277 identifiers denoting such things as "shipping," "receiving," and so on. One trading partner may
278 generate an event having a business step of "shipping," and another partner receiving that event
279 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 users, such as
281 GS1, industry consortia outside GS1, private trading partner groups, and so on. The master data
282 associated with Standard Vocabulary elements, if any master data is defined at all, are defined by
283 those same organizations, and tend to be distributed to users as part of a standard or by some
284 similar means. New vocabulary elements within a given Standard Vocabulary tend to be
285 introduced through a very deliberate and occasional process, such as the ratification of a new
286 version of a standard or through a vote of an industry group.

287 The Standard Vocabularies specified in the Core Business Vocabulary standard are: *business*
288 *steps* (Section 7.1), *disposition*s (Section 7.2), *business transaction types* (Section 7.3), and
289 *source and destination types* (Section 7.4). The elements and definitions are agreed to by parties
290 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 meaning is
294 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 setting, and
297 would probably only be used within an organization's four walls. On the other hand, an industry
298 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 usefully used
300 within that trading group.

3.2.2 User Vocabulary

302 A User Vocabulary is a set of Vocabulary Elements whose definition and meaning are under the
303 control of a single organization. For example, the EPCIS standard defines a vocabulary called
304 "business location," whose elements are identifiers denoting such things as "Acme Corp.
305 Distribution Center #3." The location identifier and any associated master data is assigned by
306 the user. Acme Corp may generate an event whose business location field contains the identifier
307 that denotes "Acme Corp. Distribution Center #3," and another partner receiving that event
308 through a query can interpret it either because the partner recognizes the identifier as being
309 identical to the identifier received in other events that took place in the same location, or because
310 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 0614141, and the
314 meaning of the identifier (that is, what location it denotes) is determined exclusively by that end
315 user. Another End User can understand the meaning of this identifier by consulting associated
316 master data.

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

323 While the Core Business Vocabulary standard does not (and as the discussion above makes clear,
324 cannot) specify particular user vocabulary elements, the Core Business Vocabulary does provide
325 syntax templates that are recommended for use by End Users in constructing their own user
326 vocabulary elements. See Section 8.1. The user vocabularies for which templates are specified
327 in this standard are: *physical or digital objects* (Sections 8.2 and 8.3), *locations* which include
328 both read points and business locations (Section 8.4), *business transaction identifiers*
329 (Section 8.5), *source/destination identifiers* (Section 8.6), and *transformation identifiers*
330 (Section 8.7).

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 ISO/IEC
334 Directives, Part 2, 2001, 4th edition [ISODir2]. When used in this way, these terms will always
335 be shown in ALL CAPS; when these words appear in ordinary typeface they are intended to have
336 their ordinary English meaning.

337 All sections of this document, with the exception of Sections 1, 2, and 3, are normative, except
338 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 identifiers, as
342 well as for the text of XML documents.

343 ➢ Placeholders for changes that need to be made to this document prior to its reaching the final
344 stage of approved GS1 standard are prefixed by a rightward-facing arrowhead, as this
345 paragraph is.

5 Compliance and Compatibility

347 The GS1 Core Business Vocabulary is designed to facilitate interoperability in EPCIS data
348 exchange by providing standard values for vocabulary elements to be included in EPCIS data.
349 The standard recognizes that the greatest interoperability is achieved when all data conforms to
350 the standard, and also recognizes that individual End Users or groups of trading partners may
351 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 specified in the
354 Core Business Vocabulary standard in the standard fields of EPCIS events.

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

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

361 The formal definition of these terms is specified below.

5.1 CBV Compliant

363 A "CBV-Compliant Document" is a document that conforms to the schema and other constraints
364 specified in [EPCIS1.1], and which furthermore conforms to all the normative language in this
365 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 input,
368 the application SHALL accept any document that is a CBV-Compliant Document according
369 to this standard, and furthermore in processing that input SHALL interpret each CBV
370 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 output,
372 the application SHALL only produce a document that is a CBV-Compliant Document
373 according to this standard, and furthermore in generating that output SHALL only use CBV
374 identifiers to denote their meaning as specified herein.

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

377 • A CBV-Compliant Document SHALL conform to the schema and other constraints specified
378 in [EPCIS1.1].

379 • A CBV-Compliant Document SHALL NOT use any URI beginning with
380 `urn:epcglobal:cbv:` except as specified in this standard.

381 • Each EPCIS event in a CBV-Compliant Document SHALL include a `bizStep` field, and
382 the value of the `bizStep` field SHALL be a URI consisting of the prefix
383 `urn:epcglobal:cbv:bizstep:` followed by the string specified in the first column of
384 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` or
396 `destination` elements. The value of the `type` attribute of each such element SHALL be
397 a URI consisting of the prefix `urn:epcglobal:cbv:sdt:` followed by the string
398 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-Compliant
400 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 events
403 (that is, the `epcList`, `parentID`, `childEPCs`, `inputEPCList`, and
404 `outputEPCList` fields in EPCIS `ObjectEvents`, `AggregationEvents`,
405 `TransacationEvents`, and `TransformationEvents`), for every such field that is
406 not null. A CBV-Compliant document SHOULD use the EPC URI form as specified in
407 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 events (that
412 is, the `epcClass` fields in all EPCIS event types), for every such field that is not null. A
413 CBV-Compliant document SHOULD use the EPC URI form as specified in Section 8.3.1
414 unless there is a strong reason to do otherwise.

415 • A CBV-Compliant document SHALL use one of the four URI forms specified in Section 8.4
416   to populate the "where" dimension of EPCIS events (that is, the `readPoint` and
417   `businessLocation` fields in all EPCIS event types), for every such field that is not null.
418   A CBV-Compliant document SHOULD use the EPC URI form as specified in Section 8.4.1
419   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 document
421   SHOULD NOT use EPC schemes other than SGLN (`urn:epc:id:sgln:…`), unless there
422   is a strong reason to do so.

423 • A CBV-Compliant document SHALL use one of the four URI forms specified in Section 8.5
424   to populate the business transaction identifier field (that is, the text content of the
425   `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 Documents
427   SHOULD NOT use EPC schemes other than GDTI EPCs (`urn:epc:id:gdti:…`) or
428   GSRN EPCs (`urn:epc:id:gsrn:…`), unless there is a strong reason to do so. GDTI
429   EPCs SHOULD only be used as business transaction identifiers when they have been
430   assigned to denote a business transaction, rather than a physical document not connected with
431   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 content of a
434   `source` or `destination` element), for every such field that is not null. A CBV-
435   Compliant document SHOULD use the EPC URI form as specified in Section 8.6.1 unless
436   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 document
438   SHOULD NOT use EPC schemes other than SGLN (`urn:epc:id:sgln:…`), unless there
439   is a strong reason to do so.

440 • A CBV-Compliant document SHALL use one of the four URI forms specified in Section 8.7
441   to populate the transaction identifier field (that is, the text content of the
442   `transformationID` element) of EPCIS `TransformationEvents`, for every such
443   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 transformation
447   identifiers when they have been assigned to denote a transformation, rather than a physical
448   document not connected with any transformation.

5.2 CBV Compatible

450 A "CBV-Compatible Document" is a document that conforms to the schema and other
451 constraints specified in [EPCIS1.1], and which furthermore conforms to all the normative
452 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 input,
455   the application SHALL accept any document that is a CBV-Compatible Document according
456   to this standard, and furthermore in processing that input SHALL interpret each CBV
457   identifier according to the meaning specified herein.

458   • If it operates in a mode where it claims to produce a CBV-Compatible Document as an
459   output, the application SHALL only produce a document that is a CBV-Compatible
460   Document according to this standard, and furthermore in generating that output SHALL only
461   use CBV identifiers to denote their meaning as specified herein.

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

464   • A CBV-Compatible Document SHALL conform to the schema and other constraints
465   specified in [EPCIS1.1].

466   • A CBV-Compatible Document SHALL NOT use any URI beginning with
467   `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-Compatible
469   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 reason to do
472   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 reason to do
475   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 Document
484   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 been
487   assigned to denote a business transaction, rather than a physical document not connected with
488   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 Document
493   SHOULD NOT use EPC schemes other than GDTI EPCs (`urn:epc:id:gdti:…`) unless
494   there is a strong reason to do so. GDTI EPCs SHOULD only be used as transformation
495   identifiers when they have been assigned to denote a transformation, rather than a physical
496   document not connected with any transformation.

497 In general, every CBV-Compliant Document is also a CBV-Compatible Document, though not
498 every CBV-Compatible Document is a CBV-Compliant Document. A CBV-Compatible
499 Document may include an identifier that is compliant with [EPCIS1.1] but which is not
500 permitted for CBV-Compliant Documents, provided that it meets the requirements above. A
501 CBV-Compatible Document may also include an event in which the `bizStep` field is omitted,
502 whereas that field is always required for CBV-Compliant Documents.

6   Use of Uniform Resource Identifiers (URIs)

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

6.1 URI Prefix for Standard Vocabularies in the CBV

506 All URIs for standard vocabulary elements specified in the Core Business Vocabulary standard
507 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.

6.2 Limitation on Use of the URI Prefix

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

514 A CBV-Compliant or CBV-Compatible document SHALL NOT use any URI beginning with
515 `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 begin
517 with `urn:epcglobal:cbv:`, provided that the requirements specified elsewhere in this
518 standard are met. These SHALL be used to identify vocabulary elements not defined by the CBV
519 standard. URIs beginning with `urn:epcglobal:` SHALL NOT be used except as specified
520 herein or in another GS1 standard.

521 *Example (Non Normative): Suppose a user needs a new disposition value to stand for*
522 *"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 be*
525 *used. Instead a URI like the following could be used and considered CBV-Compatible. However,*
526 *it must be noted that this vocabulary would have limited meaning to supply chain participants*
527 *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 vocabularies:
531 business steps, dispositions, business transaction types, and source/destination types.

532 ## 7.1 Business Steps

533 This section specifies standard identifiers for the EPCIS `BusinessStepID` vocabulary. These
534 identifiers populate the `bizStep` field 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 string
539 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 `bizStep` field, and the
542 value of the `bizStep` field SHALL be a URI consisting of the prefix
543 `urn:epcglobal:cbv:bizstep:` followed by the string specified in the first column of
544 some row of the table below. The portion following the prefix SHALL be written exactly as
545 specified in the table below, in all lowercase letters (possibly including underscores, as
546 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 event is the*
549 *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 string in the*
562 *business step field. It is also not CBV-Compatible, because the value of the business step field is*
563 *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>
```

Additional samples may be found Section 10.1.

Each EPCIS event in a CBV-Compatible Document MAY include a `bizStep` field, and the value of the `bizStep` field MAY be a URI as specified above for a CBV-Compliant document, and MAY be any other URI that meets the general requirements specified in [EPCIS1.1], Section 6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.

Business Steps		
Value	Definition	Examples
accepting	Denotes a specific activity within a business process where an object changes possession and/or ownership.	• Retailer X unloads a pallet on to the receiving dock. The numbers of cases on the pallet are counted. The pallets are disaggregated from the shipping conveyance. The quantity is verified against the delivery document (Freight Bill or Bill of Lading), notating any over, short or damaged product at the time of delivery. Typically this process releases freight payment and completes the contractual agreement with the carrier of delivering the product/assets to a specified location. • A parcel carrier drops off five boxes at Distributor Y's DC. A person on the Receiving Dock signs that they accept the five boxes from the parcel carrier. • A wholesaler is assigned a lot of fish at a fish auction, verifies the quantity and acknowledges receipt. • A manufacturer's fork lift driver scans the IDs of components which have been removed from a consignment warehouse. In doing so, the components are added to the manufacturer's inventory
arriving	Denotes a specific activity within a business process where an object arrives at a location.	• Truckload of a shipment arrives into a yard. Shipment has not yet been received or accepted.
assembling	Denotes an activity within a business process whereby one or more objects are combined to create a new finished product. 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.	• Computer parts (hard drive, battery, RAM) assembled into a consumer ready computer • Healthcare kitting: a surgical kit including drug, syringe, and gauze are combined to create a new 'product': a *kit*

Business Steps		
Value	Definition	Examples
collecting	Denotes a specific activity within a business process where an object is picked up and collected for future disposal, recycling or re-used.	• An organization picks up disposed consumer electronics in an end of life state from various different organizations. After the goods are picked up, they typically are brought back and received into a Collection Center • Rented or leased pallets are picked up and brought to a collection center.
commissioning	Process of associating an 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. In the case of a class-level identifier, commissioning differs from creating_class_instance in that commissioning always indicates that this is the first use of the class-level identifier, whereas creating_class_instance does not specify whether the class-level identifier has been used before.	• On a packaging line, an encoded EPC is applied to a case and associated to the product. • An individual virtual document (e.g. digital coupon, digital voucher, etc.) is assigned an EPC • One hundred bottles of a particular batch of pharmaceutical product are produced, those being the first bottles of that batch to be produced. • 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.
consigning	Indicates the overall process of staging_outbound, loading, departing, and accepting. It may be used when more granular process step information is unknown or inaccessible. The use of consigning is mutually exclusive from the use of staging_outbound, loading, departing, and accepting. Note: This business step is similar to shipping, but includes a change of possession and/or ownership at the outbound side.	• A wholesaler comes aboard a fishing vessel, selects and buys boxes of fish, and brings them to his premises. • 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. • 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 business step consigning is used.
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).	• 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. • All objects of a specific sub-location (sales floor or a shelf on the sales floor, e.g.) are counted by a handheld reader.
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.	• 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. • A digital coupon or an empties refund voucher is redeemed at retail point-of-sale
departing	Denotes a specific activity within a business process where an object leaves a location on its way to a destination.	• Truckload of a shipment departs a yard, typically through a gate and begins transit to another location
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; however, the class-level identifier may still be used in subsequent events (referring to different instances that were not destroyed).	• Distributor or Retailer puts empty case in the incinerator or box crusher.
disassembling	Denotes a specific activity within a business process where an object is broken down into separate, uniquely identified component parts.	• Before feeding a consumer electronics end of life item (a computer) into recycling operation line, it is necessary to disassemble the parts for the purpose of being recycled or disposed of in an environmentally sound manner. • A surgical kit (e.g. 2- 50 count bottles of medication and 1 syringe gauze) is broken down into its separate component parts
encoding	Process of writing an 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.	• 3rd Party writes tags and returns spool of case tags to Manufacturer
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.	• Customer leaves the facility of Retailer X with their purchased items through a customer entrance/exit door.

Business Steps		
Value	Definition	Examples
holding	Denotes a specific activity within a business process where an object is segregated for further review.	• 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 • Distributor Y obtains a shipment of pharmaceutical product. Distributor Y finds that their supplier cannot provide a complete pedigree. Distributor Y moves the shipment to a quarantine area on their dock. • Shipper Z is told by Customs to move a container to a special area until Customs can inspect and clear the container.
inspecting	Process of reviewing objects to address potential physical or documentation defects.	• Manufacturer A pulls 10 bottles from every batch to ensure that the product and pill count in the bottles match expectations • Distributor Y checks all returned products to designate them either as saleable or as damaged • Regulator R pulls 3 bottles from a shelf to determine if the bottles have a correct pedigree • Customs Agent C uses a machine to scan the contents of a shipping container • Pallet pool operator Z checks if certain pallets comply with quality standards.
installing	Denotes a specific activity within a business process where an object is put into a composite object (not merely a container). In installing the composite object exists prior to this step, whereas in assembling the composite object is created during the step.	• Additional memory chips and a rechargeable battery are installed within a computer • A duplexing unit is installed on a laser printer • Additional safety equipment is installed within the cabin of an aircraft or vehicle (e.g. fire extinguishers)
killing	Process of terminating an RFID tag previously associated with an 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).	• Kill Command is issued to the tag to prevent any further reading of the tag or the information on the tag.
loading	Denotes a specific activity within a business process where an object is loaded into shipping conveyance.	• Manufacturer A loads pallets into a container. The pallets are aggregated to the container. • Distributor Y loads racks full of totes on to a truck
other	A business step not identified by any of the values listed in the core business vocabulary.	• "Other" may be used for terms that have yet to be added to the core business vocabulary from an industry or a user

Business Steps		
Value	Definition	Examples
packing	Denotes a specific activity within a business process that includes putting objects into a larger container – usually for shipping. Aggregation of one unit to another typically occurs at this point.	• 12 packs of soda are placed into a case • Loose potatoes are placed into a tote.
picking	Denotes a specific activity within a business process that includes the selecting of objects to fill an order.	• Distributor Y places three units into a tote to meet the requirements of a purchase order • Manufacturer A pulls three pallets from its racks to fulfill a purchase order
receiving	Denotes a specific activity within a business process that indicates that an object is being received at a location and is added to the receiver's inventory. The use of receiving is mutually exclusive from the use of arriving and accepting.	• Retailer X confirms that the count of cases on the pallet equals the expected count in a purchase order. Retailer X takes the cases into inventory. Typically, this process matches the product to the purchase order for payment to the supplier. • A shipment from a manufacturer factory site to manufacturer distribution center, is matched against the transaction record then added to local inventory.
removing	Denotes a specific activity within a business process where an object is taken out of a composite object.	• A defective airplane part is taken out of the engine
repackaging	Denotes a specific activity within a business process where an object's packaging configuration is changed.	• Distributor Y receives one box full of batteries and another box full of laptops without batteries. Distributor Y ships out new boxes containing one laptop and one battery.
repairing	Denotes a specific activity within a business process where a malfunctioning product is repaired (typically by a post-sales service), without replacing it by a new one.	• A computer is brought to a repair center to fix a problem • An airplane part is in maintenance center to diagnose an issue
replacing	Denotes a specific activity within a business process where an object is substituted or exchanged for another object.	• A defective airplane part is replaced by a new part.
reserving	Process in which a set of instance level identifiers, not yet commissioned, are provided for use by another party.	• Manufacturer provides set of case EPC numbers to a 3rd Party labeler
retail_selling	Denotes a specific activity within a business process at a point-of-sale for the purpose of transferring ownership to a customer in exchange for something of value (currency, credit, etc).	• Retailer X sells a screwdriver to a customer by checking it out through a point-of-sale system.

Business Steps		
Value	Definition	Examples

shipping	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.
	
	The use of `shipping` is mutually exclusive from the use of `staging_outbound`, `departing`, or `loading`.
		• 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)
		
		• At Distributor Y, the truck containing racks full of totes pulls away from the shipping dock or staging area.
		
		• Manufacturer A completes loading product into trailer and seals door. The trailer is ready for pickup. The generation of a Despatch Advice / ASN triggers a "shipping" event.
		
		• A 3PL picks and tags the product. The product is loaded into a trailer and signed over to a transportation carrier. The 3PL notifies the manufacturer who generates a "shipping" event. NOTE: This would be the case if there were NO departing step at a read point at the gate.
		
		• 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.

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.	• Container is being closed and will be subsequently loaded onto a vehicle in the yard. • Container is being closed and seal is applied, and will be subsequently loaded onto a vehicle in the yard • Product has been picked and is now in a staging lane waiting for loading into a container
stock_taking	Process of counting objects within a location following established rules and/or standards to serve as a basis for accounting purposes.	• All EPCs in a retail store are read by a handheld reader following a procedure accepted by the organization's accounting firm.
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.	• Retailer X places cans from a case on to a shelf on the sales floor • Dist X moves goods from a storage area to a picking area
storing	Denotes a specific activity within a business process where an object is moved into and out of storage within a location.	• Manufacturer A moves a pallet from the receiving area to a rack • Retailer X moves a case from the receiving dock to a shelf in the backroom

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 **deprecated** 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 TransformationEvent.	• Meat packer X cuts a whole cow into two sides of beef (1 to many) • Food processor Y combines water, vegetables, and meat to create a unit of soup (many to one) • Butcher Z combines meat from multiple carcasses, grinds them together, and creates individual packages of ground beef (many to many)
transporting	Process of moving an object from one location to another using a vehicle (e.g., a ship, a train, a lorry, an aircraft).	• Carrier X conveys 150 sea containers from Hong Kong seaport to Hamburg seaport with a container vessel. • A train with 20 goods wagons goes from one train station to another. • A lorry moves a swap trailer from a depot to a distribution center.
unloading	Denotes a specific activity within a business process where an object is unloaded from a shipping conveyance.	• Manufacturer A unloads pallets from a shipping conveyance. The pallets are disaggregated from the shipping conveyance. • Distributor Y unloads racks full of totes from a truck
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.	• 12 packs of soda are removed from a case • Loose potatoes are taken off from a tote.

581

7.2 Dispositions

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

7.2.1 URI Structure

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

587 urn:epcglobal:cbv:disp:*payload*

588 where the *payload* part is a string as specified in the next section. Every payload string
589 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 `disposition` field. If the
592 `disposition` field is present, the value of the `disposition` field 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 written
595 exactly as specified in the table below, in all lowercase letters (possibly including underscores, as
596 indicated).

597 *Example (non-normative): the following shows an excerpt of a CBV-Compliant EPCIS*
598 *document in XML format containing a single event, where the disposition of that event is the*
599 *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 string in the*
612 *disposition field. It is also not CBV-Compatible, because the value of the disposition field is not*
613 *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>              WRONG
620          ...
621        </ObjectEvent>
622      </EventList>
623    </EPCISBody>
624  </epcis:EPCISDocument>
```

625 *Additional examples may found in Section 10.1.*

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

Dispositions		
Value	Definition	Examples
`active`	A commissioned object has just been introduced into the supply chain.	• Manufacturer A commissions tags for 10 cases of product. • A virtual document has been assigned an EPC Business step: `commissioning`
`container_clo sed`	Object has been loaded onto a container, the doors have been closed and the shipment sealed.	• Container is being closed and will be awaiting pickup in the yard. • Container is being closed and electronic seal is applied. Business step: `staging_outbound`
`destroyed`	Object has been fully rendered non-usable.	• Incinerator Operator B indicates that product and packaging have been incinerated Business step: `destroying`
`encoded`	An instance-level identifier has been written to a bar code or RFID tag, but not yet commissioned.	• 3rd Party has written EPCs to tags and returns spool of case tags to Manufacturer Business step: `encoding`
`inactive`	Decommissioned object that may be reintroduced to the supply chain.	• A reusable tag is removed from a reusable transport item. • A digital coupon or an empties refund voucher has been redeemed at retail point-of-sale Business step: `decommissioning`

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

`in_transit`	Object being shipped between two trading partners.	• Shipper Z pulled a container/product out of a manufacturer's yard on to a road
		
		Business step:
		
		`shipping`
		
		`departing`

Dispositions		
Value	Definition	Examples

`expired`	Object is past expiration date.	• Distributor Y indicates that a product is past its expiration date
		
		Business step:
		
		`holding`
		
		`staging_outbound`
		
		`storing`

`damaged`	Object is impaired in its usefulness and/or reduced in value due to a defect.	• Pallet pool operator P notices that a plank of a pallet is broken and records this incident by scanning the EPC of the pallet.
		• Retailer R receives a shipment where the product packages on the pallet have been dented
		
		Business step:
		
		`accepting`
		
		`inspecting`
		
		`receiving`
		
		`removing`
		
		`repairing`
		
		`replacing`

`disposed`	Object has been returned for disposal.	• A package of pharmaceuticals has been picked up by a distributor and will be subsequently destroyed

`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.	• Distributor Y could not obtain a valid pedigree for a product from its Manufacturer A
		
		Business step:
		
		`holding`
		
		`staging_outbound`
		
		`storing`

`non_sellable_other`	Object cannot be sold to a customer.	• A product is not sellable pending further evaluation.
		• A product is not sellable, and one of the other dispositions (`expired`, `recalled`, `damaged`, `no_pedigree_match`) does not apply.
		• Product has been sold and is awaiting customer pick-up.
		
		Business step:
		
		`holding`
		
		`inspecting`
		
		`staging_outbound`
		
		`storing`

Dispositions		
Value	Definition	Examples

recalled	Object is non-sellable because of public safety reasons.	• Manufacturer A requested that all Retailers and Distributors return its batteries that could overheat and explode
		
		Business step:
		
		`holding`
		
		`staging_outbound`
		
		`storing`

reserved	Instance-level identifier has been allocated for a third party.	• Distributor receives EPC numbers and can encode tag with the numbers. Business step: `reserving`

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

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

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

retail_sold	Product has been purchased by a customer.	• A customer at Retailer X purchased a screwdriver by checking it out through the point of sale system Business step: `retail_selling`
stolen	An object has been taken without permission or right.	• A pharmaceutical manufacturer completes an investigation of serial numbers that are missing from inventory, and concludes that they have been stolen
unknown	An object's condition is not known.	

631

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 following table
634 lists the deprecated dispositions and the values which replace them in CBV 1.1. Each CBV 1.1
635 value applies to all the situations that the corresponding CBV 1.0 value did, but may also be
636 applied to similar situations where the concept of "sellable" is not relevant. For example, in
637 CBV 1.1 the disposition `damaged` may be applied to a returnable asset, which was never
638 considered "sellable" even when it was undamaged.

CBV 1.0 Disposition (deprecated)	CBV 1.1 Disposition
`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

7.3 Business Transaction Types

641 This section specifies standard identifier values for the EPCIS
642 `BusinessTransactionTypeID` vocabulary. These identifiers may be used to populate the
643 `type` attribute of a `bizTransaction` element in an EPCIS event. See Section 8.5 for details
644 of when these identifiers should be used.

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

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 `bizTransaction` elements. If `bizTransaction` elements are present, each such element
653 MAY include a `type` attribute. If a given `bizTransaction` element includes a `type`
654 attribute, the value of the `type` attribute 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 in
657 the table below, in all lowercase letters (possibly including underscores, as indicated). See
658 Section 8.5 for more compliance requirements concerning business transaction types.

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

661 Each EPCIS event in a CBV-Compatible Document MAY include one or more
662 `bizTransaction` elements. If `bizTransaction` elements are present, each such element

663 MAY include a type attribute. If a given `bizTransaction` element 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	**Purchase Order**. A document/message that specifies details for goods and services ordered under conditions agreed by the seller and buyer.
poc	**Purchase Order Confirmation**. A document that provides confirmation from an external supplier to the request of a purchaser to deliver a specified quantity of material, or perform a specified service, at a specified price within a specified time.
bol	**Bill of Lading**. A document issued by a carrier to a shipper, listing and acknowledging receipt of goods for transport and specifying terms of delivery
inv	**Invoice**. A document/message claiming payment for goods or services supplied under conditions agreed by the seller and buyer.
rma	**Return Merchandise Authorization**. A document issued by the seller that authorizes a buyer to return merchandise for credit determination.
pedigree	**Pedigree**. A record that traces the ownership or custody and transactions of a product as it moves among various trading partners.
desadv	**Despatch Advice**. A document/message by means of which the seller or consignor informs the consignee about the despatch of goods. Also called an "Advanced Shipment Notice," but the value `desadv` is always used regardless of local nomenclature.
recadv	**Receiving Advice**. A document/message that provides the receiver of the shipment the capability to inform the shipper of actual goods received, compared to what was advised as being sent.
prodorder	**Production Order**. 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 `type` attribute of a `source` or
671 `destination` element in an EPCIS event. See Section 8.6 for details of when these identifiers
672 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 string
677 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 `source` and/or
680 `destination` elements. The value of the `type` attribute of the `source` or `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 following the
683 prefix SHALL be written exactly as specified in the table below, in all lowercase letters (possibly
684 including underscores, as indicated). See Section 8.6 for more compliance requirements
685 concerning source and destination types.

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

688 Each EPCIS event in a CBV-Compatible Document MAY include one or more `source` and/or
689 `destination` elements. The value of the `type` attribute of the `source` or `destination`
690 element MAY be a URI as specified above for a CBV-Compliant document, and MAY be any
691 other URI that meets the general requirements specified in [EPCIS1.1], Section 6.4, except for
692 those URIs which in this standard are forbidden or designated for a different purpose.

Source/Destination Types	
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.

8 User Vocabularies

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

8.1 General Considerations

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

704 The EPCIS standard (Section 6.4) places general constraints on the identifiers that End Users
705 may create for use as User Vocabulary elements. Specifically, an identifier must conform to
706 URI syntax, and must either conform to syntax specified in GS1 standards or must belong to a
707 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 identifiers for
709 user vocabularies, so that CBV-Compliant documents will use identifiers that have a predictable
710 structure. This in turn makes it easier for trading partners to understand the meaning of such
711 identifiers.

712 For each user vocabulary considered here, several different syntax templates are provided for
713 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 understood. EPCs
716   may also be encoded into data carriers such as RFID tags and bar codes according to GS1
717   standards. For this reason, EPCs are often the best choice for creating user vocabulary
718   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 creates the
722   vocabulary element be authorized to use the URN namespace that appears following the
723   `urn:` prefix. For example, the End User may register its own URN namespace with the
724   Internet Assigned Numbers Authority (IANA). Alternatively, an industry consortium or
725   other trading group could register a URN namespace, and define a syntax template beginning
726   with this namespace for use by its members in creating vocabulary elements. Because of the
727   difficulty of registering a URN namespace, this method is typically used by trading groups,
728   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 creates the
732   vocabulary element be authorized to use the Internet domain name that appears following the
733   `http:` prefix. Often a subdomain of the End User's organization domain is used; for
734   example, the Example Corporation may choose to use `epcis.example.com` as a domain
735   name for constructing user vocabulary identifiers. Because registering an Internet domain
736   name is relatively easy, this method is quite appropriate for use by individual end users as
737   well as by industry groups.

738   Note that HTTP URLs used as EPCIS user vocabulary elements do not necessarily refer to a
739   web page. They are just identifiers (names) that happen to use the HTTP URI scheme for the
740   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 provided*
743 *for each user vocabulary is to provide flexibility for end users to meet their business*
744 *requirements. Use of an EPC is preferred for most end user vocabularies; however, EPC codes*
745 *are somewhat constrained in syntax (e.g., limitations on character set and number of characters*
746 *allowed), and may not easily accommodate the construction of identifiers based on codes*
747 *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 CBV-
751 Compatible documents SHALL use an EPC Pure Identity URI, except as noted below. An EPC
752 Pure Identity URI is a URI as specified in [TDS1.9], Section 6 (specifically, a URI matching the
753 grammar production `EPC-URI` in [TDS1.9], Section 6.3). EPC "pure identity" URIs begin with
754 `urn:epc:id:`….

755 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the other URI
756 forms for EPCs defined in [TDS1.9]. In particular, documents SHALL NOT use EPC Tag URIs
757 (`urn:epc:tag:`…) , EPC Pure Identity Pattern URIs (`urn:epc:idpat:`…), or EPC Pattern
758 URIs (`urn:epc:pat:`…), except that both CBV-Compliant and CBV-Compatible documents
759 MAY use EPC Pattern URIs for class-level identification of objects as specified in Section 8.3.1.
760 Both CBV-Compliant and CBV-Compatible documents MAY use EPC Raw URIs
761 (`urn:epc:raw:`…) as defined in [TDS1.9], Section 12, provided that the raw value cannot be
762 decoded as an EPC. Both CBV-Compliant and CBV-Compatible documents SHALL NOT use
763 an EPC Raw URI representing EPC memory bank contents that could be successfully decoded
764 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 identifier*
766 *in the "what" dimension] is an Electronic Product Code, the [identifier] SHALL be the "pure identity" URI for the*
767 *EPC as specified in [TDS1.9], Section 6. Implementations MAY accept URI-formatted identifiers other than EPCs."*
768 *The above language clarifies this requirement, and provides more specific references to [TDS1.9]. The above*
769 *language also extends these restrictions to the use of EPC URIs in other dimensions of EPCIS events beyond the*
770 *"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-Compatible
774 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*`:**:`*qual*`:`*Remainder*

777 where the components of this template are as follows:

Template Component	Description
`urn:`	The characters u, r, n, and : (colon).
URNNamespace	A URN Namespace registered with the Internet Assigned Numbers Authority according to [RFC2141].
`:**:`	Denotes either a single colon character or any string that conforms to the requirements of [RFC2141] and any syntax rules defined for the registered URN namespace, and which begins and ends with a colon character. In other words, any number of additional subfields may be included between the URN Namespace and the `qual` component, in order to provide flexibility for URN Namespace owners to administer their namespace.
`qual:`	A qualifier as specified in Sections 8.2 through 8.5, depending on the type of identifier.
Remainder	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 SHOULD be
780 60 characters or fewer.

781 Identifiers of this form must be assigned by the owner of the URN Namespace. The owner of
782 the URN Namespace may delegate the authority to assign new identifiers to End Users or other
783 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-Compatible
787 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:

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

`[Subdomain.]Domain`	An Internet Domain name that has been registered with an Internet Domain Name Registrar, optionally preceded by one or more subdomain names.
	
	For example, if `example.com` is a registred Internet Domain Name, then the following are acceptable values for this component:
	
	`example.com`
	`epcis.example.com`
	`a.rather.verbose.example.com`
	
	Unless there is a reason to do otherwise, `epcis.example.com` is recommended for most End Users (where the End User substitutes its own company or organizational Domain Name for `example.com`).
	
	Explanation (non-normative): Use of a subdomain dedicated to EPCIS, such as `epcis.example.com`, helps to avoid the possibility of conflict with other uses of the company 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.

`/**/`	Denotes either a single slash character, or any string that matches the grammar rule `path-absolute` defined in [RFC3986], Section 3.3. In other words, any number of additional path components may be included between the authority component and the `obj` component, in order to provide flexibility for domain owners to administer their namespace.
`qual/`	A qualifier as specified in Sections 8.2 through 8.5, depending on the type of identifier.
`Remainder`	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 SHOULD be
793 60 characters or fewer.

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

8.2 Physical or Digital Objects (Instance-Level Identification)

Instance-level identifiers for physical or digital objects populate the "what" dimension of EPCIS events. This includes the `epcList`, `parentID`, `childEPCs`, `inputEPCs`, and `outputEPCs` fields in EPCIS `ObjectEvents`, `AggregationEvents`, `TransacationEvents`, and `TransformationEvents`. See Section 1 of [EPCIS1.1] for a further definition of "object" in this sense, also reproduced below.

A CBV-Compliant document SHALL use one of the three URI forms specified in this section to populate the above fields of EPCIS events, for every such field that is not null. A CBV-Compatible document MAY use one of the three URI forms specified in this section, or MAY use any other URI that meets the general requirements specified in [EPCIS1.1], Section 6.4, except for those URIs which in this standard are forbidden or designated for a different purpose.

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

Explanation (non-normative), quoted from [EPCIS1.1]: "Objects" in the context of EPCIS typically refers to physical objects that are identified either at a class or instance level and which are handled in physical handling steps of an overall business process involving one or more organizations. Examples of such physical objects include trade items (products), logistic units, returnable assets, fixed assets, physical documents, etc. "Objects" may also refer to digital 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.

Section 8.2 of this CBV standard defines identifier structures for instance-level identification of Objects; Section 8.3 defines identifier structures for class-level identification of Objects.

8.2.1 EPC URI for Instance-level Identification of Objects

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

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

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

8.2.2 Private or Industry-wide URN for Instance-level Identification of Objects

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

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

844

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

848   *Example (non-normative): An EPCIS document in XML format containing a usage sample may*
849   *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 as
852   specified below to populate the `epcList`, `parentID`, and `childEPCs` fields in EPCIS
853   `ObjectEvents`, `AggregationEvents`, and `TransacationEvents`. However, both
854   CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form
855   (Section 8.2.1) unless there is a strong reason to do otherwise. See Section 8.1 for general
856   considerations regarding the use of HTTP URL identifiers.

857   An HTTP URL suitable for populating the `epcList`, `parentID`, and `childEPCs` fields 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:

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

861

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

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

8.3 Physical or Digital Objects (Class-Level Identification)

868 Class-level identifiers for physical or digital objects populate the "what" dimension of EPCIS
869 events. This includes the `epcClass` field within the EPCIS `QuantityEvent` (deprecated in
870 EPCIS 1.1) and within the `quantityElement` structures of EPCIS `ObjectEvents`,
871 `AggregationEvents`, `TransacationEvents`, and `TransformationEvents`. See
872 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 section to
874 populate the above fields of EPCIS events, for every such field that is not null. A CBV-
875 Compatible document MAY use one of the three URI forms specified in this section, or MAY
876 use any other URI that meets the general requirements specified in [EPCIS1.1], Section 6.4,
877 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 form as
879 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 and which*
882 *are handled in physical handling steps of an overall business process involving one or more*
883 *organizations. Examples of such physical objects include trade items (products), logistic units,*
884 *returnable assets, fixed assets, physical documents, etc. "Objects" may also refer to digital*
885 *objects, also identified at either a class or instance level, which participate in comparable*
886 *business process steps. Examples of such digital objects include digital trade items (music*
887 *downloads, electronic books, etc.), digital documents (electronic coupons, etc), and so forth.*
888 *Throughout this document the word "object" is used to denote a physical or digital object,*
889 *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 identification of*
891 *Objects; Section 8.3 defines identifier structures for class-level identification of Objects.*

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 URI
894 forms specifed in the EPC Tag Data Standard to populate the `epcClass` field within the EPCIS
895 `QuantityEvent` (deprecated in EPCIS 1.1) and within the `quantityElement` structures of
896 EPCIS `ObjectEvents`, `AggregationEvents`, `TransacationEvents`, and
897 `TransformationEvents`:

Identifier Type	URI Form	Normative Reference
GTIN	urn:epc:idpat:sgtin:*CCC.III.**	[TDS1.9, Section 8]

Identifier Type	URI Form	Normative Reference
GTIN+batch/lot	`urn:epc:class:lgtin: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 URI
901   or the Indicator + Item Reference portion of an LGTIN EPC Class URI

902   • *TTT*   is the Returnable Asset Type, Document Type, Coupon Reference, or Component/Part
903   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 Pure
905   Identity Pattern URI form specified in [TDS1.9, Section 8]. This includes, for example, an
906   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 other URI
908   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 Pattern*
910   *URIs as a way to specify a pattern that matches many instance-level EPCs. For example, the*
911   *EPC Pure Identity Pattern URI* `urn:epc:idpat:sgtin:0614141.112345.*` *matches*
912   *any SGTIN URI that begins with* `urn:epc:idpat:sgtin:0614141.112345,` *for*
913   *example the specific SGTIN URI* `urn:epc:idpat:sgtin:0614141.112345.400.` *In*
914   *the EPCIS Simple Event Query, such a pattern may be used to match EPCIS events whose*
915   *"what" dimension contains instance-level identifiers that have a specified GTIN and any serial*
916   *number.*

917   *The table above specifies the use of EPC Pure Identity Pattern URIs to achieve a second*
918   *purpose, namely as class-level identifiers for use in the Quantity Element fields of EPCIS events.*
919   *In this usage, the URI* `urn:epc:idpat:sgtin:0614141.112345.*` *refers to the object*
920   *class identified by GTIN 10614141123459.*

921   *Not all EPC Pure Identity Pattern URIs make sense as class-level identifiers. For example,*
922   *when* `urn:epc:idpat:sgtin:0614141.*.*` *is used in an EPCIS query to match*
923   *instance-level identifiers, it matches all SGTIN identifiers that include GS1 Company Prefix*
924   *0614141. This is valid as a matching condition for a query, but there is no corresponding object*
925   *class and so this is not a valid class-level identifier. A similar argument applies to a URI such as*
926   `urn:epc:idpat:sscc:0614141.*,` *and the other EPC Pattern URIs not included in the*
927   *table above.*

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

A CBV-Compliant document or CBV-Compatible document MAY use a private or industry-wide URN as specified below to populate the `epcClass` field within the EPCIS `QuantityEvent` (deprecated in EPCIS 1.1) and within the `quantityElement` structures of EPCIS `ObjectEvents`, `AggregationEvents`, `TransacationEvents`, and `TransformationEvents`. However, both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form (Section 8.3.1) unless there is a strong reason to do otherwise. See Section 8.1 for general considerations regarding the use of Private or Industry-wide URI identifiers.

A Private or Industry-wide URI suitable for populating the `epcClass` field of EPCIS events SHALL have the following form:

`urn:URNNamespace:**:class:ObjClassid`

where the components of this template are as follows:

Template Component	Description
`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.

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

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

8.3.3 HTTP URLs for Class-level Identification of Objects

A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL as specified below to populate the `epcClass` field within the EPCIS `QuantityEvent` (deprecated in EPCIS 1.1) and within the `quantityElement` structures of EPCIS `ObjectEvents`, `AggregationEvents`, `TransacationEvents`, and `TransformationEvents`. However, both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form (Section 8.3.1) unless there is a strong reason to do otherwise. See Section 8.1 for general considerations regarding the use of HTTP URL identifiers.

An HTTP URL suitable for populating the `epcClass` fields of EPCIS events SHALL have the following form:

`http://[Subdomain.]Domain/**/class/ObjClassid`

where the components of this template are as follows:

Template Component	Description
`http://[Subdomain.]Domain/**/`	As specified in Section 8.1.3.
`class/`	The characters `c`, `l`, `a`, `s`, `s`, and `/` (slash).
`ObjClassid`	An identifier for the object class that matches the grammar rule `segment-nz` defined in [RFC3986], Section 3.3 (among other things, this means `ObjClassid` 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 `Domain`. The
962 owner of the domain may delegate the authority to assign new identifiers to other parties,
963 provided that appropriate rules are employed to ensure global uniqueness.

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

8.4 Locations

966

967 Identifiers for locations populate the "where" dimension of EPCIS events. This includes the
968 `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 section to
970 populate the above fields of EPCIS events, for every such field that is not null. A CBV-
971 Compatible document MAY use one of the four URI forms specified in this section, or MAY
972 any other URI that meets the general requirements specified in [EPCIS1.1], Section 6.4, except
973 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 form as
975 specified in Section 8.4.1 unless there is a strong reason to do otherwise.

8.4.1 EPC URI for Location Identifiers

976

977 A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure Identity
978 URI as specified in Section 8.1.1 to populate the `readPoint` and `businessLocation`
979 fields in all EPCIS event types. Both CBV-Compliant and CBV-Compatible documents
980 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 schemes other
982 than SGLN EPCs (`urn:epc:id:sgln:…`) for location identifiers, unless there is a strong
983 reason to do so.

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

8.4.2 Private or Industry-wide URN for Location Identifiers

986

987 A CBV-Compliant document or CBV-Compatible document MAY use a private or industry-
988 wide URN as specified below to populate the `readPoint` and `businessLocation` fields in
989 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 otherwise.
991   See Section 8.1 for general considerations regarding the use of Private or Industry-wide URI
992   identifiers.

993   A Private or Industry-wide URI suitable for populating the `readPoint` and
994   `businessLocation` fields 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:

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

997

998   Identifiers of this form must be assigned by the owner of the URN Namespace. The owner of
999   the URN Namespace may delegate the authority to assign new identifiers to End Users or other
1000   parties, provided that appropriate rules are employed to ensure global uniqueness.

1001   *Example (non-normative): An EPCIS document in XML format containing a usage sample may*
1002   *be found in Section 10.2.*

8.4.3 HTTP URLs for Location Identifiers

1004   A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL as
1005   specified below to populate the `readPoint` and `businessLocation` fields in all EPCIS
1006   event types. However, both CBV-Compliant and CBV-Compatible documents SHOULD use
1007   the EPC URI form (Section 8.4.1) unless there is a strong reason to do otherwise. See
1008   Section 8.1 for general considerations regarding the use of HTTP URL identifiers.

1009   An HTTP URL suitable for populating the `readPoint` and `businessLocation` fields 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:

Template Component	Description
`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-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.

1013

1014 Identifiers of this form must be assigned by the owner of the Internet domain *Domain*. The
1015 owner of the domain may delegate the authority to assign new identifiers to other parties,
1016 provided that appropriate rules are employed to ensure global uniqueness.

1017 *Example (non-normative): An EPCIS document in XML format containing a usage sample may*
1018 *be found in Section 10.2.*

8.4.4 Geographic Location URIs for Location Identifiers

1020 A CBV-Compliant document or CBV-Compatible document MAY use a geographic location
1021 URI as specified in [RFC5870] to populate the `readPoint` and `businessLocation` fields
1022 in all EPCIS event types. Such identifiers may be used in situations where it is not feasible to
1023 assign a unique location identifier; for example, to indicate the location of a ship on the open
1024 ocean. Both CBV-Compliant and CBV-Compatible documents SHOULD use a location
1025 identifier as specified in Sections 8.4.1 through 8.4.3 (with preference given to the EPC URI
1026 form as specified in Section 8.4.1) unless a geographic location URI is the only feasible
1027 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 location*
1030 *URI looks like this:*

1031 `geo:22.300,-118.44`

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

1034 *Other forms of the* geo *URI allow for the inclusion of altitude, uncertainty radius, and reference*
1035 *coordinate system. Please consult [RFC5870] for details of these and other considerations that*
1036 *apply to the use of the geographic location URI.*

8.5 Business Transactions

1038 Identifiers for business transactions populate the "why" dimension of EPCIS events. This
1039 includes the `bizTrasactionList` field in all EPCIS event types.

1040 The EPCIS standard provides for a business transaction to be identified by a pair of identifiers,
1041 the "business transaction identifier" (hereinafter "BTI") that names a particular business
1042 transaction, and an optional "business transaction type" (hereinafter "BTT") that says what kind
1043 of business transaction the identifier denotes (purchase order, invoice, etc.). Section 7.3 of this
1044 standard provides standardized values for BTTs.

1045 URI forms for BTIs are specified below. A CBV-Compliant document SHALL use one of the
1046 four URI forms specified in this section to populate the BTI field (text content of the
1047 `bizTransaction` element) of EPCIS events, for every such field that is not null. A CBV-
1048 Compatible document MAY use one of the four URI forms specified in this section, or MAY use
1049 any other URI that meets the general requirements specified in [EPCIS1.1], Section 6.4, except
1050 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 of
1052 the following three combinations:

1053   •   If the goal is to communicate a business transaction identifier without indicating its type, a
1054   BTI is included and the BTT omitted.

1055   •   If the goal is to communicate a business transaction identifier and to indicate its type, and
1056   furthermore the type is one of the CBV standard types specified in Section 7.3, a BTI is
1057   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, and
1059   furthermore the type is not one of the CBV standard types specified in Section 7.3, the BTI is
1060   included, and some URI that does not begin with `urn:epcglobal:cbv:…` is included as
1061   the BTT. (This is CBV-Compatible but not CBV-Compliant.)

8.5.1 EPC URI for Business Transaction Identifiers

1063   A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure Identity
1064   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 schemes other
1066   than GDTI EPCs (`urn:epc:id:gdti:…`) or GSRN EPCs (`urn:epc:id:gsrn:…`) for
1067   business transaction identifiers, unless there is a strong reason to do so. GDTI EPCs SHOULD
1068   only be used as business transaction identifiers when they have been assigned to denote a
1069   business transaction, rather than a physical document not connected with any business
1070   transaction.

1071   Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the other URI
1072   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 Identifier*
1074   *(GDTI) is to identify business transactions such as invoices, purchase orders, and so on. When a*
1075   *GDTI is used in this way, it is suitable for use as a business transaction identifier in EPCIS.*
1076   *However, many business information systems use other types of identifiers for business*
1077   *transactions, and so the use of GDTI is not as strongly recommended as SGLNs are for locations*
1078   *or other types of EPCs are for physical or digital objects. It is also for this reason that the form*
1079   *in Section 8.5.2 is provided.*

1080

1081   *Example (non-normative): An EPCIS document in XML format containing a usage sample may*
1082   *be found in Section 10.1.*

8.5.2 GLN-based Identifier for Legacy System Business Transaction Identifiers

1085   A CBV-Compliant document or CBV-Compatible document MAY use a GLN-based identifier
1086   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 event types
1088   SHALL have the following form:

1089   `urn:epcglobal:cbv:bt:`*`gln: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).
gln:	A 13-digit Global Location Number (GLN) that identifies the business system within which transID is defined, followed by a colon. This is typically a "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.
transID	An identifier for the business transaction that complies with the requirements of [RFC2141] and which does not contain a colon character. This identifier must be unique relative to all other identifiers that begin with the same prefix.

1091

1092 Identifiers of this form must be assigned by the owner of the GLN that is embedded in the
1093 identifier. The owner of the GLN may delegate the authority to assign new identifiers to other
1094 parties, provided that appropriate rules are employed to ensure global uniqueness.

1095 *Example (non-normative): An EPCIS document in XML format containing a usage sample may*
1096 *be found in Section 10.2.*

8.5.3 Private or Industry-wide URN for Business Transaction Identifiers

1097
1098

1099 A CBV-Compliant document or CBV-Compatible document MAY use a private or industry-
1100 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 EPCIS
1102 event types SHALL have the following form:

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

1104 where the components of this template are as follows:

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

1105

1106 Identifiers of this form must be assigned by the owner of the URN Namespace. The owner of
1107 the URN Namespace may delegate the authority to assign new identifiers to End Users or other
1108 parties, provided that appropriate rules are employed to ensure global uniqueness.

1109 *Example (non-normative): An EPCIS document in XML format containing a usage sample may*
1110 *be found in Section 10.2*

8.5.4 HTTP URLs for Business Transaction Identifiers

1111
1112 A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL as
1113 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 event types
1115 SHALL have the following form:

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

1117 where the components of this template are as follows:

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

1118

1119 Identifiers of this form must be assigned by the owner of the Internet domain *`Domain`*. The
1120 owner of the domain may delegate the authority to assign new identifiers to other parties,
1121 provided that appropriate rules are employed to ensure global uniqueness.

1122 *Example (non-normative): An EPCIS document in XML format containing a usage sample may*
1123 *be found in Section 10.2.*

8.6 Source/Destination Identifiers

1125 Identifiers for sources and destinations populate the `source` and `destination` elements
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 section to
1128 populate the above fields of EPCIS events. A CBV-Compatible document MAY use one of the
1129 three URI forms specified in this section, or MAY use any other URI that meets the general
1130 requirements specified in [EPCIS1.1], Section 6.4, except for those URIs which in this standard
1131 are forbidden or designated for a different purpose.

1132 Both CBV-Compliant and CBV-Compatible documents SHOULD use the EPC URI form as
1133 specified in Section 8.6.1 unless there is a strong reason to do otherwise.

8.6.1 EPC URI for Source/Destination Identifiers

1135 A CBV-Compliant document or CBV-Compatible document MAY use an EPC Pure Identity
1136 URI as specified in Section 8.1.1 to populate the `source` and `destination` elements in all
1137 EPCIS event types. Both CBV-Compliant and CBV-Compatible documents SHOULD use this
1138 form unless there is a strong reason to do otherwise.

1139 Both CBV-Compliant and CBV-Compatible documents SHOULD NOT use EPC schemes other
1140 than SGLN EPCs (`urn:epc:id:sgln:…`) for source and destination identifiers, unless there
1141 is a strong reason to do so.

1142 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the other URI
1143 forms for EPCs defined in [TDS1.9]; see Section 8.1.1 for details.

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

1144

1145 A CBV-Compliant document or CBV-Compatible document MAY use a private or industry-
1146 wide URN as specified below to populate the `source` and `destination` fields in all EPCIS
1147 event types. However, both CBV-Compliant and CBV-Compatible documents SHOULD use
1148 the EPC URI form (Section 8.6.1) unless there is a strong reason to do otherwise. See
1149 Section 8.1 for general considerations regarding the use of Private or Industry-wide URI
1150 identifiers.

1151 A Private or Industry-wide URI suitable for populating the `source` and `destination` fields
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:

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

1155

1156 Identifiers of this form must be assigned by the owner of the URN Namespace. The owner of
1157 the URN Namespace may delegate the authority to assign new identifiers to End Users or other
1158 parties, provided that appropriate rules are employed to ensure global uniqueness.

8.6.3 HTTP URLs for Source/Destination Identifiers

1159

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

1165 An HTTP URL suitable for populating the `source` and `destination` fields 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:

Template Component	Description
`http://[`*Subdomain.*`]`*Domain*`/**/`	As specified in Section 8.1.3.
`sd/`	The characters s, d, and / (slash).

Template Component	Description
SourceOrDestId	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 *Domain*. The
1171 owner of the domain may delegate the authority to assign new identifiers to other parties,
1172 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 document
1177 SHALL use one of the four URI forms specified in this section to populate the
1178 `transformationID` field of EPCIS `TransformationEvents`, for every such field that is
1179 not null. A CBV-Compatible document MAY use one of the four URI forms specified in this
1180 section, or MAY use any other URI that meets the general requirements specified in [EPCIS1.1],
1181 Section 6.4, except for those URIs which in this standard are forbidden or designated for a
1182 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 Identity
1185 URI as specified in Section 8.1.1 to populate the `transformationID` field of EPCIS
1186 `TransformationEvents`.

1187 Both CBV-Compliant and CBV-Compatible documents SHOULD NOT use EPC schemes other
1188 than GDTI EPCs (`urn:epc:id:gdti:...`) for transformation identifiers unless there is a
1189 strong reason to do so. GDTI EPCs SHOULD only be used as transformation identifiers when
1190 they have been assigned to denote a transformation, rather than a physical document not
1191 connected with any transformation.

1192 Both CBV-Compliant and CBV-Compatible documents SHALL NOT use any of the other URI
1193 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 Identifier*
1195 *(GDTI) is to identify business transactions such as production orders which may be in one-to-*
1196 *one correspondence with transformations. When a GDTI is used in this way, it is suitable for*
1197 *use as a transformation identifier in EPCIS. However, many business information systems use*
1198 *other types of identifiers for transformations, and so the use of GDTI is not as strongly*
1199 *recommended as SGLNs are for locations or other types of EPCs are for physical or digital*
1200 *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 identifier
1204 as specified below 8.1.1 to populate the `transformationID` field of EPCIS
1205 `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).
`gln:`	A 13-digit Global Location Number (GLN) that identifies the business system within which *xformID* is 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.
`xformID`	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 the
1211 identifier. The owner of the GLN may delegate the authority to assign new identifiers to other
1212 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 industry-
1215 wide URN as specified below to populate the `transformationID` field of EPCIS
1216 `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:

Template Component	Description
`urn:`*`URNNamespace`*`:**:`	As specified in Section 8.1.2.
`xform:`	The characters x, f, o, r, m, and : (colon).
`xformID`	An identifier for the transformation 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.

1220

1221 Identifiers of this form must be assigned by the owner of the URN Namespace. The owner of
1222 the URN Namespace may delegate the authority to assign new identifiers to End Users or other
1223 parties, provided that appropriate rules are employed to ensure global uniqueness.

8.7.4 HTTP URLs for Transformation Identifiers

1224

1225 A CBV-Compliant document or CBV-Compatible document MAY use an HTTP URL as
1226 specified below to populate the `transformationID` field of EPCIS
1227 `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:

Template Component	Description
`http://[Subdomain.]Domain/**/`	As specified in Section 8.1.3.
`xform/`	The characters `x`, `f`, `o`, `r`, `m`, and `/` (slash).
`xformID`	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 `Domain`. The
1233 owner of the domain may delegate the authority to assign new identifiers to other parties,
1234 provided that appropriate rules are employed to ensure global uniqueness.

1235 *Example (non-normative): An EPCIS document in XML format containing a usage sample may*
1236 *be found in Section 10.2.*

9 Location Master Data

1237

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 master
1240 data that may be used to describe a location identifier. CBV master data for a location identifier
1241 consists of five data values ("master data attributes") associated with that location identifier.
1242 These same master data attributes may be used to describe a location identifier whether the
1243 location identifier is a Read Point or a Business Location. These master data attributes are
1244 defined below.

1245 Different location identifiers may denote locations at different levels of granularity. The master
1246 data attributes defined in the CBV are designed to be used for locations at two different levels of
1247 granularity:

1248 • *Site*   A physical location where a structure or group of structures (and / or areas) is.
1249   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 area within
1252   a warehouse, and so on.

1253 A location at any level of granularity may be described by an appropriate combination of master
1254 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 this
1256   location is contained. For a Sub-site location, this is the identifier of the parent location. For
1257   a Site location, this is the identifier of the location itself. The Site Location master data
1258   attribute applies to locations of any granularity.

1259   When the identifier for the location to which this master data attribute applies is an SGLN
1260   EPC, the Site Location master data attribute is always the 13-digit GLN implied by the
1261   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 primary
1263   business function of the sub-site location. This master data attribute is only applicable to a
1264   sub-site location.

1265   This value is expressed as a single numerical code (see code list below); for 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 qualifies the
1268   business function of the sub-site location. This master data attribute is only applicable to a
1269   sub-site location.

1270   Sub-site attributes are expressed as zero or more numerical codes (see code list below). For
1271   example, if the sub-site type is 203 (sales area), then sub-site attributes of "404,412" further
1272   specifies that this location identifier is a sales area for groceries (attribute 412) that are frozen
1273   (attribute 404).

1274 • *Sub-Site Detail*   A master data attribute of a sub-site location that provides additional
1275   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 *some* shelf in the back room of store 123,
1277   a party may wish to communicate the *exact* shelf in the backroom of store 123, e.g. shelf
1278   #4567. The Sub-Site Detail master data attribute provides the identity of the specific shelf;
1279   e.g., 4567.

9.1 Location Master Data Constraints

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

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

1283

9.2 Location Master Data Names

1284

1285 The EPCIS standard provides for access to master data elements through the use of name value
1286 pairs. In order to access the value of a particular master data element, one must know the
1287 corresponding name by which it can be looked up. The following table defines the names by
1288 which the values (see subsequent section) for the master data elements defined here can be
1289 accessed.

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

1290

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

9.3 Location Master Data Values

1293

1294 Using the names above, one can access the master data associated with a particular location.
1295 Each of the master data elements associated with a particular location identifier have specific
1296 values that are allowed. Those values are specified in the sections below.

9.3.1 Site Location

1297

1298 The Site Location master data attribute provides a well-known identifier for the site within which
1299 the location is contained (or, in the case of a site-level location identifier, is the well-known
1300 identifier for the site itself). When the identifier for the location to which this master data
1301 attribute applies is an SGLN EPC, the value of the corresponding Site Location master data
1302 attribute SHALL be the 13-digit GLN implied by the company prefix and location reference
1303 components of that SGLN. When the location identifier is some other URI, the value of the
1304 corresponding Site Location master data attribute SHALL be any string of 128 characters or
1305 fewer that identifies the site.

1306 *Explanation (non-normative): If the location identifier is something other than an SGLN EPC,*
1307 *the site location is typically something other than a GLN. The meaning of the site location*
1308 *master data attribute in that case is outside the scope of the CBV.*

9.3.2 Sub-Site Type

1309

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

Sub-Site Type Master Data Attribute Values		
Code	Short Description	Definition
201	Backroom	An area within a store (all formats - club, etc) used to hold product until it is purchased or can be moved to the sales floor

Sub-Site Type Master Data Attribute Values		
Code	Short Description	Definition
202	Storage Area	An area where product is kept within a facility to fulfill future need.
		Reserve rack or bulk stacking. A location where the product is stored until it is needed in selection aisles making it accessible to the consumer. Reserve slots may contain one or multiple pallet loads, as well as multiple items within them
		For a retail store Secondary storage area associated with a store (may not be in the physical location)
		Potential to use this more broadly and add attributes to make distinction where necessary (recalled area, quarantined area, controlled substance, lay-away)
203	Sales Floor	An area within a store (all formats - club, etc) where product is displayed for customer purchase
207	Returns Area	An area within a facility for holding or consolidating product to be sent back to the supplier, shipper or designated location
208	Production Area	An area within a facility where the conversion of materials and or assembly of components to manufacture goods, products or services takes place.
209	Receiving Area	An area within a facility where incoming merchandise is unloaded and checked for condition and completeness
210	Shipping Area	An area within a facility where outgoing merchandise is checked for condition and completeness and loaded onto a conveyance for transport
211	Sales Floor Transition Area	An area within a store between two physical locations (e.g. Backroom and Sales Floor) - used for a read point only
212	Customer Pick-Up Area	An area designated at a store for customer to take possession of purchased product.
213	Yard	An area outside of the main building used for holding product (e.g. Trailer or container)
214	Container Deck	An area on board a shipping vessel where containers are loaded.
215	Cargo Terminal	An area where cargo may get transferred between carriers.
		Cargo terminals provide the interface between modes of transportation.
251	Packaging Area	An area within a facility where product is packaged.
252	Picking Area	An area within a facility in which product is picked to fulfill an order.
253	Pharmacy Area	An area within a facility where prescription products are stored, dispensed and/or sold.
299	Undefined	Any sub-site type not identified by any of the listed values

9.3.3 Sub-Site Attributes

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

1315 When the value of the Sub-Site Attributes master data attribute is transmitted as a single string
1316 (including when the Sub-Site Attributes master data attribute is transmitted using the
1317 EPCISMasterDataDocument form specified in [EPCIS1.1]), the string SHALL consist of
1318 the codes separated by commas with no leading, trailing, or internal whitespace characters, and
1319 furthermore the codes SHALL appear in ascending numerical sequence reading from left-to-
1320 right.

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

Sub-Site Attribute Master Data Attribute Values		
Code	Short Description	Definition
401	Electronics	A specific area within the store for holding electronic products such as TV's, DVD players, etc.
402	Cold storage	A specific area or room that maintains a temperature above freezing but below ambient room temperature.
403	Shelf	A specified internal location for holding product.
404	Frozen	A specific area or room that maintains a temperature at or below freezing
405	Fresh	A specific area or room that maintains a specified temperature and/or humidity to preserve stored product
406	Promotion	A specific area or room that is used to hold special purchased product.
407	End Cap	A specific internal location on the sales floor, typically at the end of an aisle, for displaying product.
408	Point of Sale	An area in a retail location where sales transactions occur
409	Security	A designated internal location for the purpose of minimizing direct access to the product
411	General Mdse	An area where typically - nonfood products other than perishable, dry groceries and health and beauty care products that are displayed in stores on standard shelving. Examples include household cleaning products, paper napkins, laundry detergents, and insect repellents
412	Grocery	An area where typically - food products that are displayed in stores on standard shelving. Examples include canned goods, produce, meats.
413	Box Crusher	A Baler used to compact recycled materials (e.g. corrugated boxes, slip sheets and packaging material)
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 **DC** or **Manf Facility** 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 be any
1327 string of up to 128 characters in length.

10 Example EPCIS Documents (non-normative)

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

10.1 CBV-Compliant Object Event using standard vocabulary

1331 The following shows a CBV-Compliant EPCIS document in XML format containing a single
1332 object event, where CBV-Compliant identifiers are used for business step and disposition, and
1333 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 single
1377 object event, illustrating the use of HTTP URLs and Private or Industry-wide URNs for user
1378 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/prodution/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 single
1431 object event. CBV-Compliant EPC identifiers are used for physical objects and locations, but
1432 because non-standard identifiers are used for business step and disposition the document is CBV-
1433 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 10.4 Location Master Data

1467 The following shows an EPCIS Master Data document illustrating the use of location master data
1468 attributes defined in Section 8.6.

```
1469  <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
1470  <epcismd:EPCISMasterDataDocument
1471      xmlns:epcismd="urn:epcglobal:epcis-masterdata:xsd:1"
1472      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
1473      schemaVersion="1"
1474      creationDate="2005-07-11T11:30:47.0Z">
1475  <EPCISBody>
1476    <VocabularyList>
1477      <Vocabulary type="urn:epcglobal:epcis:vtype:ReadPoint">
```

```
1478          <VocabularyElementList>
1479             <!-- Section 9.2 - Location Master Data Names -->
1480             <VocabularyElement id="urn:epc:id:sgln:0614141.00300.0">
1481               <attribute
1482      id="urn:epcglobal:cbv:mda:site">0614141003006</attribute>
1483             </VocabularyElement>
1484
1485             <!-- Section 9.2  - Location Master Data Names -->
1486             <VocabularyElement id="urn:epc:id:sgln:0614141.00300.1">
1487               <attribute
1488      id="urn:epcglobal:cbv:mda:site">0614141003006</attribute>
1489                 <!-- Section 9.3.2  SST -->
1490                 <attribute id="urn:epcglobal:cbv:mda:sst">208</attribute>
1491                 <!-- Section 9.3.3  SSA -->
1492                 <attribute id="urn:epcglobal:cbv:mda:ssa">422</attribute>
1493                 <attribute id="urn:epcglobal:cbv:mda:ssd">Line #1 at Manufacturing
1494      Plant 1</attribute>
1495             </VocabularyElement>
1496
1497             <!-- Section 9.2  - Location Master Data Names -->
1498             <VocabularyElement id="urn:epc:id:sgln:0614141.00300.2">
1499               <attribute
1500      id="urn:epcglobal:cbv:mda:site">0614141003006</attribute>
1501                 <!-- Section 9.3.2 SST -->
1502                 <attribute id="urn:epcglobal:cbv:mda:sst">251</attribute>
1503                 <!-- Section 9.3.3 SSA -->
1504                 <attribute id="urn:epcglobal:cbv:mda:ssa">416,417</attribute>
1505             </VocabularyElement>
1506          </VocabularyElementList>
1507        </Vocabulary>
1508      </VocabularyList>
1509    </EPCISBody>
1510    </epcismd:EPCISMasterDataDocument>
```

11 References

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12 Contributors

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1535

1536 The following list, in alphabetical order by company name, contains all companies that were
1537 opt'd-in to the EPCIS and CBV 1.1 Working Group and have signed the GS1 IP Policy.

Company
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Abbvie
AndVista
Aston University
Auto-ID Labs
AutoID Labs at Fudan University
Auto-ID Labs at KAIST
Auto-ID Labs at Keio University
Axway
B2Connex S.A.
Blue Sphere Health Ltd
C & A SCS
Courbon
Creativesystems
Daimler AG
Dirk Rodgers Consulting, LLC
Everd Co. Ltd.
FoodLogiQ
France Telecom Orange
Frequentz LLC
FSE, Inc.
GlaxoSmithKline
GS1 Australia
GS1 China
GS1 Community Room Staff
GS1 Egypt
GS1 Finland
GS1 France
GS1 Germany
GS1 Global Office
GS1 Hong Kong
GS1 Ireland
GS1 Japan
GS1 Korea
GS1 Netherlands
GS1 Norway
GS1 Sweden
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GS1 US
Havs- och vattenmyndigheten
HDMA
HRAFN AS
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Ken Traub Consulting LLC
McKesson
Merck & Co., Inc.
MET Laboratories
METRO Group
Nedap
Optel Vision

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.

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