EPCIS / CBV 1.1

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EPCIS / CBV History

• EPC Information Services (EPCIS)
  • Standard language of “visibility events” – a record of what happened in the physical world
  • “What, Where, When, and Why”
  • EPCIS 1.0 ratified April 2007 (errata revision September 2007)

• Core Business Vocabulary (CBV)
  • Standardized identifiers to populate the “what”, “where”, and “why” dimensions of EPCIS
  • Code lists for EPCIS business step, disposition, business transaction types
  • Templates for business transaction identifiers
  • CBV 1.0 ratified October 2010
EPCIS Data Content

- EPCIS Visibility data consists of events, each of which records something that happened in the real world.
- Often, though not necessarily, triggered by reading an RFID tag or Bar Code.
- An event has four dimensions:
  - **What**: what physical objects were involved (EPC or other identifier)
  - **When**: when the event took place (timestamp)
  - **Where**: where the event took place (location identifier)
  - **Why**: what business process step was being carried out

EPCIS Event
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urn:epc:id:sgtin:0400001.000001.2  
2007-10-02 10:00:00 UTC  
urn:epc:id:sgln:0400001.00300.0  
urn:epcglobal:cbv:bizstep:receiving
Standard EPCIS Event in XML

<ObjectEvent>

  <eventTime>2007-11-06T15:00:02.449Z</eventTime>
  <eventTimeZoneOffset>-05:00</eventTimeZoneOffset>

  <epcList>
    <epc>urn:epc:id:sgtin:0400001.000006.1</epc>
  </epcList>

  <action>OBSERVE</action>
  <bizStep>urn:epcglobal:cbv:bizstep:receiving</bizStep>
  <disposition>urn:epcglobal:cbv:disp:active</disposition>

  <readPoint><id>urn:epc:id:sgln:0400001.00300.0</id></readPoint>
  <bizLocation><id>urn:epc:id:sgln:0400001.00300.0</id></bizLocation>

  <bizTransactionList>
    <bizTransaction type="urn:epcglobal:cbv:bt:po">
      urn:epcglobal:cbv:bt:8715131000013:A3859
    </bizTransaction>
  </bizTransactionList>

</ObjectEvent>
# EPC Core Business Vocabulary

## Business Steps
- accepting
- arriving
- assembling
- commissioning
- decommissioning
- departing
- destroying
- disassembling
- holding
- inspecting
- killing
- loading
- packing
- shipping
- receiving

... [plus 16 others]

## Dispositions
- active
- destroyed
- inactive
- in_progress
- in_transit
- sellable_not_accessibl e
- sellable_accessible
- non_sellable
- non_sellable_expired
- non_sellable_recalled
- non_sellable_damaged
- non_sellable_no_pedigr ee_match
- returned
- ... [plus 6 others]

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Actual spelling in EPCIS data: urn:epcglobal:cbv:bizstep:arriving
EPCIS Visibility Data Across a Business Process

Capture Apps

EPCIS Events

Commission  Aggregate  Ship  Receive  Store  Ship  Receive  Disaggregate

Manufacturer
Dist Ctr

Retailer
Dist Ctr  Store

Growth
tags
Palletizer
Portal
Shelving
Portal
Portal
Doorway
EPCIS Visibility Data Across a Business Process

Manufacturer

Dist Ctr

Retailer

Dist Ctr

Store

Commission  Aggregate  Ship  Receive  Store  Ship  Receive  Disaggregate

Mfr EPCIS + Retailer EPCIS

Case #123 of Product X

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Location</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/5 1:23pm</td>
<td>Mfr DC #2</td>
<td>Shipping</td>
</tr>
<tr>
<td>2/7 4:28am</td>
<td>Retail Store #5 back room</td>
<td>Receiving</td>
</tr>
<tr>
<td>2/8 5:23pm</td>
<td>Retail Store #5 front room</td>
<td>Observe</td>
</tr>
</tbody>
</table>
New Features in EPCIS 1.1 / CBV 1.1

- Traceability of non-serialized objects
  - E.g., identified by GTIN+lot, or just GTIN (not GTIN+serial)
  - Fixed or variable measure
  - Both ordinary events and aggregations
- Transformation event
  - Inputs consumed, outputs produced, with a traceable connection
- Source/Destination information
  - Ship from/to, ownership transferred from/to, etc
- Instance-level Master Data
  - E.g., expiry of a specific GTIN+serial
- New CBV identifiers:
  - Business steps: transporting, unloading, unpacking, stock_taking, cycle_counting
  - Business transaction type: production_order
  - Read point: RFC 5870-compliant geolocation (latitude/longitude)
# Use Cases Considered

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Non-serialized</th>
<th>Transformation</th>
<th>Source / Destination</th>
<th>Instance-level Master Data</th>
<th>New CBV identifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh produce / fresh fish</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Food manufacturing</td>
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<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Automotive engine logistics</td>
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<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Digital coupons / vouchers</td>
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<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Inventory mgmt</td>
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<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Drug pedigree</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Contact Details

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