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(UN/CEFACT)

1 REGULATORY AND EBUSINESS PROGRAMME DEVELOPMENT AREA
2 AGRICULTURE, AGRI-FOOD AND FISHERIES DOMAIN
3

4 BUSINESS REQUIREMENT SPECIFICATION
5 TEXTILE AND LEATHER HIGH LEVEL PROCESS & DATA MODEL
6 (BRS TEXTILE & LEATHER HIGH LEVEL V1.0)
7

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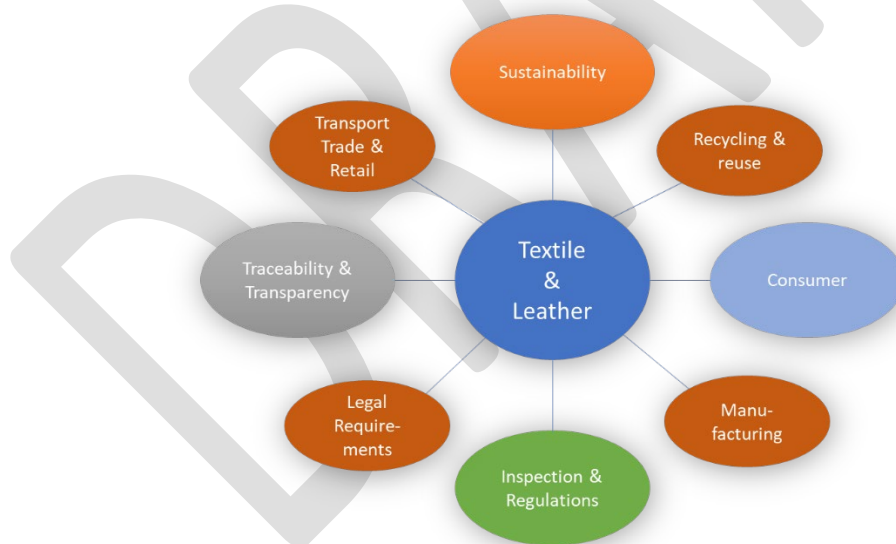
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103 1 Introduction

104 The UN/CEFACT Project “Enhancing Traceability and Transparency for Sustainable Value Chains
105 in Garment and Footwear” has been developing recommendation, guidelines and electronic business
106 standards in the Textile and Leather sector to advance more responsible production and consumption
107 patterns, in line with relevant Sustainable Development Goals (SDGs) of the United Nations 2030
108 Agenda.

109
110 The UN/CEFACT “Textile & Leather Process and Data Model” supports business processes in
111 improving traceability and sustainability in the Garment and Footwear sector. All necessary
112 traceability and sustainability information entities have been related to the key information entities of
113 the traceability framework. Through this, the sector is able to indicate its own specific information
114 exchange requirements whilst complying with the overall relevant process and data structures. The
115 data model can be applied by countries, regions or industries, and can be integrated into software
116 solutions of traders, agents, banks, customs and other governmental authorities, among others.

117
118 The Textile & Leather Process and Data Model focusses specific attention to tackling negative
119 health, social and environmental impacts of textile and leather related operations. It reuses parts of
120 existing UN/CEFACT electronic standards for Animal Traceability, Plant Traceability and their by-
121 products as well as for eCrop. These data exchange standards form a valuable basis for use within the
122 Textile and Leather sector, but require slight adjustments in order to fully meet their specific
123 requirements, and to capture sustainability performance. The Project will therefore create a specific
124 Business Requirements Specification (BRS) and specific Core Component Business Document
125 Assemblies (CCBDA XML messages) in addition to this document.

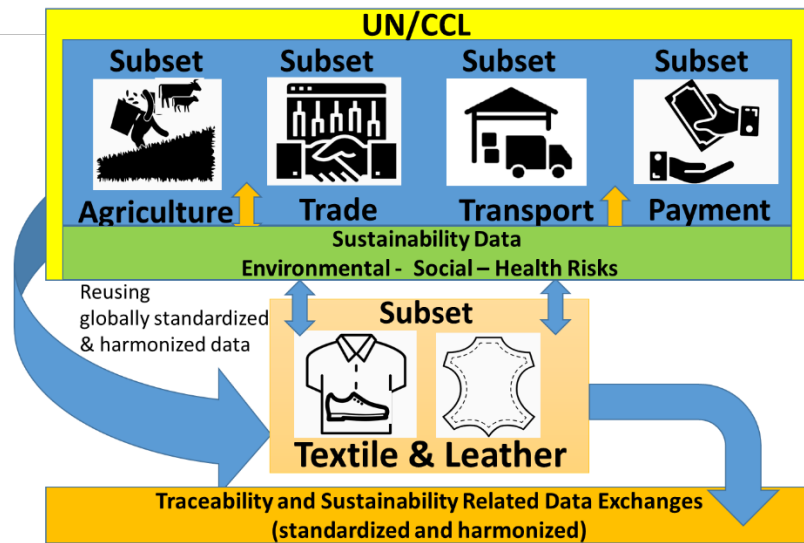


126
127 **Figure 1-1 Relevant Data Domains and Aspects**

128
129 The UN/CEFACT Textile & Leather Process and Data Model is a data model based on the proposed
130 UN/CEFACT Sustainability Development & Circular Economy Reference Data Model (SDCE
131 RDM) which is itself based on the UN/CEFACT Buy-Ship-Pay Reference Data Model (BSP RDM).
132 Ultimately, every reference data model has the UN/CEFACT Core Component Library (UN/CCL) as
133 its origin, directly or indirectly, and each forms the basis for constructing Business Data Exchange
134 Structure(s), following the UN/CEFACT Core Components Business Document Assembly Technical
135 Specification (CCBDA) methodology.

136

137 This document, the Textile & Leather Process and Data Model Business Requirement Specification
 138 provides a view of the business requirements in order to support business and regulatory processes,
 139 involved business areas, actors and key business information entities.



140
 141 **Figure 1-2 Concept of the Textile & Leather Process and Data Model**
 142

143 The UN/CEFACT generic approach and design of information entities make them reusable and
 144 interoperable. Harmonization is one of the pillars of the UN/CEFACT semantic standards. With
 145 harmonization often comes simplicity which results in the avoidance of the creation of different
 146 information entities having the same semantic meaning.

147 **2 Objective**

148 The objective of this document is to standardize the business information entities supporting
 149 business processes, and their conformance with claims for products, processes and facilities, and
 150 regulatory requirements, as well as, eventually, the business transactions providing traceability and
 151 transparency, in Textile and Leather value chains. Therefore, this document takes the generic
 152 traceability use case as the high-level process description. On the basis of this, additional BRSs
 153 documents will be created. These BRSs describe the way partners intend to play their respective
 154 roles, establish business relationship and share responsibilities to interact efficiently with the support
 155 of their respective information systems. Nonetheless, this document contains a detailed description
 156 of the business information entities, which will be the basis for all traceability and sustainability
 157 related messages to be exchanged within the sector. The business information entities are included
 158 as an embedded spreadsheet in this document using their short names. Their technical names are
 159 listed within the UN/CCL.

160 **3 Audience**

161 The audience of this document is all users who are interested in the information model supporting the
 162 traceability and sustainability goals of the Textile and Leather value chains.

163 **4 Reference Documents**

164 Knowledge and application of the following documents is crucial for the development of
 165 information entities specified in this document.

- 166 • UNECE Explanatory Note for the Business Process Analysis Activity and the Generic
 167 Traceability Model. Dated 2020.

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- UNECE Policy Paper “Accelerating action for a sustainable and circular garment and footwear industry: which role for transparency and traceability of value chains? Dated 2020.
 - UNECE TEXTILE4SDG12 “Transparency in textile value chains in relation to the environmental, social and human health impacts of parts, components and production processes”. Dated 2017.
 - UNECE “Traceability for Sustainable Trade, a Framework to design Traceability Systems for Cross Border Trade”. Dated 2016
 - EU E-Biz 4.0: the new step of the E-Biz initiative (version 2018-1).
 - ISO 19987 (EPCIS)
 - UN/CEFACT White Paper – Reference Data Model (RDM) (Draft, v1.0.0.2).
 - UN/CEFACT Reference Data Model (RDM) Guideline (Draft, v1.0.0.2).
 - UN/CEFACT Core Component Library 21A.
 - UN/CEFACT Techniques and Methodologies Group (TMG) UN/CEFACT’s Modelling Methodology (UMM): UMM Meta Model Foundation Module 2009-01-30.
 - UN/CEFACT – Core Component Technical Specification Technical Corrigendum Version 2.01 (Corr. 1) dated 12 February 2007 (CCTS 2.01 Corr.1).
 - UN/CEFACT Core Components Business Document Assembly Technical Specification (CCBDA) version 1.0 27 June 2012.
 - UNECE Glossary for the Textile and Leather sector. Dated 2020 (in development).
 - UN/CEFACT BRS Textile and Leather Traceability and Transparency Process & CCBDA Data Model. Dated 2020.

190 **4.1 Status of this document**

191

192 This document has been developed in accordance with the UN/CEFACT/TRADE/22 Open
193 Development Process and approved for publication by the UN/CEFACT Bureau.

194 **4.2 Document context**

195

196 This high-level document (blue box) describes the business requirements for the Textile & Leather
197 Process and Data Model. New business requirement specifications will be derived to serve particular
198 requirements, such as the exchange of information regarding traceability or sustainability. On the base
199 of a BRS, the CCBDA structures (message models) are built. These message data models are built
200 using a so-called uniform structure, the master data model.

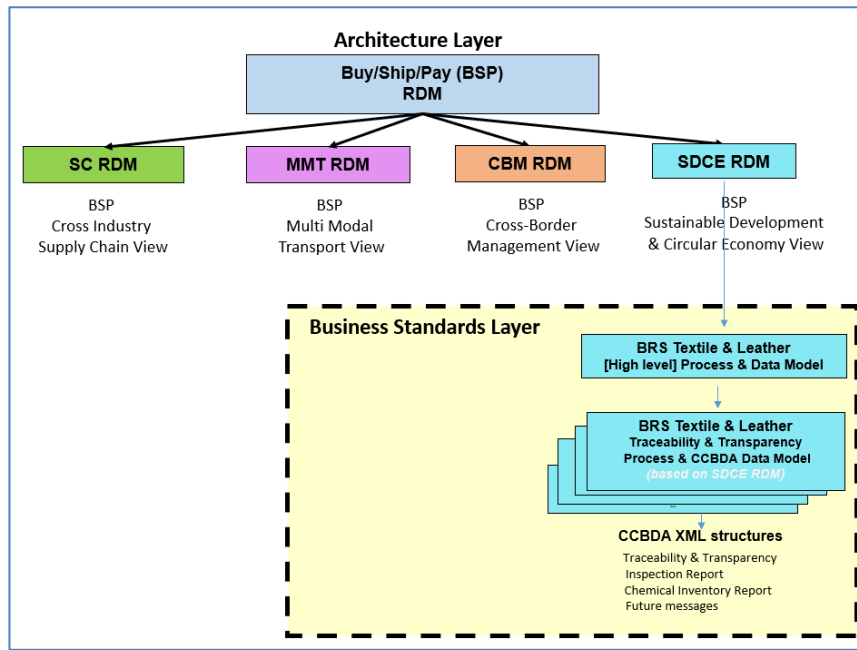


Figure 4-1 Document Context

4.3 Revision history

Version	Release	Date	Comment
0.1	Internal draft	2020-September-03	ODP3: Initial
0.2	Internal draft	2020-September-23	OPD4: Internal Review Workshop Sept. 2020
0.3	Internal draft	2020-October-20	ODP4: Updated BIE list: Logistics Package, Logistics Transport Equipment, IOT Sensor Events, BIE overview, Minor updates of figures. Deleted: Code Lists (decided on implementation level), Generic versus Specific
0.4	Internal draft	2020-October-23	ODP4: Added BIE List: Animal Batch, Additional Product Species Information, Production Waste Material, Production Waste Material Component, Production Waste Recovery Disposal Process
0.5	Public Review	2020-October-26	Public Review version

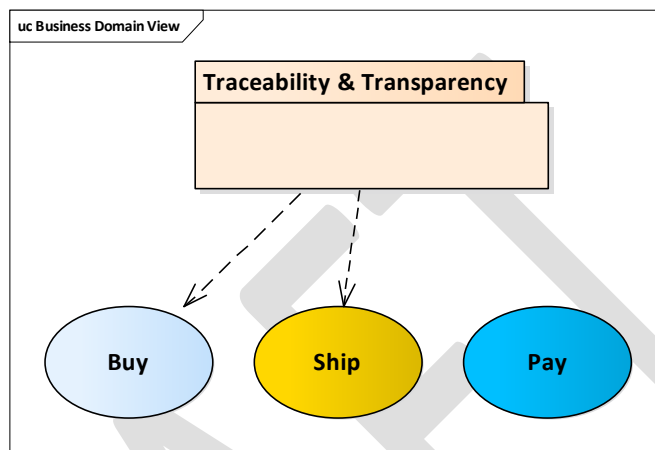
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217 5 Business Requirements View

218 5.1 Business Domain View

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220 This section describes the extent and limits of the *high-level* business processes within the Textile
221 and Leather supply chain being described in this document. The *specific* processes and use cases
222 including the exchange of messages and their content will be described in separate BRSs documents.
223 This document focusses on the data requirements in relation to the high-level processes. The
224 collection of data identified for the Textile and Leather Process and Data Model will cover the data
225 needs of the processes supporting Traceability and Transparency for sustainable trade.



226
227 **Figure 5-1 Domain View**

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Categories	Description and Values
Business Process	Asset Traceability
Product Classification	Raw Materials, Products, -Batches
Industry Classification	Textile and Leather sector
Geopolitical	Global
Official Constraint	European Regulations National regulation Local applicable regulation
Business Process Role	Traceability Requestor, Transformation Partner, Product Guardian, Validation Body, Verification Body, Service Provider
Supporting Role	Farmer, Breeder, Finishing Provider, Slaughter, Tanner, Recycler, Seller, Buyer, Customer, Supplier, Sub-contractor, Inspector, Laboratory Party, Manufacturer, Warehouse, Transport Service Provider, Brand Owner, Exporter, Importer, Carrier, Freight Forwarder, Customs Import Agent, Customs Transit Agent, Customs Export Agent, Waste Disposal Provider, IDs Provider, Effluent Treatment Party.
System Capabilities	Agreed level of security to protect data integrity Network of connected T&T databases System of authorizations and keys for retrieving Traceability and Transparency (TT) information by TT information requesting parties.

229 5.2 Generic Traceability Use Case

230
231
232 The purpose of the generic traceability use case diagram is to illustrate the principle processes for
233 establishing traceability, which are applicable across different products – i.e. the model should be good
234 for cotton, synthetic fibers, wool, viscose, leather, etc. The traceability use case diagram is presented
235 below at a high-level. In addition to identifying the principle processes, a separate document provides,
236 more detailed information for each generic process. As currently drawn, there are seven kinds of
237 generic value-chain partner roles (some of which may be fulfilled by the same organization). It is the

238 responsibility of the transformation value chain partners to ensure that output products have IDs which
 239 can be linked to the IDs of input products. The same applies in those cases where products are
 240 aggregated or disaggregated for logistical purposes. The link between the output product, input products
 241 and logistics units should be recorded.
 242

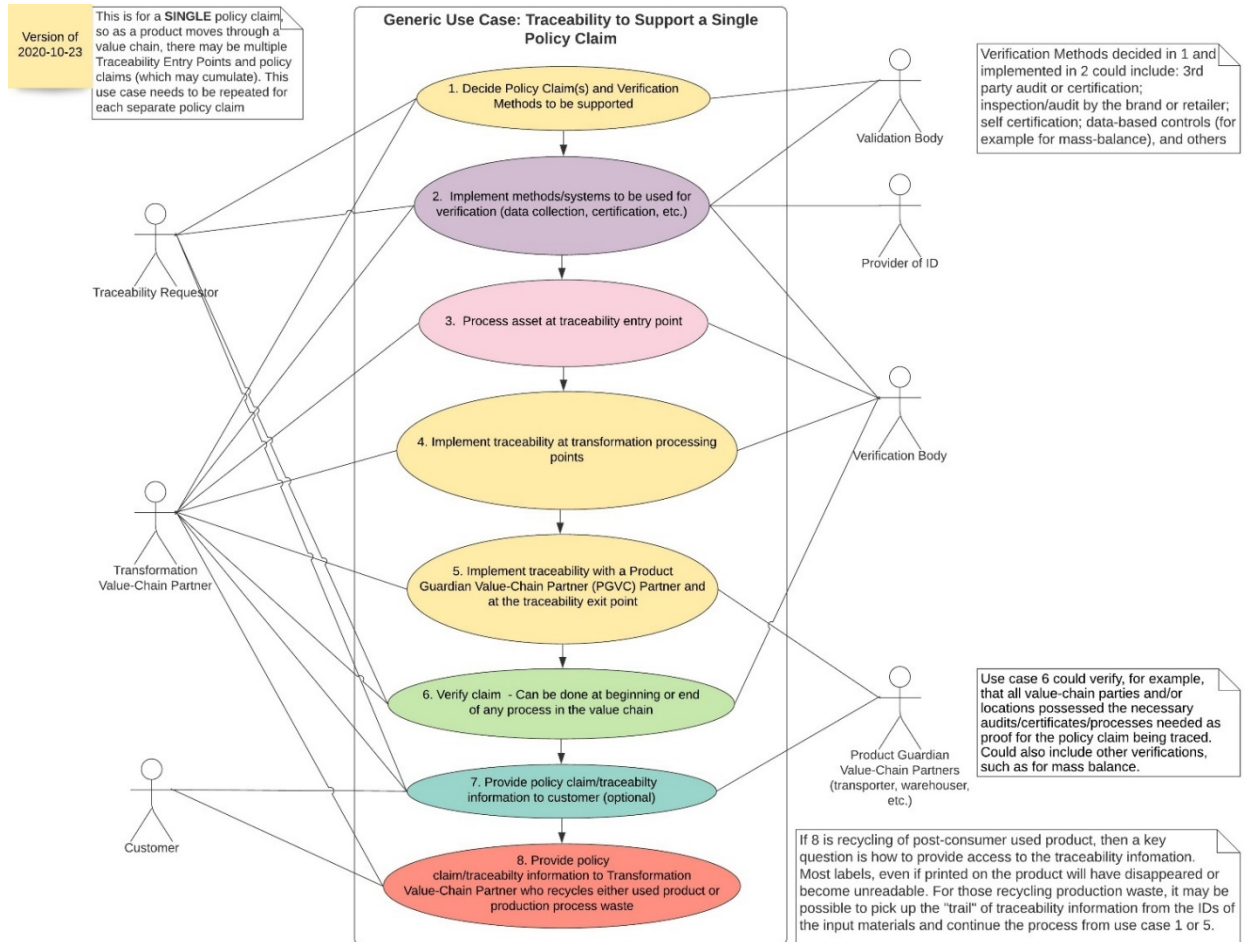


Figure 5-2 Traceability Generic Use Case

5.3 Business Partner View

The diagram below shows the business partners within the Textile and Leather value chain in a grouped manner.

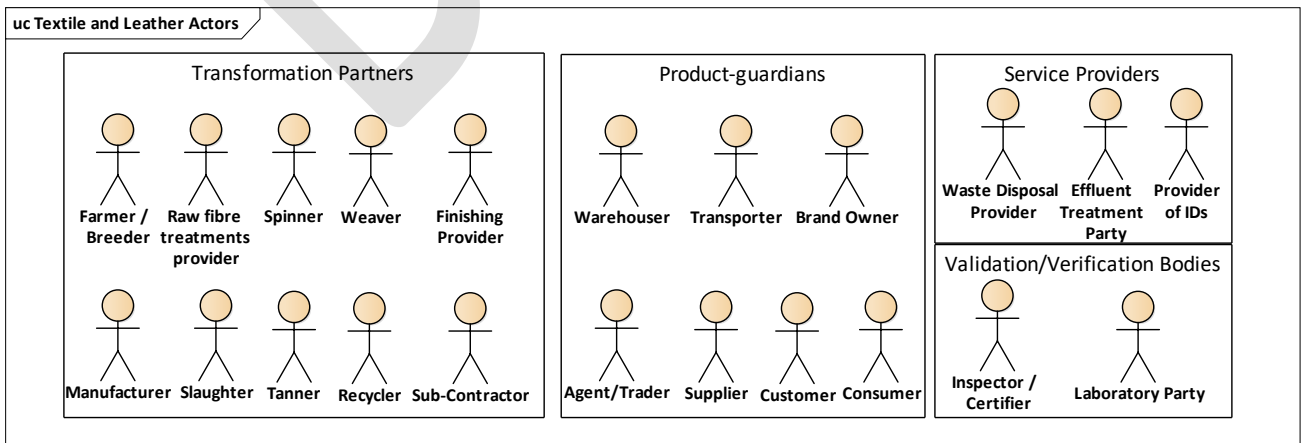


Figure 5-3 Business Partners Textile and Leather sector

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Table 5-1 Business Partners Textile and Leather sector

Nr.	Partner	Description
1	Agent / Trader	An agent or trader is a person who has been legally empowered to act on behalf of another person or an entity.
2	Brand Owner	A person or company who sells any commodity under a registered brand label.
3	Consumer	A person who purchases goods and services for personal use.
4	Customer	A person or company who buys goods or services from another company.
5	Finishing provider	A person or company whose trade is the dyeing, bleaching or washing of cloth or other material.
6	Effluent Treatment Party	An individual, group, or body having a role in effluent treatment, meaning cleaning industrial effluents, contaminated water from rivers and lakes, and so on in order to reuse the water for additional purposes. Along such lines, water is reutilized and sustained.
7	Farmer	A person or company engaged in agriculture business, field crop growing, cattle rearing for the meat or other productions (hides, milk, egg, wool, etc), breeders, raisers, finishers etc.
9	Inspector / certifier	A person or company who inspects something, such as a product, process, organization, to ensure that it complies to requirements or regulations.
10	Laboratory Party	An individual, group, or body having a role in laboratory observations.
11	Manufacturer	A person or company which makes products from raw materials or intermediary products in order to make a profit.
12	Raw fibre treatments provider (e.g. ginner)	A person or company who operates raw material e.g. a ginner using a machine which separates the seeds and hulls from the cotton fibre, a flax fibre pre-processor, a hemp fibre pre-processor etc.
13	Recycler	A person or company who recycles, or uses machines to recycle.
14	Retailer	A person or company that sells goods to the public in relatively small quantities for use or consumption rather than for resale.
15	Slaughter	A person or company (slaughterhouse) who slaughters animals, most often to provide food for humans, but also for the skins (hides).
16	Spinner	A person or company occupied in making thread by spinning.
17	Sub-contractor	A subcontractor is an individual or company that signs a contract to perform part or all of the obligations of another's contract.
18	Supplier	A person or company that provides something needed such as feed, equipment, materials, intermediary and finished products, chemicals or a service etc.
	<i>Chemical Supplier (e.g. Azo dye)</i>	A person or company that provides something needed such as chemical substances, preparations or mixtures of chemical substances.
19	Tanner	A tanner processes skins of animals. Tanning hide into leather involves a process which permanently alters the protein structure of skin, making it more durable and less susceptible to decomposition, and also possibly colouring it.
20	Transporter	A person or company involved throughout the value chain for the transportation of animals, products etc. Transportation also involves the delivery of materials such as chemicals and other supplies.
21	Warehouser	A person or company who stores goods that will be sold or distributed later.
22	Waste Disposal Provider	An individual, group, or body having a role in waste disposal; the collection, processing or deposition of the waste materials of human society. The Waste Disposal Provider may also perform the role of recycler.
23	Weaver	A person or company who weaves fabric.

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5.4 Business Requirement List

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The business requirements list below includes traceability, sustainability and other requirements. These business requirements apply to the Textile and Leather Process and Data Model for the purpose of

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257 deriving data exchange structures (so called CCBDA based messages) from this data model. The
 258 business requirements of the data exchange structures will be specified within separate BRS documents.

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Table 5-2 Business Requirement List

Nr.	Subject	Business Requirement Statement
A.1	Flexible and inclusive	Different layers of complexity should allow small- and medium-sized enterprises around the globe to use the Textile and Leather Process and Data Model. Many of the data elements and associated information should be optional to allow “upscaling” to support the growth of a company or to adhere to stricter set of rules.
A.2	Traceability	Tracing the movement of an asset forward and backward through specified stages of the extended supply chain. Traceability for the Textile and Leather sector is more, it is a method to substantiate a claim or statement relating to a product, service or business process based on available information. Tracing must support the “Chain of Custody” models. It should provide the answers on where the assets are in time and why, and especially across organizations.
A.3	Visibility	Knowing in an instant which companies, products and processes the whole supply chain comprises, how they relate to each other and how they perform, especially on sustainability.
A.4	Shareability	Visibility and transparency are obtained through shareability of data, although each business partner must be able to decide whether or not to share possibly sensitive data, such as sustainability inspection results.
A.5	Transparency	Information been made available to all elements of the value chain in a standardized way, which allows common understanding, accessibility, clarity and comparison. European Commission 2017
A.6	Sustainability	The manufacturing, marketing and use of garment, footwear and accessories, and its parts and components, taking into account the environmental, health, human rights and socio-economic impacts, and their continuous improvement through all stages of the product’s life cycle. UNECE 2018. Sustainability information includes also information about the animal, in order to be sure that no endangered species are involved in the production of garments and leather and that animals have been treated well.
A.7	Verification of claims	A sustainability related claim (assertion, statement) is linked to a relevant standard, which can be different for countries. A standard may be part of a compliance policy. The standard refers to metrics (goals or performances) which can have parameters and tolerances.
A.8	Inventory lists	Exchange of chemical inventory lists (CIL stock levels/ZDHC) in order to prove chemical management performance. Exchange of other materials, hides, fabrics, garments stock levels in order to optimize production and minimize waste.
A.9	Unique identifiers	The use of globally unique identifiers, in order to make traceable assets easy findable and to avoid ambiguity, inconsistency and mismatches (unique identifiers are important for production facilities, production units, products, -batches, serialized products, locations, parties, logistic units, shipments, consignments and consignment items).
A.10	Process Certificates	A process certificate can be specified for a production unit, transport movement, production facility, chemical treatment, crop protection treatment, finishing treatment, sustainability characteristic, party, material waste recovery disposal process, transport waste recovery disposal process and obtained due to an inspection.
A.11	Product Certificates	A product certificate can be specified for a product, material, chemical, production unit, production facility, sustainability characteristic, toxicological hazardous material, party, transport waste material and transport waste material component and it can be specified that the certificate was obtained due to an inspection.
A.12	Organization Certificates	An organization certificate can be specified for a production unit, a production facility, a production process, a party, a transport movement, a sustainability characteristic and it can be specified that the certificate was obtained due to an inspection.
A.13	Inspection events	Inspections can be executed for a party (e.g. manufacturer), a location (e.g. warehouse, crop plot), a production facility, production process, a product, a -batch or a transport movement. Inspections can be targeted on sustainability characteristics (aspects).
A.14	Inspection results	Inspection results can be indicated as characteristics, along with applicable standards, methods, instructions, notes and/or attachments. The inspection results may include laboratory results as well. These results may include corrective, preventive or other actions and may lead to obtaining certificates and claims (assertions).
A.15	Product Segregation Mass Balance	Product segregation means an aggregated flow of products that was produced according to the same sustainability standard kept strictly separated from other products. Where product segregation is difficult or nearly impossible to achieve (e.g. for certified and non-certified

Nr.	Subject	Business Requirement Statement
	Book & Claim (Assertion)	commodities such as cotton, green electricity) other methods can be used. In these instances, Mass Balance or Book and Claim systems can be used.
A.16	Consumption information	Keeping record of inputs/outputs in order to compare predefined and actual consumption of material (including energy and water), product or -batches.
A.17	Recycling	Recycling aspects of products and packaging should be possible to be exchanged, including whether or not products should be regarded as waste or recyclable items. The process for material waste recovery and the presence of recycled material can be specified in percentage or weight.
A.18	Product information, including sustainability information	Colour and size are important characteristics within the Textile and Leather sector. The following information entities are relevant: colour, size, colour size range, colour samples, colour method, colour parameter, print method, print parameter, product collection, faults, fault tolerance, quality level, quality parameter, function, print, gender, section (e.g. selvedge), end use group, product group, classification, CITES, animal & plant species, bio based, variants, piece indicator, life-cycle stage, technical characteristics, packaging, markings, packaging instructions, product labels, individual product (serialized), sustainability characteristics and so on.
A.19	Used materials	Material type, material characteristics, used chemicals, applied treatments (including for crop protection), toxicological hazardous material, production and waste materials, materials for colouring and printing, recycled materials in products and/or packaging (in percentage or weights) and material components.
A.20	Production process information	For production machines and/or devices will be used frequently. Inputs/outputs of these machines/devices and related materials (including energy and water), products, -batches, production cycle and operational and requested parameters are exchangeable. The sustainability characteristics of the production process can be specified, along with a sustainability claim (assertion), certificates and so on.
A.21	Transport & related sustainability information	Transport movement consists of delivery information, consignment and consignment item information, cargo details, transport events, transport route, transport services, CO ² emissions, transport means CO ² emissions, transport waste recovery disposal process, and other data such as sustainability characteristics and certificates. In addition, details for logistics units such as packaging, labels, packaging instructions and returnable asset instructions.
A.22	Transaction references	Type of transaction, the related trade line items for specifying products, -batches, materials (including substitutes and substituted items).
A.23	Agricultural Products Information	Information about agricultural products and animals should be included, such as agricultural zone area, crop plot, field crop, crop produce, crop produce batch, certificate, characteristics, crop production process, agricultural application, animal, animal species etc.

261

262 **5.5 Business Entity View**

263 The conceptual data model for traceability and transparency in Textile and Leather value chains is a
 264 structured business view of the key information entities required to support business processes and
 265 record business events in order to support sustainable trade. For effective traceability recording data
 266 regarding the five W's (What, When, Where, When, Why (includes How) is needed. Once traceable
 267 assets can be traced, the relevant additional information, such as for sustainability, will be retrievable.

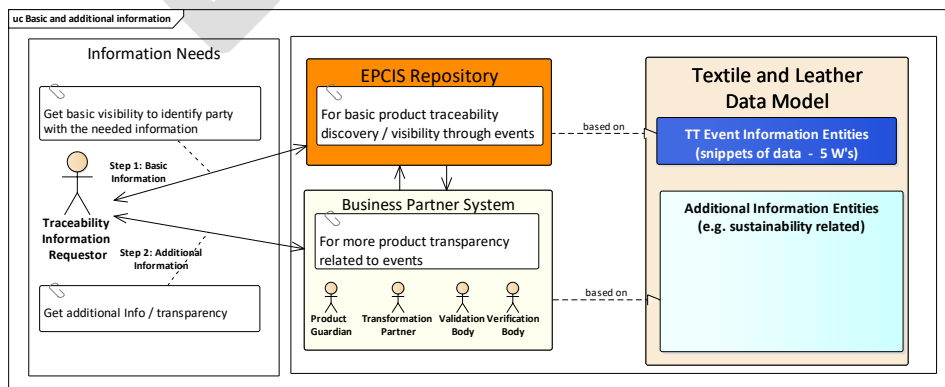
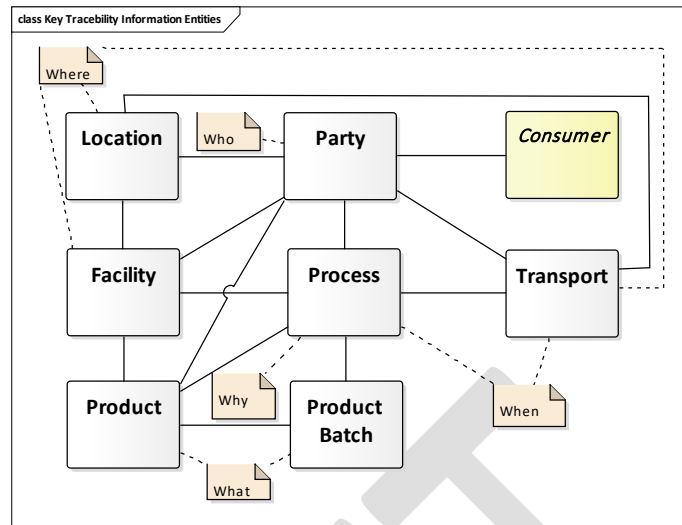


Figure 5-4 Information needs and resources

268

269

270 The Key Traceability Information Entities are listed in below diagram.



271
272 **Figure 5-5 Key Traceability Information Entities Canonical Data Model**

273
274
275

5.6 Layers of complexity

276 The information entities in the Textile & Leather Process and Data Model should support the
277 different layers of complexity (see below). Supporting different layers of complexity allows inclusion
278 of Small- and Medium-sized Enterprises and developing countries into the traceability system which
279 increases political acceptance. It ensures that traceability technology matches the capabilities of the
280 stakeholders. It is open for “upscaling”, i.e. small stakeholders gradually increasing their capacity so
281 they can adhere to stricter sets of rules in the traceability system. For the design of the key
282 information entities different aspects of complexity, mentioned below, are taken into account.

- 283
- 284 • Basic information
 - 285 ○ the usage of optional elements, references and codes is recommended.
 - 286 ○ the granularity of the information depends on the demands of a business partner
287 (producer, trader, regulator, retailer or consumer). For some, a reference to a certificate
288 will be sufficient, other business partners might need detailed information behind the
289 certificate, an inspection report, or traceable asset. The focus will be on achievable
minimum levels of data.
 - 290 • Detailed information
 - 291 ○ Business partners, such as a regulator or auditor may require more detailed (e.g.
292 sustainability related) information in order to verify certificates or assertions (claims).
293 Key Performance Indicators (KPIs) may be requested on a frequent basis by auditors
294 and other relevant business partners. In addition, results of inspections, the used
295 standard evaluation methods and procedures, reference values, etcetera may be
296 requested.
 - 297 ○ Traceability information relies on “event information”. Event recorded data provides
298 vital traceability information on the 5 W’s (Who, What, Where, Why, When).
299 Registration and retrieval of event information permits the creation of an overview of
300 the whole value chain. This may include individual product and batch histories.
 - 301 • Supporting different technologies
 - 302 ○ The information entities have been designed to be technology and syntax independent.
303 As a result, they can be used in modern technological solutions such as Blockchain,

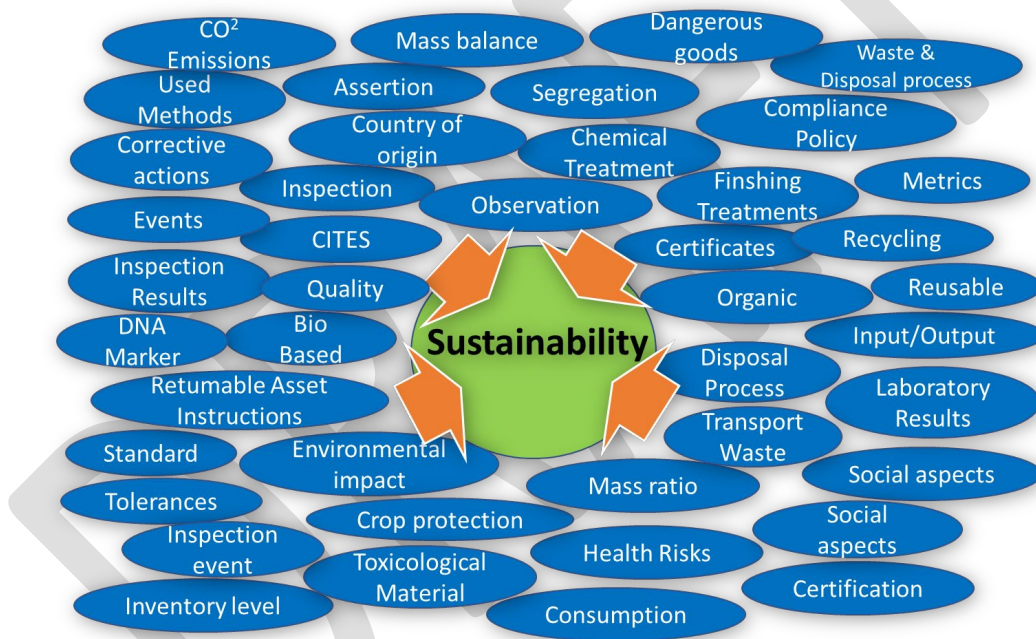
304 EPCIS and API as well as the latest technologies for the identification of relevant
 305 objects.

306
 307 **5.7 Sustainability information**
 308

309 Sustainability information should be collected and analysed on a wide range of sustainability-related
 310 factors, including energy and resource use, CO2 emissions, and supply-chain performance.
 311 Sustainability traditionally has focused on resource-related factors such as materials consumption,
 312 energy use, and water use. Other factors such as operational data (e.g. employee headcount, hours of
 313 operation, production levels, facility productivity) can affect sustainability performance. The
 314 sustainability related data can be regarded as characteristics of a product, an organization/facility or a
 315 process, of which some examples are shown in the figure and tables below.

316 **5.7.1 Sustainability Information Entities**

317 The figure below shows a number of information entities related to sustainability residing in the data
 318 model.



319
 320 **Figure 5-6 Sustainability related data**

321 **5.7.2 Sustainability Matrix**

322 The table below is an example of sustainable aspects for a product, a process and an
 323 organization/facility.

324
 325 **Table 5-3 Sustainable Matrix**

Product-related information	Process-related information	Organization/Facility-related information	Transport-related information
Origin → - Country and/or Region Composition → - Materials components	Process inputs and outputs → - Input volumes/weights	Economic-operator details → - Supplier - Manufacturer - Subcontractor Location →	Economic-operator details → - Transport or freight forwarding company

Product-related information	Process-related information	Organization/Facility-related information	Transport-related information
<ul style="list-style-type: none"> - Product components Technical Specifications → <ul style="list-style-type: none"> - Materials specifications - Product specifications Product identification (IDs) → <ul style="list-style-type: none"> - Individual product/material - Product/material batch - Product/material trade unit Quality → <ul style="list-style-type: none"> - Characteristics - Inspections - Certificates/audit reports (product/materials) Other management information → <ul style="list-style-type: none"> - Cost(s) - Sales data - Surplus or damaged materials/product - Risks Sustainability → <i>See table below on sustainability data</i>	<ul style="list-style-type: none"> - Output volumes/weights Process events occurrence → <ul style="list-style-type: none"> - Data - Time Process identification (IDs) → <ul style="list-style-type: none"> - Process (product) inputs - Process (product) outputs - Type of process - Equipment (machine) - Machine operator Sustainability → <i>See table below on sustainability data</i>	<ul style="list-style-type: none"> - Main production unit(s) - Subordinate production unit(s) Facility & economic-operator identification (IDs) → <ul style="list-style-type: none"> - Economic Operator - Main facility - Subordinate facility Sustainability → <i>See table below on sustainability data</i>	<ul style="list-style-type: none"> - Owner/Operator of the means of transport Location → <ul style="list-style-type: none"> - For picking up logistics units - For delivering logistics units Transportation (IDs) → <ul style="list-style-type: none"> - Logistics Units - Conveyance means (truck, railcar, ship, container if applicable) Sustainability → <i>See table below on sustainability data</i>

326

Sustainability related information ¹		
Environmental	Social	Health & Safety
Inputs (Chemicals/Pesticides) Water consumption and pollution CO2 generated Energy Air pollution	Human resources & Local communities → - Child labour - Forced and compulsory labour - Land use Labour practices-Human development & Social dialogue → - Work & social protection conditions	Health & Safety → - Norms and standards implementation
		Ethics

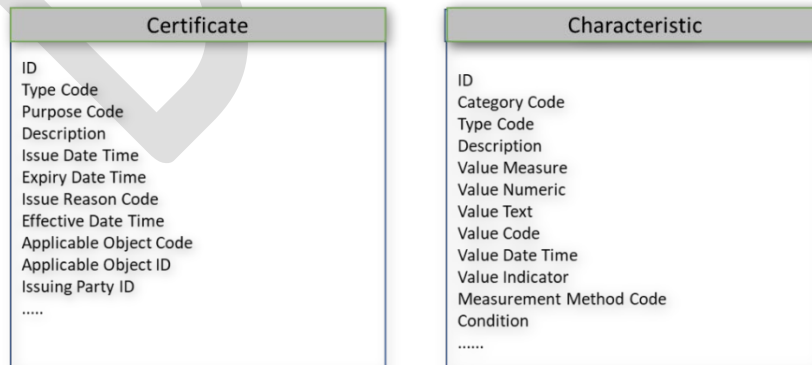
¹ OECD (2018), OECD Due Diligence Guidance for Responsible Supply Chains in the Garment and Footwear Sector; ITC Standards Map (2019); UNEP (2020) draft report for circularity and sustainability in textile value chains (to be issued in September 2020); SA8000® Standard - SAI - Social Accountability International; Sustainable Apparel Coalition (2018); Global Reporting Initiative, Sustainability Reporting Standards (2018), Boston Consulting Group and Global Fashion Agenda (2018); UNECE 2018

Sustainability related information ¹		
Thermal pollution	- Trade unions and collective bargaining - Wages - Working times Employment & Employment conditions → - Sexual harassment - Gender inequality - Discrimination - Homeworkers	Compliance with legislation/regulations
Noise pollution		Anti-bribery/corruption
Soil and land degradation		Permits
Habitat loss		Contracts
Deforestation		
Biodiversity and ecosystem depletion		
Livestock/Animal welfare		
Waste/End-of-life → - Durability - Recyclability - Reusability		
Environmental management standards implementation		
Sustainability Certificates (or Inspection Reports)		
Certificate Type Certificate ID Issue and expiry dates Issuing agency ID (optional: name & address) Standards certified/inspected for Claim and approved or not Additional data		

327

328 **5.7.3 Structuring sustainability information**

329 Certificates and characteristics, such as “*Product Certificates*” and “*Product Characteristics*” are
 330 vital information entities within the Textile and Leather Data Model. Their attributes are shown in the
 331 figure below. Commonly not all attributes will be exchanged in a message. The use case will
 332 determine which ones will be used. The use of certificates and characteristics will create flexibility.
 333 On the other hand, it introduces the need for using code lists to express the type of certificate or
 334 characteristic.



335 **Figure 5-7 Structured Sustainability Data**

336

337

338

339

340

Sustainability aspects have been structured into certificate and characteristic information entities. The example below specifies different sustainability certificates, accompanied with sustainability characteristics.

341 **Product Certificate**
 342 A product certificate may be specified for a material (such as toxicological hazardous materials,
 343 transport waste materials, chemicals), products and -batches. In addition, a product certificate can be
 344 specified on the level of an organization (party), production facility, production unit and obtained due
 345 to the result of an inspection.

346
 347 **Process Certificate**
 348 A process certificate may be specified for a production process, a chemical treatment, a finishing
 349 treatment, a crop protection treatment, a waste disposal process and a transport movement. In
 350 addition, a process certificate can be specified on the level of an organization (party), production
 351 facility, production unit and obtained due to the result of an inspection.

352
 353 **Organization Certificate**
 354 An organization certificate may be specified for an organization (party), production facility,
 355 production unit, production process, transport movement and obtained due to the result of an
 356 inspection.
 357 In the information entities below the sustainability related information entities have been listed.

Party/Organization	Production Facility	Production Process	Product
Product Certificates Process Certificates Organization Certificates Sustainability Characteristics Sustainability Claim Sustainability Inspection	Product Certificates Process Certificates Organization Certificates Sustainability Characteristics Sustainability Claim Sustainability Inspection	Product Certificates Process Certificates Organization Certificates Sustainability Characteristics Sustainability Claim Sustainability Inspection ...	Product Certificates Sustainability Characteristics Sustainability Claim Sustainability Inspection
Product Batch	Material	Transport Movement	Referenced Location
Product Batch Certificates Sustainability Characteristics Sustainability Claim Sustainability Inspection	Product Certificates Sustainability Characteristics Sustainability Claim Sustainability Inspection Process Certificates .. Organization Certificates Sustainability Characteristics Sustainability Claim Sustainability Inspection Sustainability Characteristics Sustainability Claim Sustainability Inspection

358
 359 **Figure 5-8 Key traceability entities and sustainability information**

360 **5.7.4 Characteristics, Parameters and Tolerances**

361 To avoid numerous information entities which are “similar but different”, common with a vertical
 362 approach, the use of the following three generic information entities are very prominent throughout
 363 the Textile and Leather Data Model.

Characteristic	Parameter	Tolerances
ID Type Code Description Value Measure Value Numeric Value Text Value Code Value Date Time Value Indicator Measurement Method Code Condition	ID Type Code Type Text Description Name Value Text Value Measure Value Allowed Indicator Status Code Status Value ..	Information Minus Quantity Surplus Quantity Minus Percent Surplus Percent Margin Numeric Margin Percent

364
 365 **Figure 5-9 Characteristics, Parameters, Tolerances**

366

367 Within the Textile & Leather Process and Data Model, the key information entities may have
 368 different characteristics, e.g. *product* characteristics, *sustainability* characteristics, *technical*
 369 characteristics. In general, a characteristic has a type and value, either coded or as text. For the
 370 Textile and Leather sector, in addition to *sustainability* characteristics, *product* and *technical*
 371 characteristics, are important too. The technical characteristics could be divided into different
 372 categories such as colour fastness, construction, dimension stability. In other words, a category and
 373 type code (e.g. colour fastness) will provide the semantics for a technical characteristic. An optional
 374 parameter may limit the scope of the characteristic. A tolerance may be expressed for a characteristic
 375 value and/or parameter value.

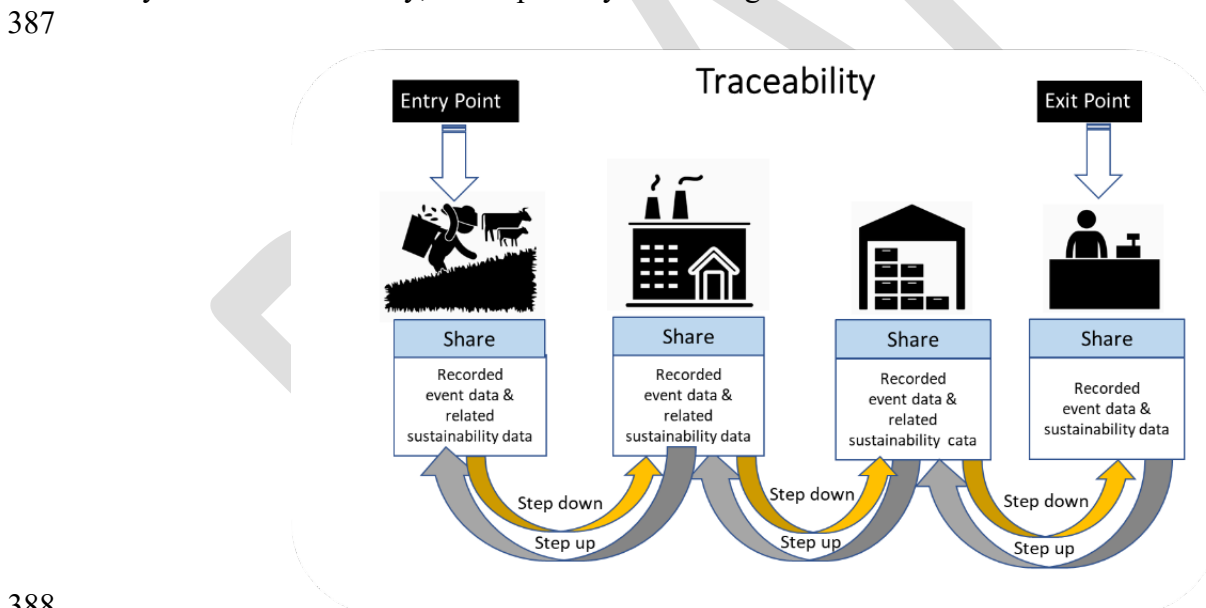
376
 377 As an example, in the table below is shown the colour fastness characteristic regarding dry cleaning
 378 at 40 degrees with a 5% minus deviation tolerance (i.e. colour fastness of 65-70%).

379
 380 **Table 5-4 Example of a Technical Characteristic**

Characteristic	Parameter		Tolerance		
Category	Colour Fastness				
Type	Dry Cleaning	Type	Temperature	Type	Deviation
Value	70%	Value	40 Degrees	Minus %	5

381 382 5.8 Traceability

383
 384 Traceability is tracing the movement of an asset forward and backward through specified stages of
 385 the extended supply chain. Visibility data provides details about traceable assets regarding where
 386 they are in time and why, and especially *across* organizations.



388
 389 **Figure 5-10 Traceability across organization in the value chain**

390 391 5.9 Traceable assets

392
 393 A traceable asset may be a material, a product/-batch, either on class level (type) or instance level
 394 (individual, serialized). During the transformation process, it is essential to record the identifiers of
 395 the *inputs* and *output*. In other words, of which materials, products are inputs to the product batches
 396 which are produced. A traceability system is primarily based on product identification and
 397 segregation.

398

Traceable Assets Transformations and IDs

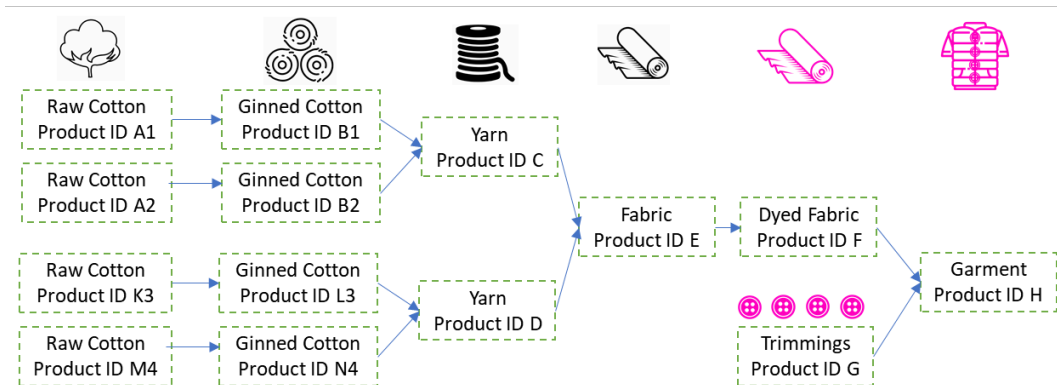


Figure 5-11 Traceable assets and IDs

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In addition, the link between the traceable asset and the logistics unit is important. Traceable assets may be aggregated or disaggregated due to logistics processes, such as placing products on or from logistics units to other units. The term *Traceable Asset*, will be used to denote any item, such as an object, a product or other traded item or a service that needs to be tracked across the supply chain. Traceable assets and their logistics units make use of unique identifiers.

Logistic Units

Aggregation/Disaggregation and IDs



Figure 5-12 Examples of logistic units

407
408
409
410
411
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413
414

The focus of the traceability framework is to trace the asset, no matter if it is packed into a logistic unit or not. The information entities found within the Textile & Leather Process and Data Model are reusable within the context of other technologies such as EPCIS² (Electronic Product Code Information Services), Blockchain or API (Application Programming Interface).

5.10 Unique identifiers (ISO/IEC 15459)

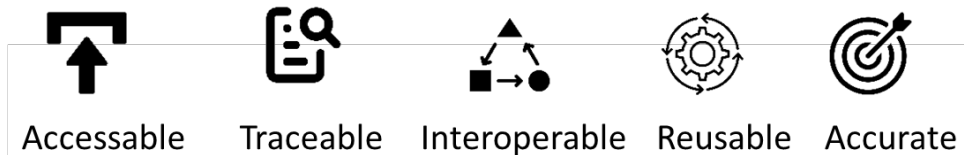
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424

ISO/IEC 15459 (part 3) specifies a unique, non-significant, identifier (UID) for products and/or items, represented in a barcode label or other media attached to or incorporated into the item. The UID shall start with a string of characters, the *issuing agency* code, assigned to the issuing agency by a registration authority. There are different agencies which issue UIDs. One of them is GS1. Different industries, including the Textile, Retail and Transport are using GS1 standards for identification of shipments, trade items (products or individual products) and logistic units. This standard allows business partners to keep their internal coding systems. But, when applicable, these business partners need to translate their internal identifiers into these unique identifiers when sending

² The UN/CEFACT EPCIS based information entities are aligned with the ISO/IEC 19987 specifications, published by the ISO/IEC JTC1/SC31. These specifications fit with the ISO 18000-63 specifications for the traceability information system, repository and network structures.

425 or receiving data from their business partners. In principle, their internal identifier will get an agency
 426 code and company code in front and a check digit at the end. In some way comparable to the
 427 transformation of a local bank's account number to an IBAN bank account number. The ISO/IEC
 428 standard enables data collection via barcode formats, different kind of labels and EPC/RFID and
 429 allows users to share information via the EPCIS traceability system and different means for
 430 electronic trade.

Reasons for UIDs



431
 432 **Figure 5-13 reasons for Unique Identifiers**

433
 434 Unique identifiers should be assigned to:

- 435 • Product type level *materials, products / components*
- 436 • Product batch/lot level *group of products*
- 437 • Product Instance level *instances of products, -batches*
- 438 • Logistics units level *transport equipment – container, pallet etc*
- 439 • Shipment level *shipments*
- 440 • Consignment level *consignments*
- 441 • Party level *organization, company, facility etc*
- 442 • Location level *production unit, warehouse, crop plot*

443 444 5.11 Code Lists

445
 446 The Textile & Leather Process and Data Model reuses existing standardized and harmonized code
 447 lists as much as possible. A number of code lists are created by the UNECE, ISO, E-Biz and others.
 448 These code lists could be linked to a data element or used as a reference. Within message
 449 implementation guidelines, the use of particular code lists for which data elements will be described.

450 451 5.12 Product Segregation

452 In advanced supply chains it is possible to implement a traceability system based on product
 453 identification and segregation. This requires a high level of organization in the supply chain, i.e. assets
 454 can be tagged, traced and the information can be made available in electronic format. These systems
 455 will use *Product Segregation* which is the preferred model for a traceability system. Product
 456 Segregation can be implemented both for bulk commodities and for identity preservation.

457 The objective is:

- 458 • Products produced according to the same sustainability standard are strictly separated from
 459 other products.
- 460 • Bulk commodity, which is certified, is strictly separated from non-certified materials while at
 461 the same time allowing the mixing of certified materials from different producers.
- 462 • Identity preservation requires segregation of the certified material from the non-certified
 463 materials throughout the supply chain to provide traceability from a specific source (for
 464 example a farm) to the final consumers.

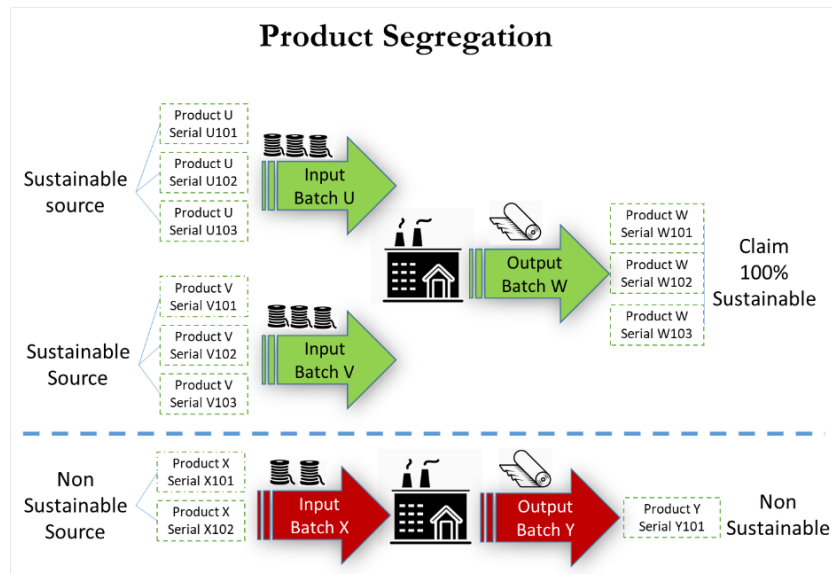


Figure 5-14 Segregation of products and raw materials

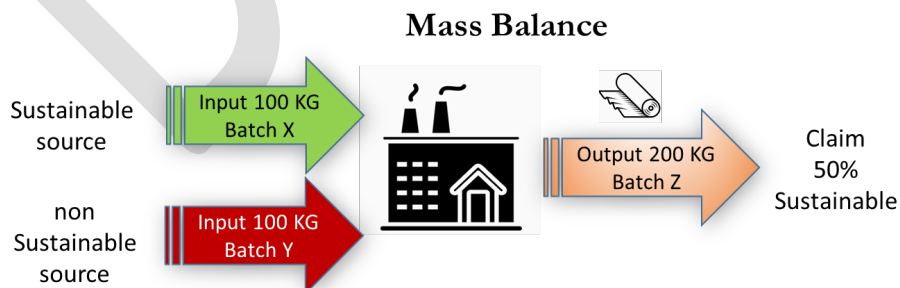
465
466

467 A Product Segregation approach requires a well-defined administration and process. If not, then
468 assets with different sustainability characteristics are processed and merged with other assets. Where
469 Product Segregation is difficult or nearly impossible to achieve e.g. for certified and non-certified
470 commodities such as cotton, green electricity other methods can be used. In these instances, Mass
471 Balance or Book and Claim (Assertion) models can be used. However, even implementing a Mass
472 Balance model or a Book and Claim (Assertion) model requires stringent technical and
473 organizational requirements.

474

475 5.13 Mass Balance

476 It is not always feasible to segregate sustainable and non-sustainable products and materials from the
477 perspective of efficiency and/or production processes. In the *Mass-Balance* model sustainable and non-
478 sustainable sources are mixed. As these assets move through the supply chain an exact account is kept
479 about their volume/weight ratios. The purpose is to guarantee that the amount of sustainable content
480 claimed is equal to the amount of sustainable products or materials used. Like the Product Segregation
481 model, it requires a well-defined administration and process design in order to implement a Mass
482 Balance model.



483

484

Figure 5-15 Mass Balance

485

5.14 Book and Claim (Assertion)

486 If both Product Segregation and the Mass Balance models are impossible to implement, a Book &
487 Claim model can be applied. Where sustainable and non-sustainable sources are mixed without
488 tracking their relative volumes, the right to claim sustainable sourcing is traded in the form of
489 sustainability certificates. A central authority monitors the sustainability claims by brands and retailers

490 and compares these with the volumes/weights specified on certificates issued and traded. In the figure
 491 below, a sustainability certificate is traded in order to claim a 50% sustainable product. This model
 492 commonly used for commodities such as green electricity.

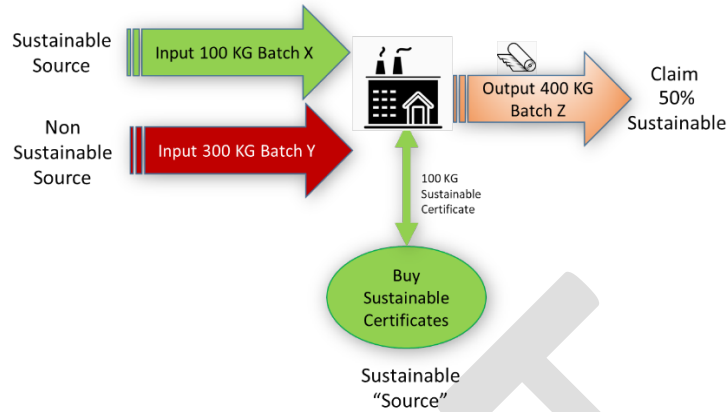


Figure 5-16 Book and Claim (Assertion)

493
 494
 495
 496

5.15 Visibility

497 The Textile & Leather Process and Data Model supports traceability and transparency. Each business
 498 partner in the value chain should record and provide the key data elements answering the 5 W's (What,
 499 When, Where, Why, When). Once traceable assets can be traced, the relevant sustainability information
 500 behind these traceable assets are retrievable, when business partners make their sustainability data
 501 available when requested.

Recording Data

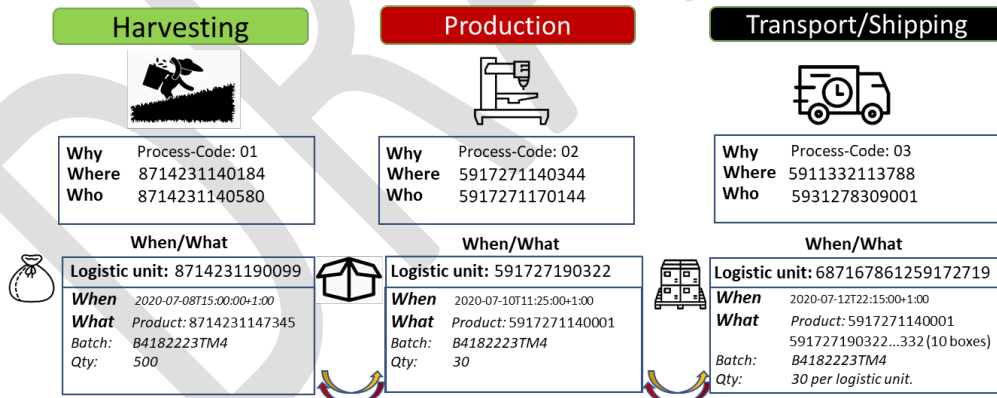


Figure 5-17 Event Recording

502
 503

5.15.1 Sharing Data

505 The information about significant events and sustainability should be made exchangeable between
 506 business partners and regulators within the value chain in different ways.

507 Differentiate between document equivalent and business process driven snippets

- 508 • Traditional Electronic Data Exchange (EDI)
- 509 • Process-driven data exchange snippets
- 510 • Electronic Product Code Information System (EPCIS - ISO/IEC 19987)
- 511 • Blockchain (DLT)

- Application Programming Interface (API)

5.15.1.1 Traditional Electronic Data Exchange (EDI)

Traditional Electronic Data Exchange (EDI) is fundamentally based on a computer-to-computer interchange of strictly formatted messages that represent documents. EDI implies a sequence of messages between two parties, either of whom may serve as originator or recipient.

From the Textile and Leather Process & Data Model different business documents (messages) can be derived to serve a particular purpose, such as the exchange of data regarding an inspection and sustainability. A vast number of supply-chain and transport related messages have been already created by UN/CEFACT, such as for the Supply Chain Reference Data Model (SCRDM) for despatching, receiving, ordering, invoicing, forecasting etcetera and the Multi Modal Transport Reference Data Model (MMT RDM) for logistics, transporting, declaring consignments etcetera.

Within a separate Textile and Leather Business Requirement Specification (BRS) any necessary use cases and data exchange structures (CCBDA based messages) will be described.

Today new requirements regarding the exchange of data have emerged. The reason for this is often the need for instant, trustful, shareable and light weight information. Assumably, a hybrid form of document-oriented information exchange and fragmented, on demand information will exist.

5.15.1.2 Electronic Product Code Information System (EPCIS)

As there are different options for achieving traceability and transparency, the key issue will be how to share the information and how to retrieve information backward and forward within the supply chain instantly and effectively. Forwarding or retrieving information from a step forward or backward (traditional way) is an option, but is not very efficient for getting an overview across organization and across supply chain stages. The EPCIS standard, incorporated in the Textile and Leather Process & Data Model, consist of a few information entities to be exchanged to a central EPCIS based repository for instant sharing and overview across organizations within the supply-chain. Additional information, such as contributing to more transparency may be exchanged using traditional EDI or using another technology such as API.

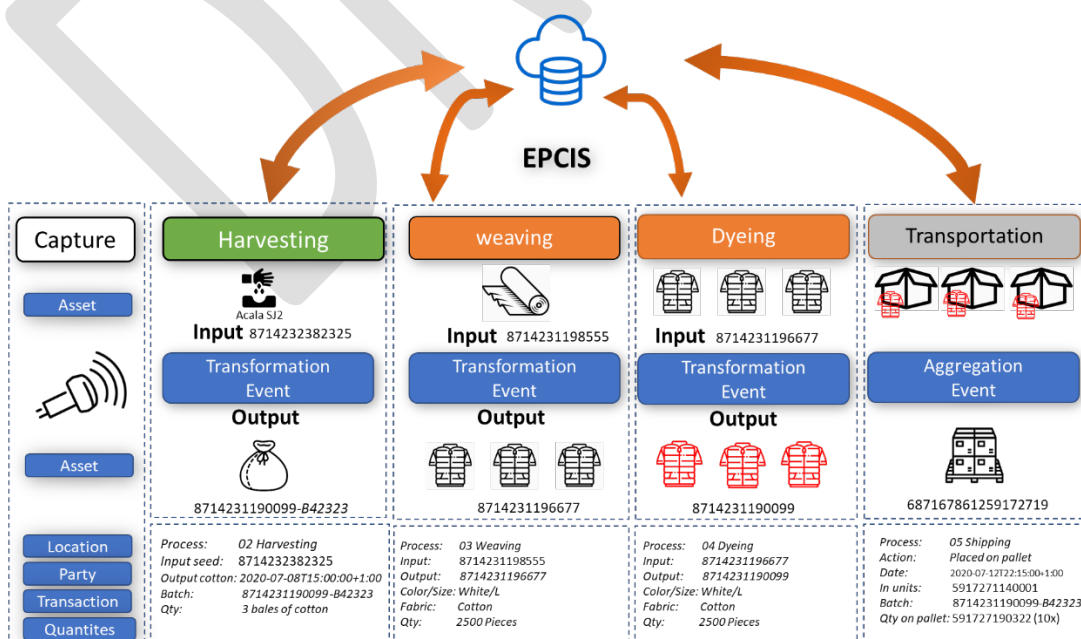


Figure 5-18 EPCIS for traceability, visibility and sharing

540 Important for a EPCIS traceability solution is identifying the relevant events, capturing and recording
541 event data, identifying the relevant processes and activities. A *Chain of Custody/Ownership* can be
542 created by tracing all business partners that had physical possession of the asset. By this, it becomes
543 possible to validate the origin and pedigree of an asset.

544 **5.15.1.3 Blockchain (DLT)**

545 Blockchain or Distributed Ledger Technology (DLT) could become one of the components of a
546 broader traceability system. It is different to traditional electronic data exchange (EDI) or EPCIS.
547 Blockchain is not a business application. It's part of a business application. That's why the term
548 *blockchain-based application* is often used. Blockchains provide a distributed ledger that registers
549 transactions in an immutable, time-ordered manner. In simple words, they provide proof of
550 transactions that have happened and that the data have not been altered. Like the EPCIS solution,
551 events are to be captured and recorded. Retrieving data is done through a cryptographic hash of the
552 data and a pointer to off-chain data.

553 **5.15.1.4 Application Programming Interface (API)**

554 An API is a set of functions that allows applications to access data and to interact with external
555 software components, operating systems, or microservices. Standards organisations such as
556 UN/CEFACT and others have provided global leadership in electronic data interchange (EDI)
557 standards for many decades through high quality outputs such as UN/EDIFACT and XML Schema.
558 The vast majority of electronic international trade transactions today are implemented using these
559 EDI standards. The rise of web platforms that exchange data via RESTful JSON APIs presents a new
560 paradigm for B2B data exchange.

561 The UN/CCL and Reference Data Models are currently published in CSV, XML, PDF or HTML
562 formats. UN/CEFACT is currently defining the naming and design rules for consistent publishing of
563 Reference Data Models and code lists as JSON-LD vocabularies. This will make UN/CEFACT
564 semantics accessible to and consumable by web developers. APIs are not the solution for sharing data
565 regarding traceability and transparency but can complement a traceability system to support the
566 retrieval of supporting sustainability data.

567 For all *Sharing Data* solutions supporting traceability and visibility, standardised data structures
568 (inside CCBDA Data Models) and standardized business data exchange structures are important.
569
570
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575

576 6 Business Choreography View

577 The details regarding the processes and activities within the Textile and Leather value chains are
578 documented in detail within separate published documents³.

579

580 6.1 Textile Value Chain

581

582 For the production of textiles, the fibres which are used can be grouped into four main categories:

- 583 • Natural plant fibres
- 584 • Natural animal-based fibres
- 585 • Man-made cellulose-based fibres
- 586 • Man-made synthetic fibres

587

588 When the fibre has been harvested or produced the yarn production starts, spinning the fibres into a
589 yarn (with the exception of fibres used for non-woven fabric⁴). The core of textile manufacture is the
590 fabric production. Fabrics can be created in many ways, such as weaving, knitting or the production
591 of non-woven fabrics. Various treatment processes can be carried out on fibres, yarns or fabrics.

592 Dyeing, printing and other finishing processes can be done in-house or by subcontractors and take
593 place during a number of other processes, for example before or after spinning, after weaving, or
594 during or after garment production. Finishing is the process of adding special technical characteristics
595 to the finished fabric. When the fabric has the desired colour and properties, it is manufactured into
596 finished products such as sweaters, jeans, shoes or other special items like carpets, furniture or car
597 seats. This process includes activities such as cutting, sewing and the addition of buttons and zippers,
598 etc.

599

600 The following use-case diagram for the textile value chain has been separated into parts 1 and 2, in
601 order to improve its readability. They show the flow of processes within the textile value chain and
602 the participating actors.

603

- 604 • The oval descriptions running down the centre of the diagram list **the major processes**. Not
605 all processes will necessarily occur in the sequence shown. In particular, process 5 (Product
606 design and prototyping) may occur earlier and process 3 (Finishing processes i.e. dyeing,
607 printing, bleaching, washing and other finishing), occurs multiple times, before, during and
608 after other processes.
- 609 • Running down the left-hand side of these process ovals are **the actors who initiate processes**.
- 610 • The actors that run down the right-hand side are **service/product suppliers** that undertake
611 processes initiated by the actors on the left.

612

613 Occasionally, an actor participates on both sides, although they are only shown on one. For example,
614 an Early-stage wool processor might call upon a Finishing subcontractor.

615

616

617

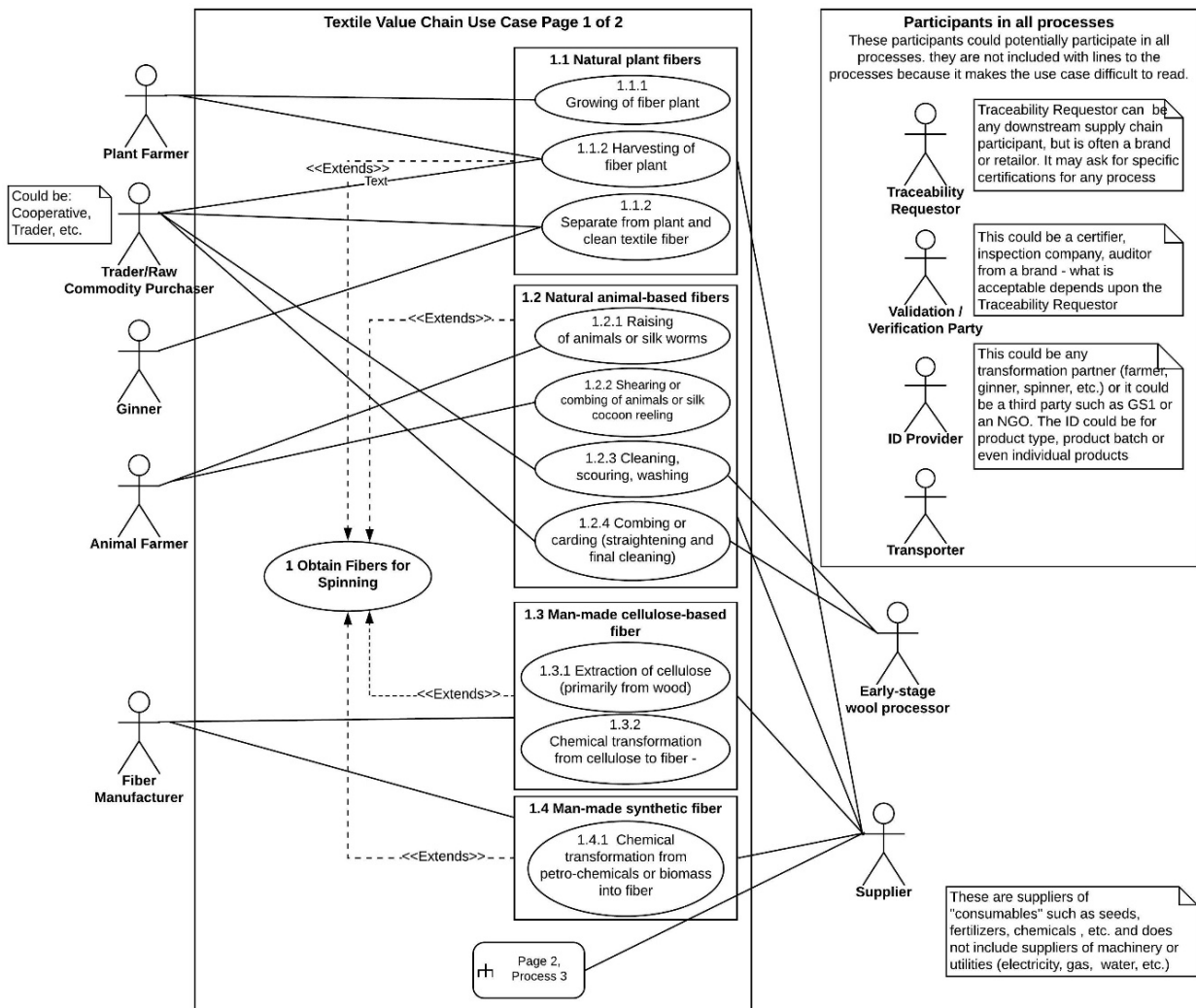
³ For the Leather value chain processes: Report 1 - Leather Value Chain Processes and Actors and for the Textile value chain:

⁴ “Nonwoven fabrics are broadly defined as sheet or web structures bonded together by entangling fiber or filaments (and by perforating films) mechanically, thermally, or chemically. They are flat, porous sheets that are made directly from separate fibers or from molten plastic or plastic film. They are not made by weaving or knitting and do not require converting the fibers to yarn.” <https://www.india.org/about-nonwovens/> (accessed 25-10-2020)

- 618 • In addition, there are some actors who can, but do not always, participate in all of the processes,
 619 such as the logistics service provider (transporter).
 620
- 621 • To simplify the diagrams, those actors that could participate in all processes have been placed
 622 in a separate box in the upper right-hand corner. If they had been included in the main diagram
 623 the Traceability Requestor would have been on the left-hand side and the remaining three actors
 624 on the right-hand side.

625 **6.1.1 Use case Fibre production**

626 This use-case diagram shows the various processes that are needed to obtain fibre for either spinning
 627 or the production of non-woven fabrics. These are very different depending upon which of the four
 628 sources of fibres (listed above) is being used.
 629

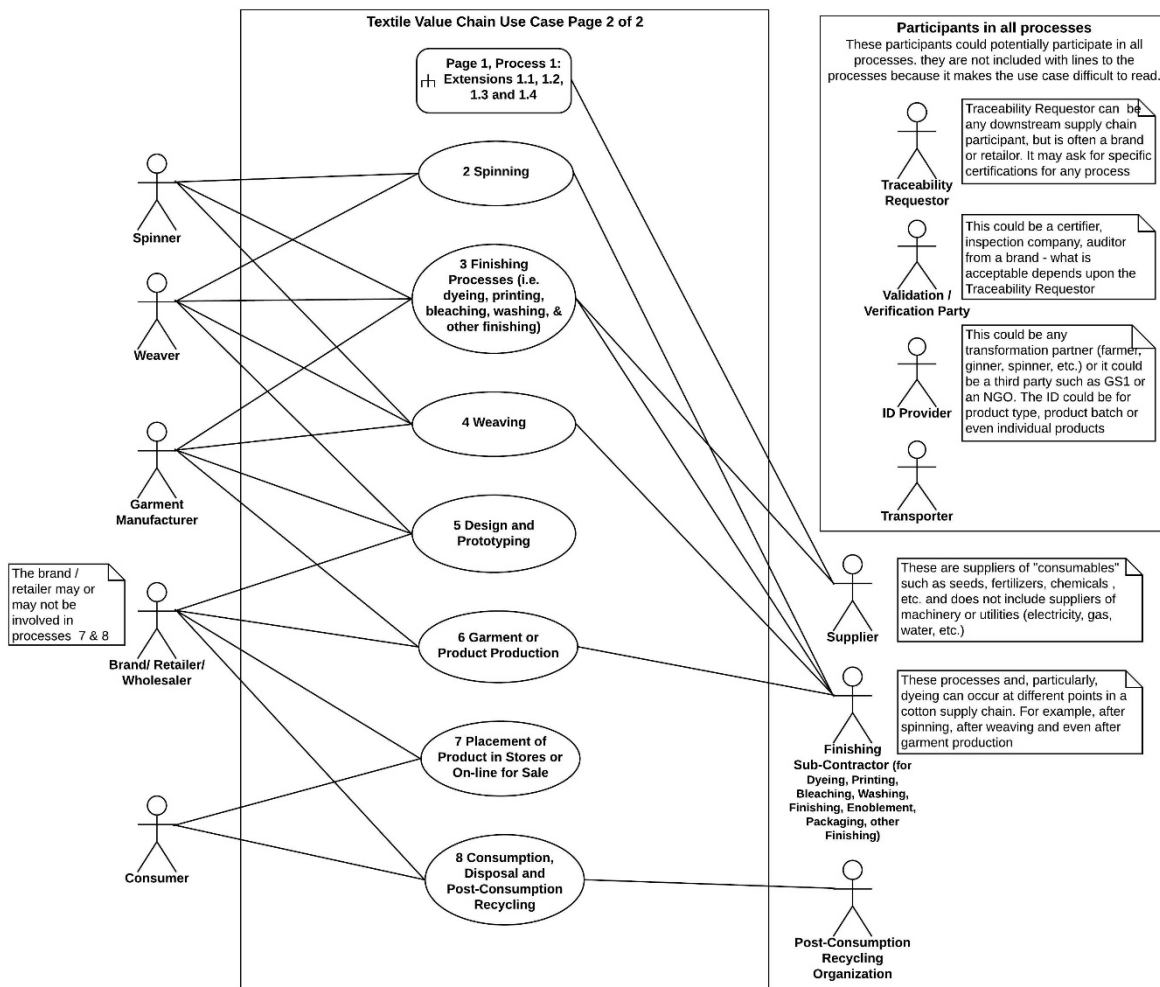


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631 **6.1.2 Use case from Spinning to Recycling**

632 This second diagram shows the processes from spinning through post-consumer disposal and recycling
 633 – these being all similar, regardless of the fibre source.

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6.2 Leather Value Chain

A brief overview of the processes and actors within the leather value chain are provided with two use-case diagrams showing two types of identified value chains:

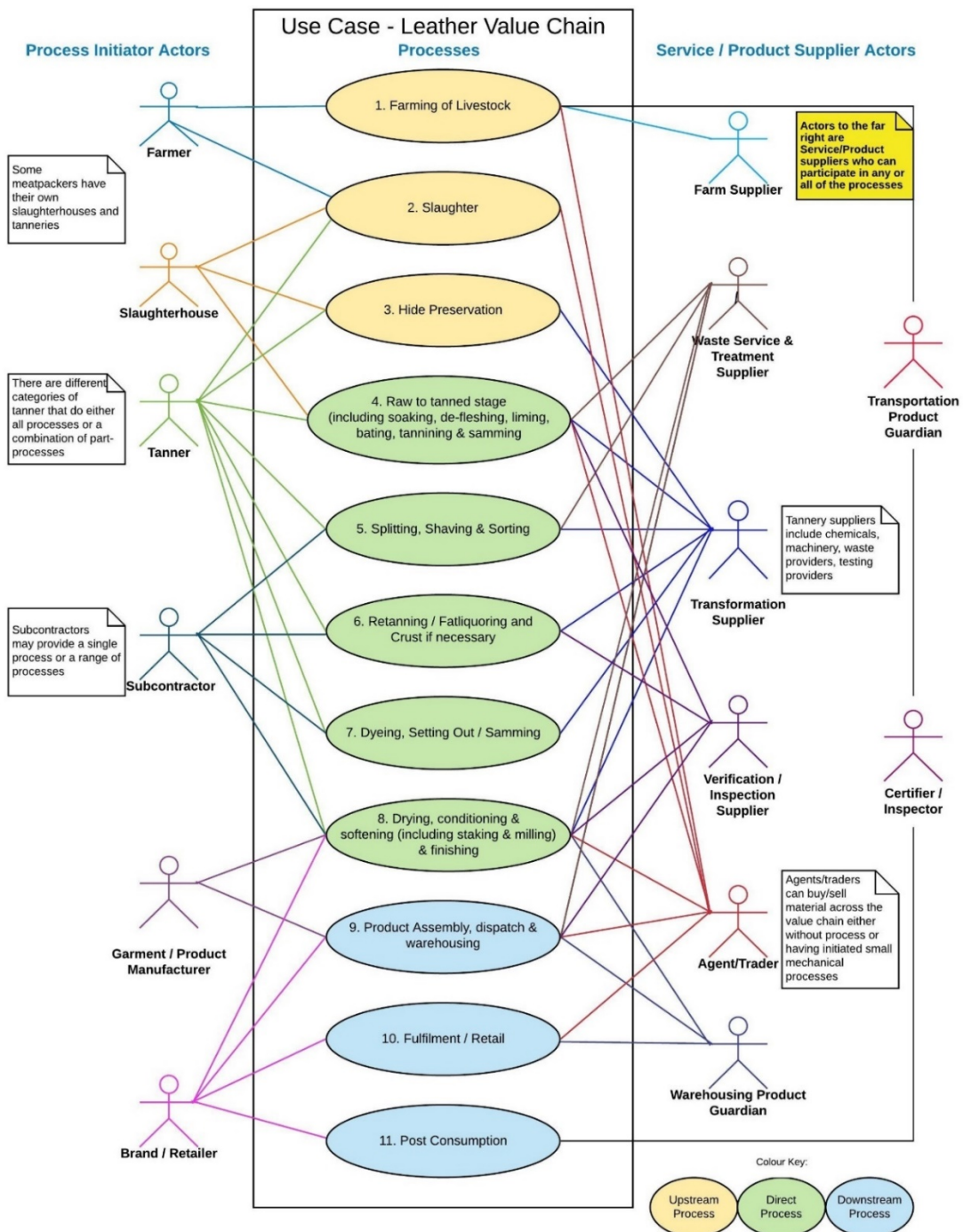
- A complex value chain (livestock leathers)
 - The leather value chain for livestock hides and skins can be complex because leather manufacturers (tanneries) can provide different sets of production processes. Some tanneries perform the entire transformation process from the raw hide/skin through to the finished material while others will only perform a part of the process. This results in a range of “supporting” actors that may vary from one value chain to another, even for the same product.
- A controlled value chain (exotic leathers)
 - A value chain where products, such as exotic skins are more likely to be managed from farm to product. For example, some luxury brands may own the farms, slaughtering facilities and tanneries for exotic leather production. Due to the increased consumer sensitivity and regulatory requirements when manufacturing leather from exotics, luxury brands are under stronger pressure to provide clearer mapping of value chains and tighter control. However, it should be recognised that good value chain mapping is also demonstrated by tanneries working with livestock hides/skins.

658 The following use case diagrams show the flow of interactions within the leather value chains. The
 659 oval descriptions running down the centre of the diagram list the major processes.

- 660
- 661 • Left-hand side shows the actors who initiate processes.
 - 662 • Right-hand side shows the actors who are the service providers/product suppliers that undertake
 663 processes initiated by the actors on the left.
 - 664 • “Both sides” actors are those who participate on both sides, although they are only shown on
 one, with an explanatory note.

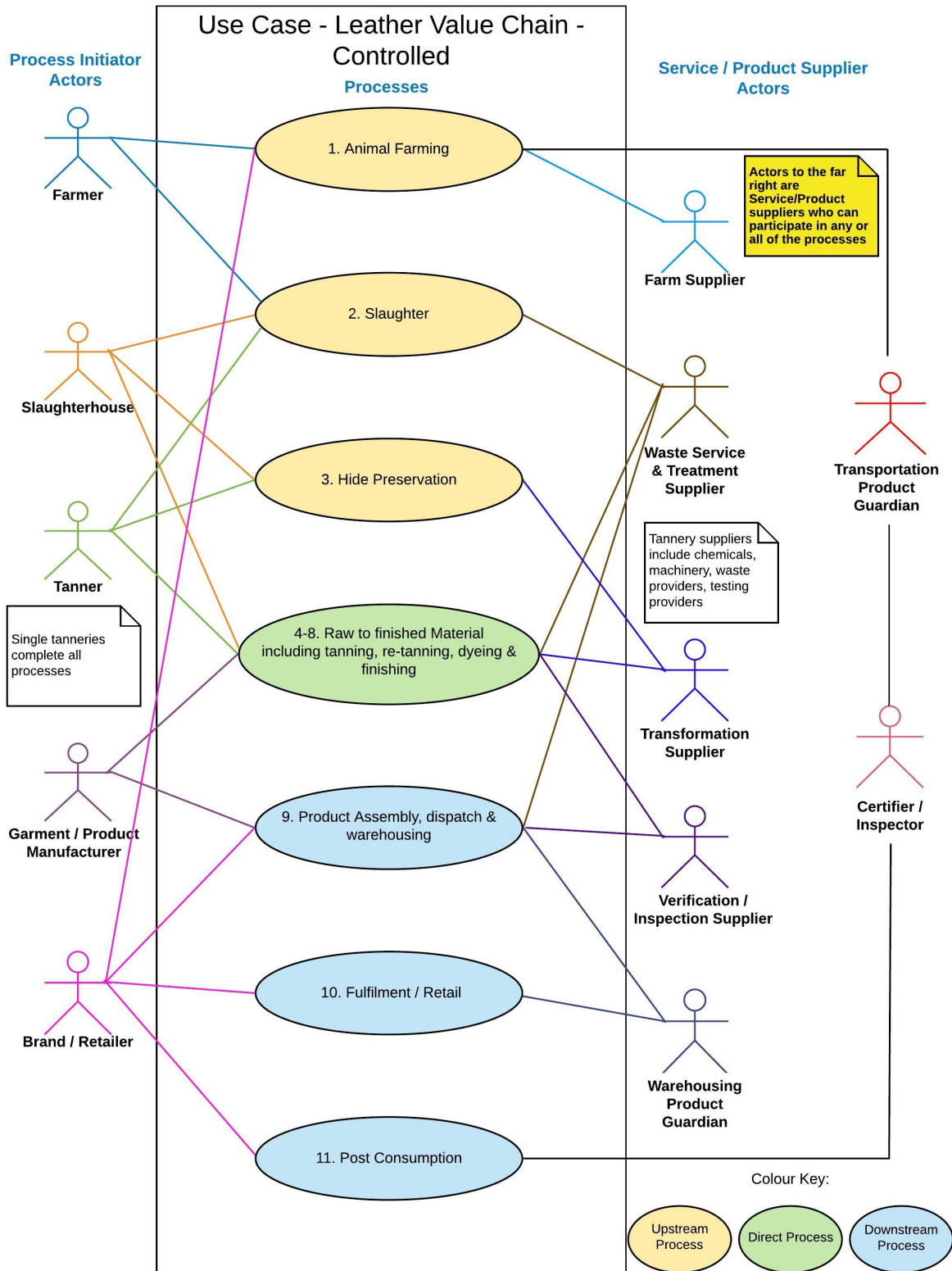
665 **6.2.1 Use case Complex Leather Value Chain (livestock leathers)**

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668 **6.2.2 Use case Controlled Leather Value Chain (exotic leathers)**



669
670 Note:

- 671 • Not all processes will necessarily occur in the sequence shown and some processes may occur
- 672 more than once. This is an illustrative example given that there are many varied value chain
- 673 models within the leather industry. The process groupings in this example show where possible
- 674 transfers of ownership or production could take place (but do not always).

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- Upstream Processes are those processes that relate to the raw material production (i.e. farming, slaughter and preservation)
 - Direct Processes are those processes that are directly under the control and influence of the tanners / leather manufacturers (i.e. the physical transformation activities from raw hides/skins to finished leather)
 - Downstream Processes are those processes that are conducted post-leather manufacture i.e. product manufacturing, product sale, etc.)

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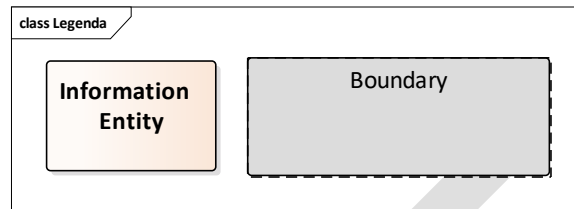
686 7 Business Information View

687 7.1 Canonical Data Models

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689 In this chapter the canonical models (simplified models) for the key information entities of a
690 traceability system are described. Not all information entities are listed in the diagrams for clarity
691 reasons. More details can be found in Annex I.

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693 **Figure 7-1 Diagram legend**

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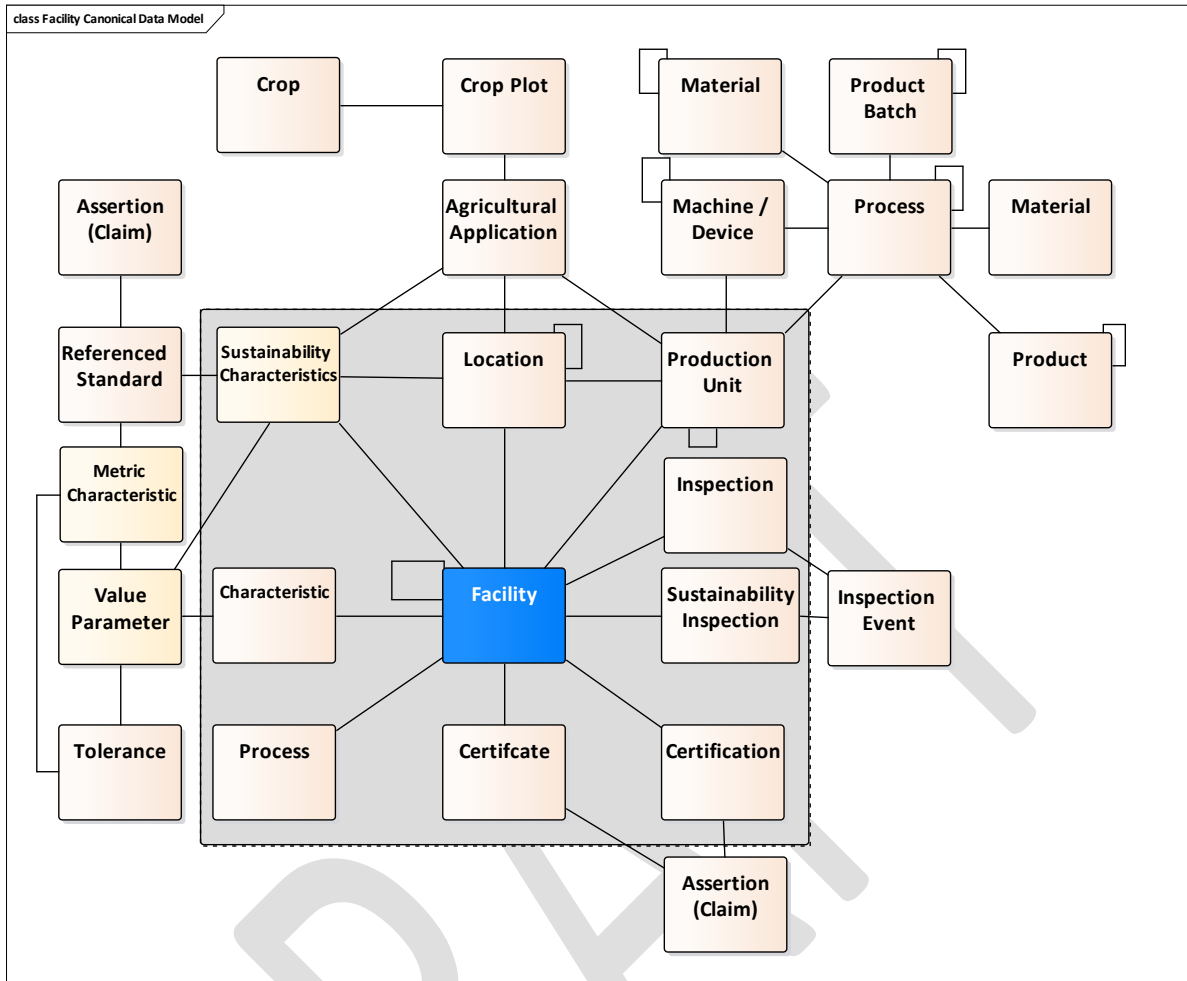
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697 The objective of the boundary within the diagrams is to emphasize the direct related information
698 entities of the canonical data model entity. Not all information entities related to those *direct related*
699 information entities have been presented in the diagrams because of the number of associations that
700 exists. All associations of an entity are listed in the embedded spreadsheet file in Annex I. Business
701 Information Entities in Detail.

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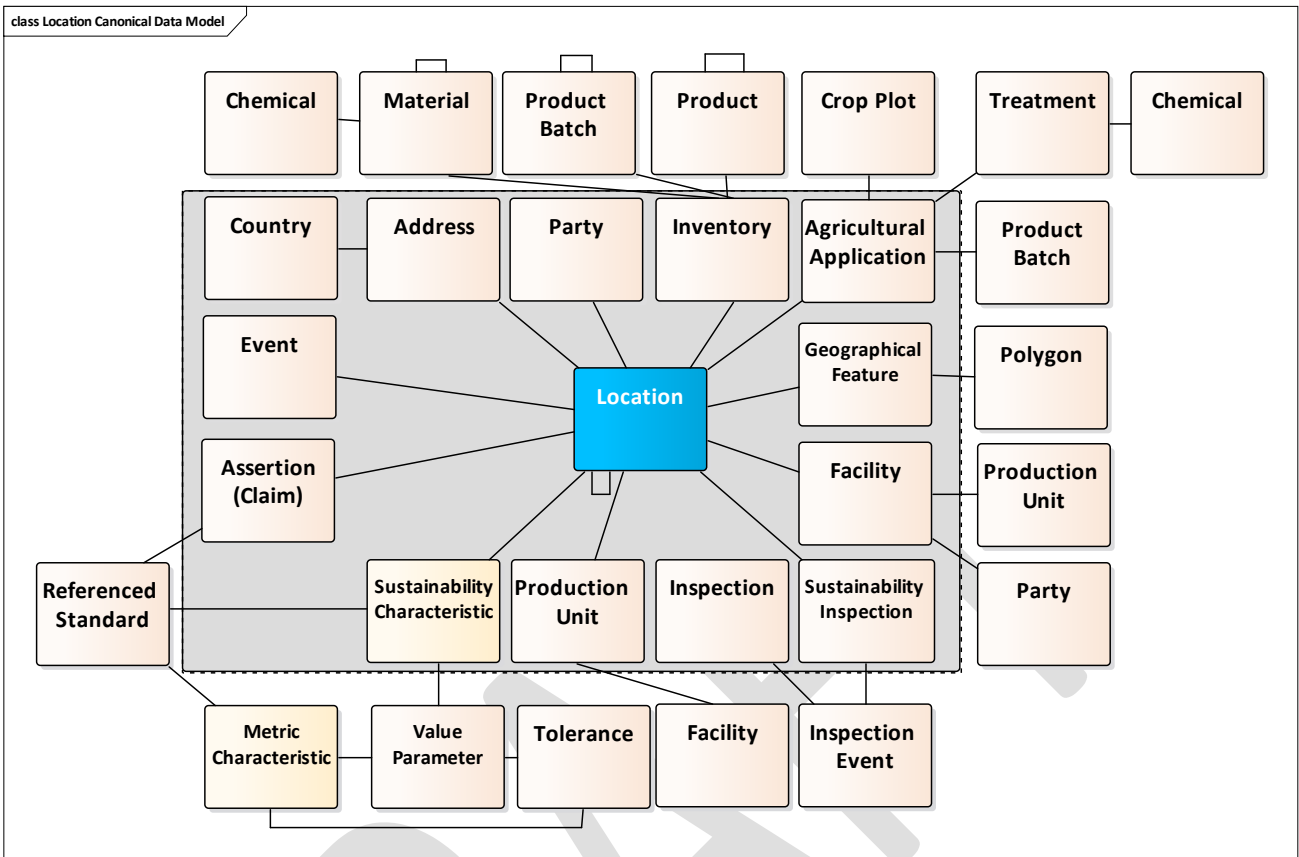
702 **7.1.1 Facility Canonical Data Model**



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705 **7.1.2 Location Canonical Data Model**

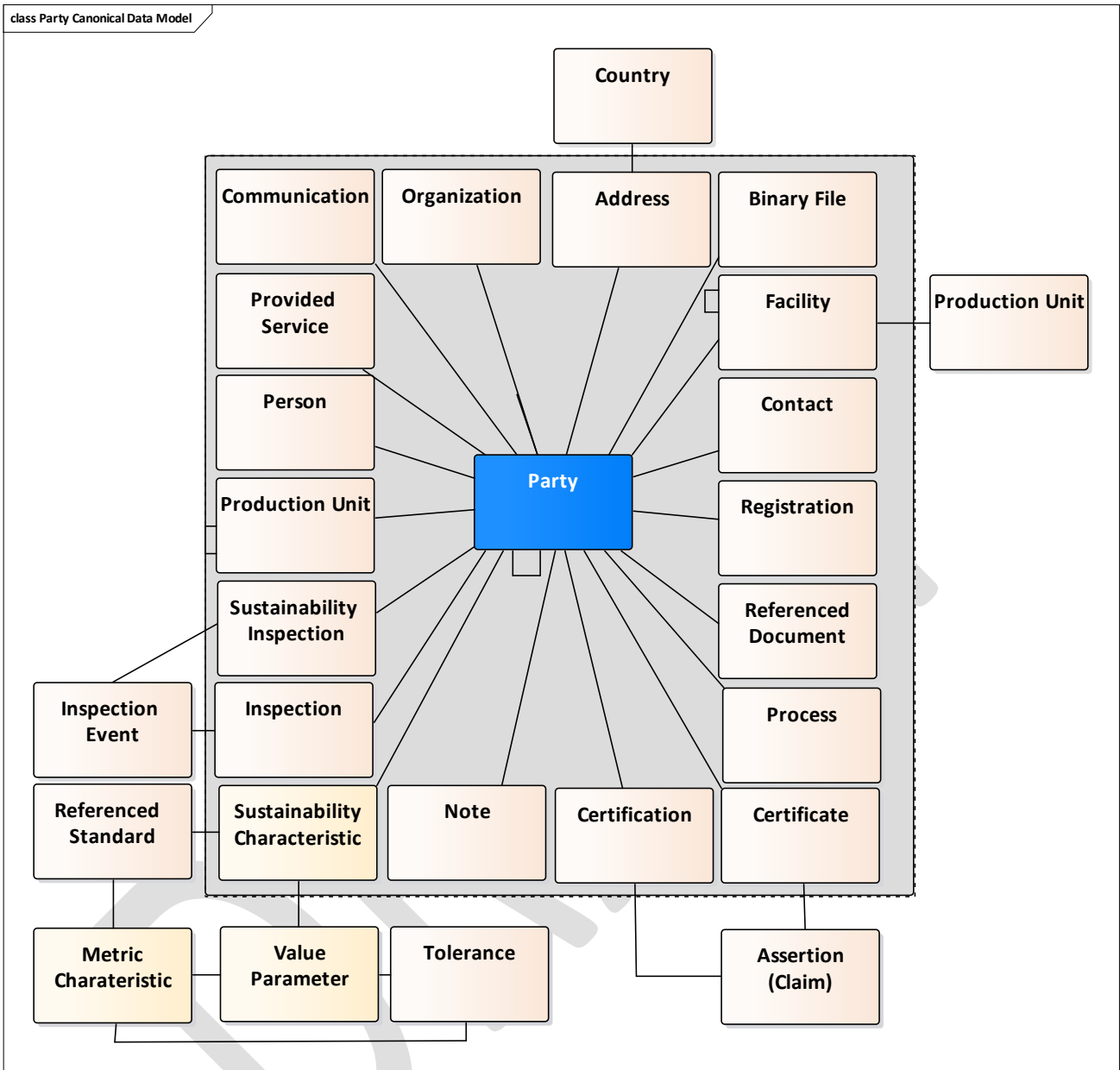
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709 **7.1.3 Party Canonical Data Model**

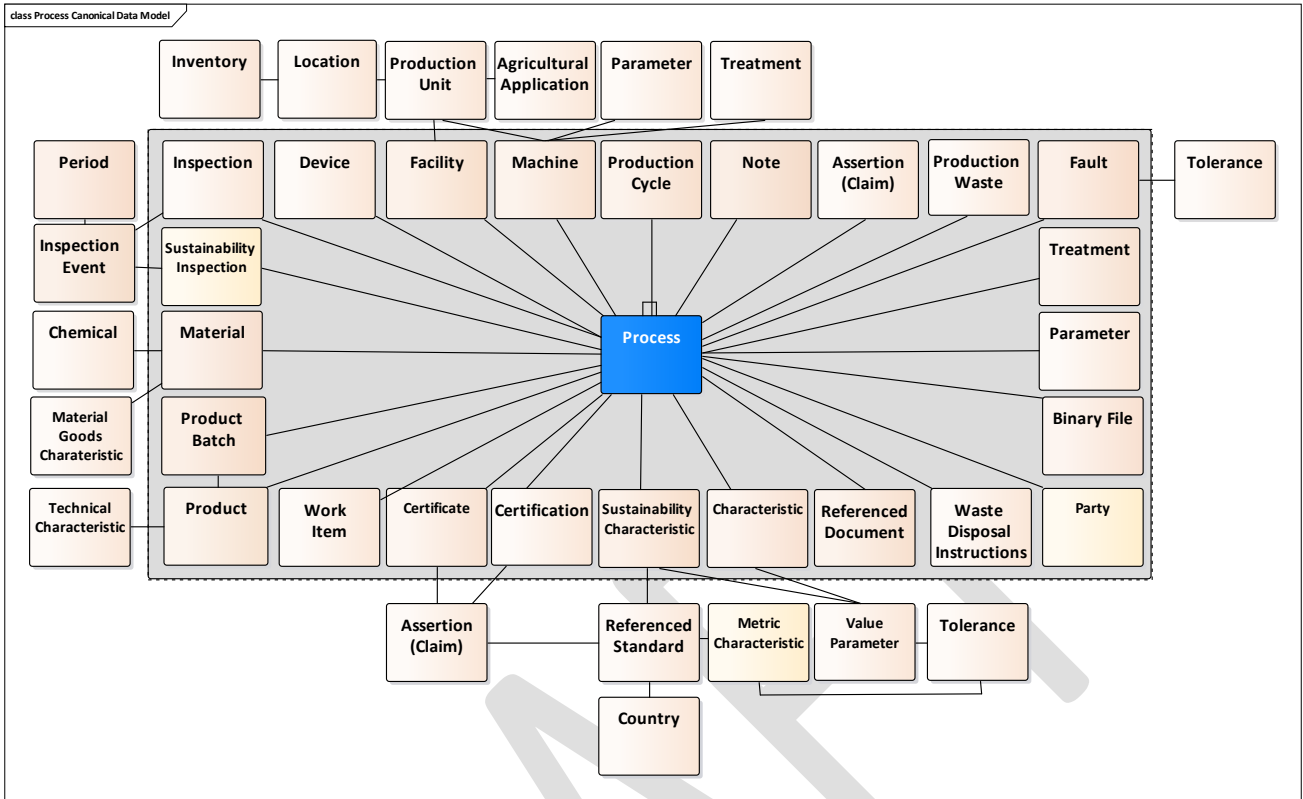
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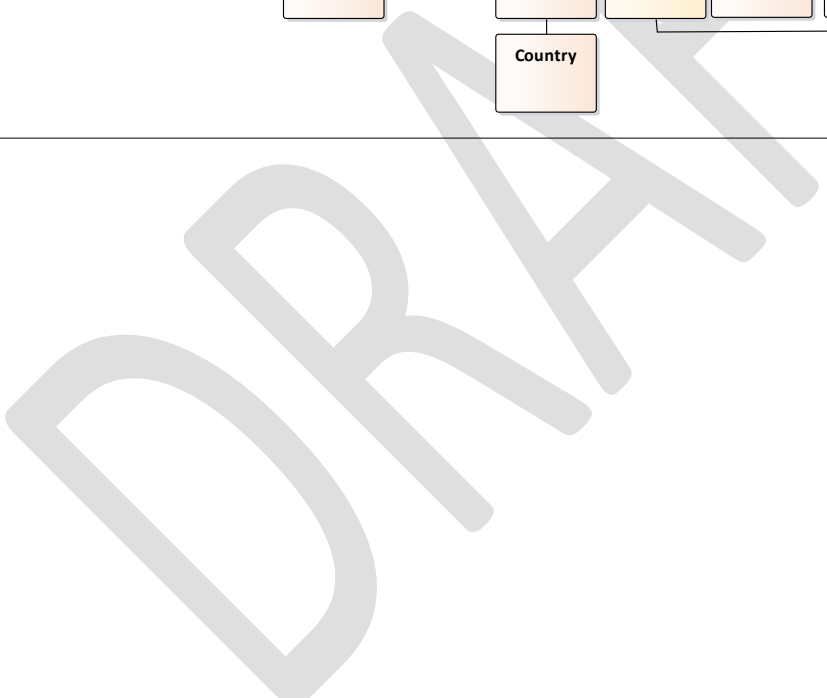
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7.1.4 Process Canonical Data Model

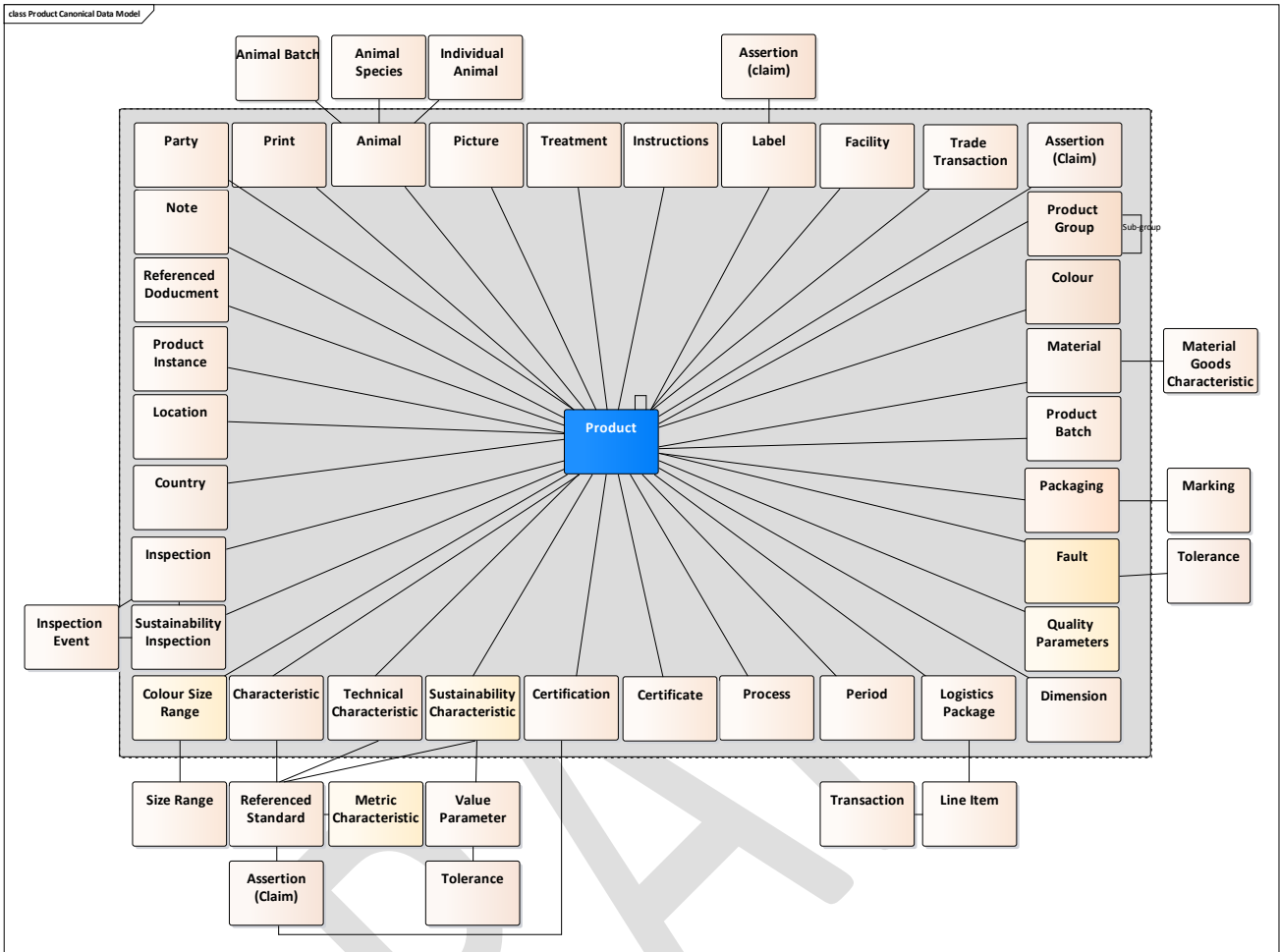


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746 **7.1.5 Product Canonical Data Model**

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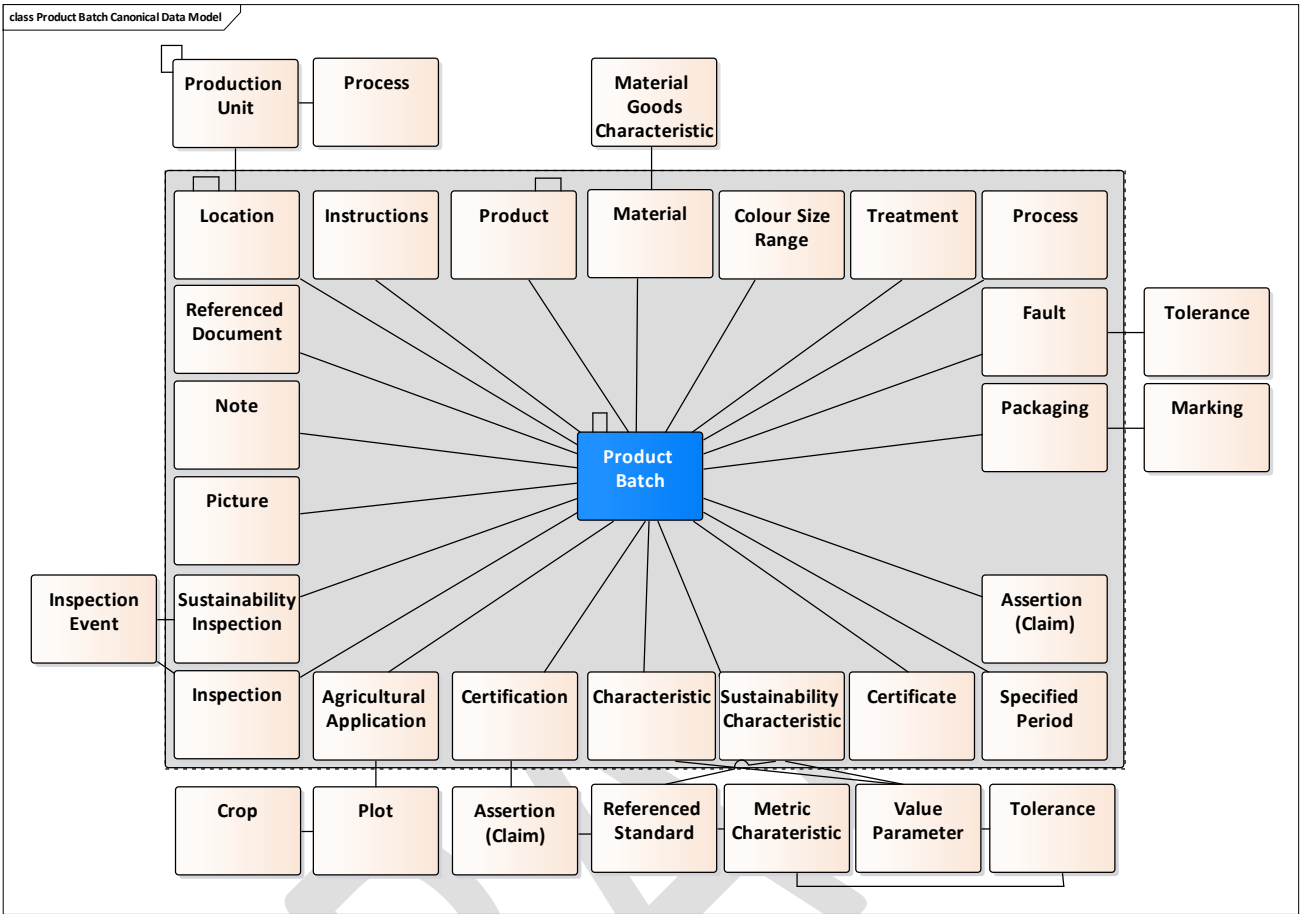
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760 **7.1.6 Product Batch Canonical Data Model**

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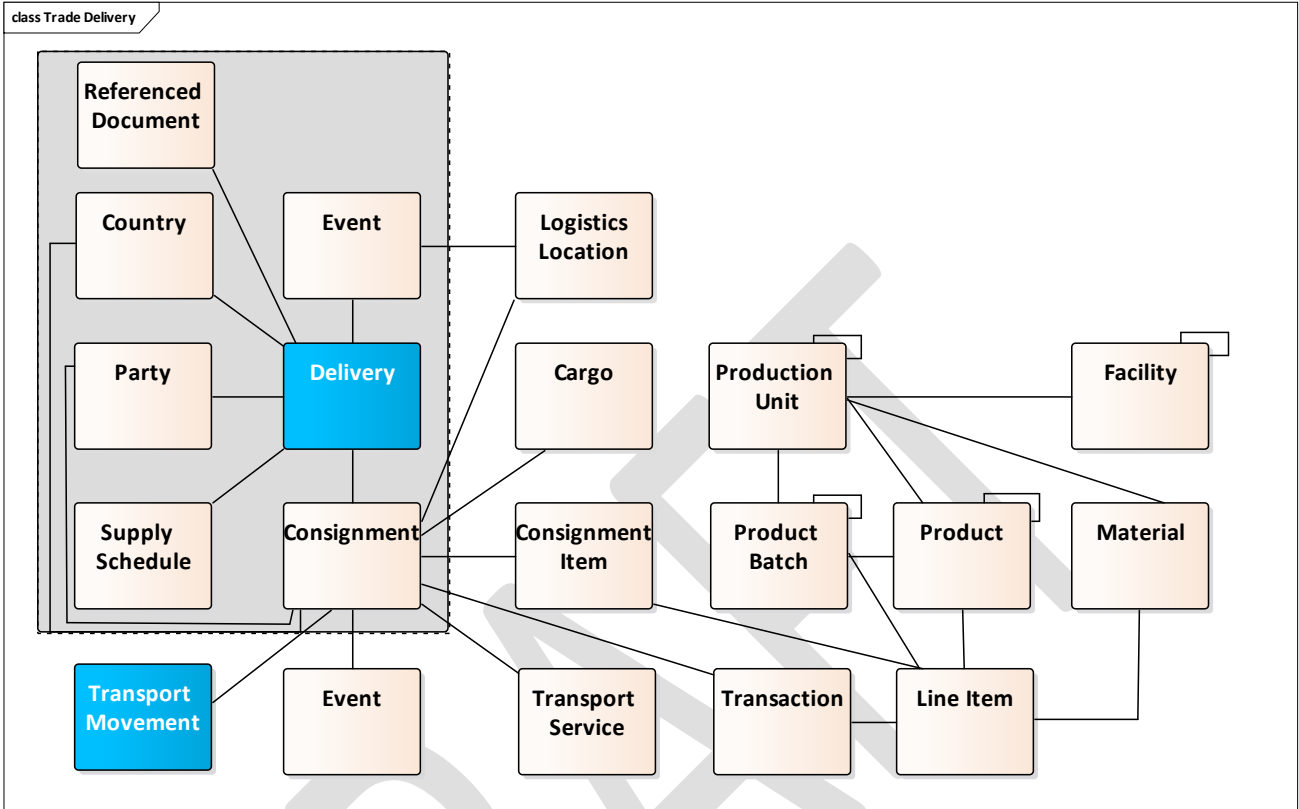
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778 **7.1.7 Transport Canonical Data Model**

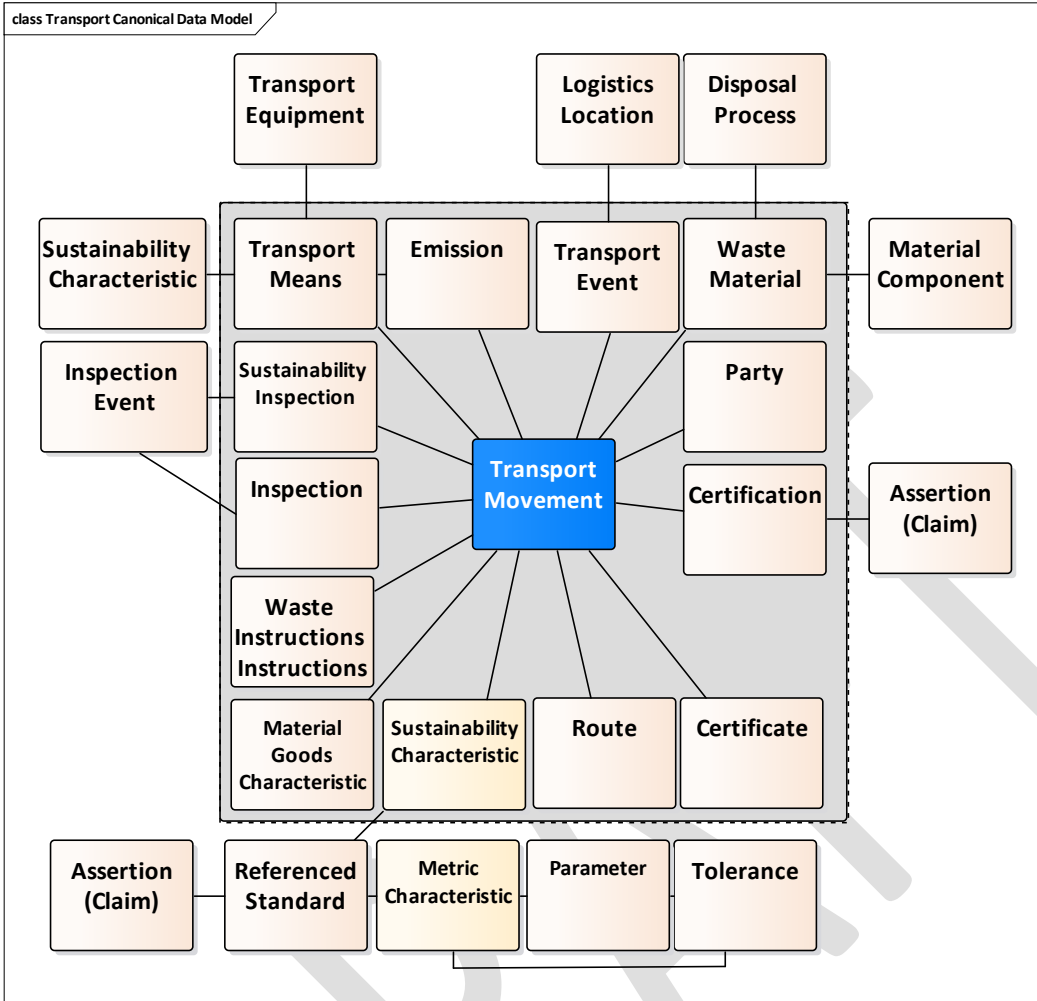
779 **7.1.7.1 Delivery**

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783 **7.1.7.2 Transport Movement**



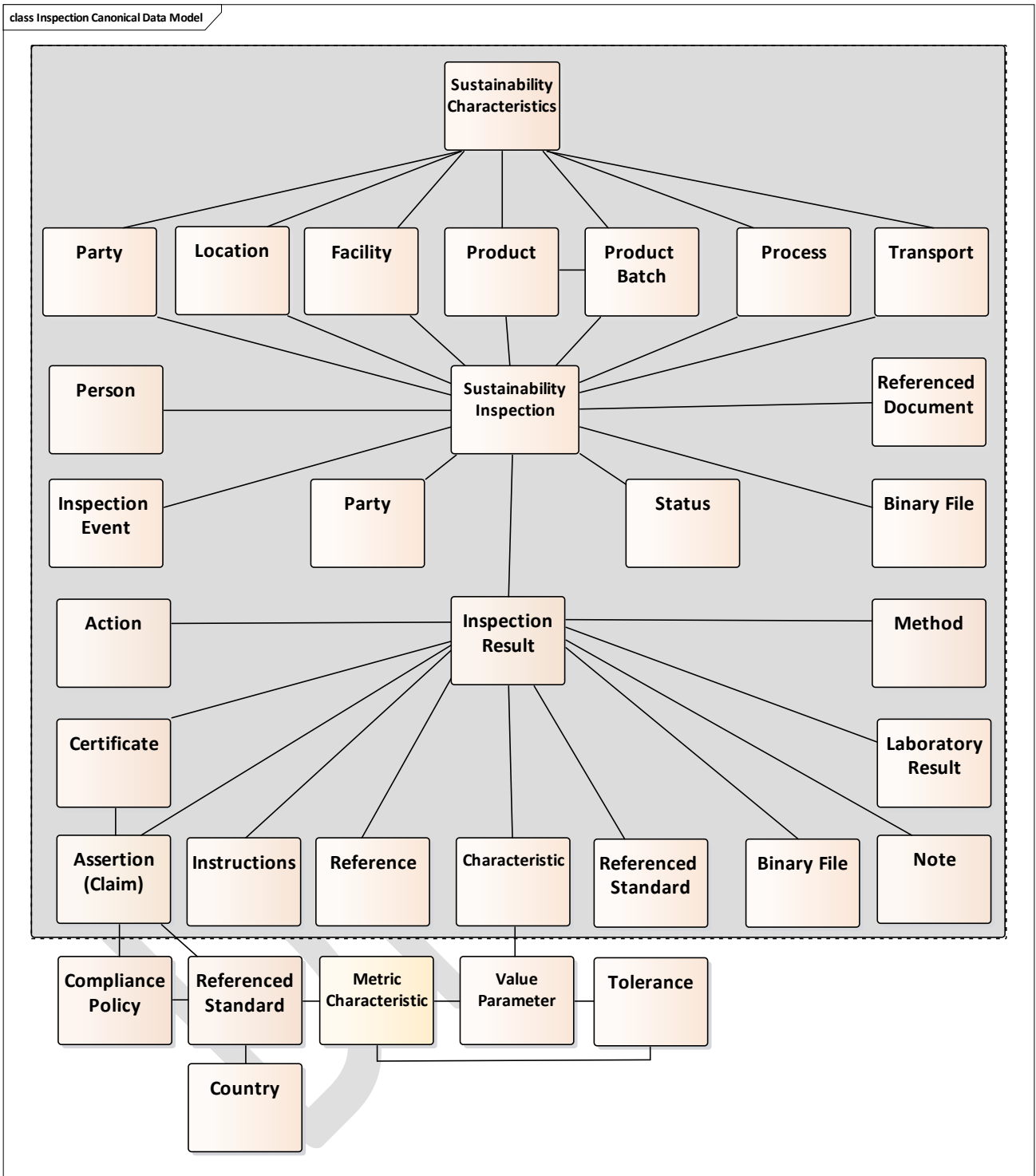
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7.2 Sustainability Inspection Canonical Data Model

The sustainability inspection canonical data model relates to sustainable aspects, standards, compliance policies etcetera. The list below summarizes the information within this model. This part of the Reference Data Model could be used for deriving messages related to inspections.

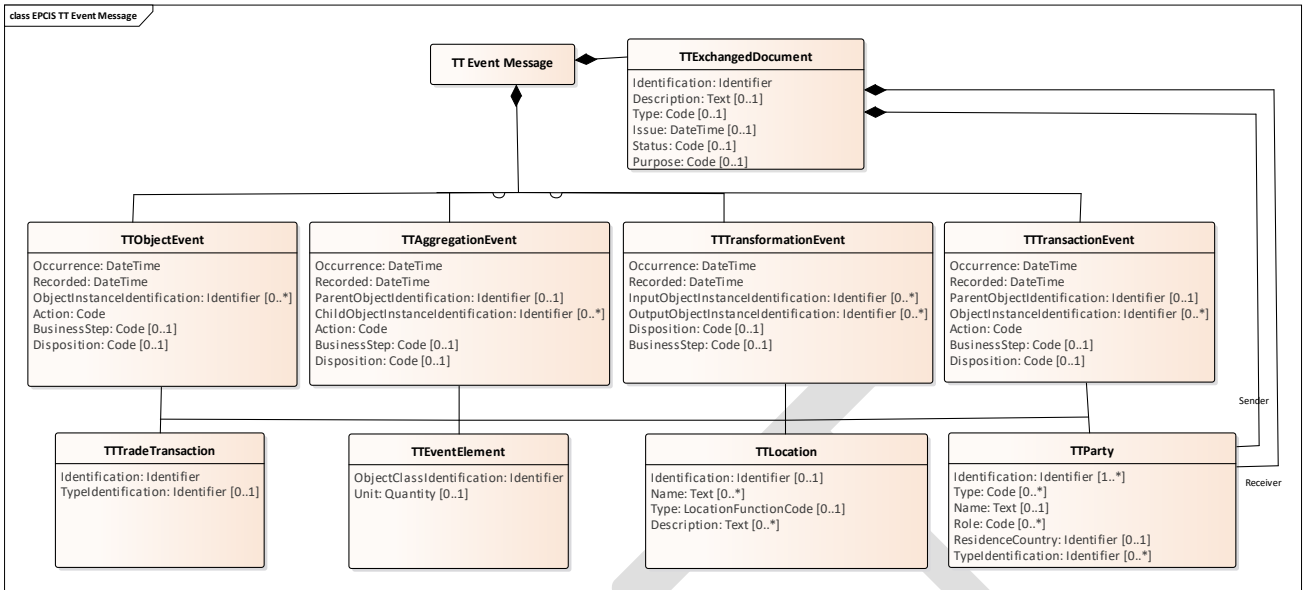
- **Inspection Event(s)**
 - Can take place for a party, location (e.g. crop plot, warehouse), facility, product, - batch, process or transport (movement).
 - **Inspection:**
 - Party, person, event, method, instructions, note, event
 - **Inspection Result**
 - Corrective and/or preventive actions or other actions
 - Obtained Certificate(s)
 - Obtained Assertion (Claim)
 - Inspection Result Characteristics
 - Used method(s)
 - Reference(s)
 - Referenced Standard
 - Attachment(s) (binary files), Notes
 - Interpretation Inspection Result Applicable Parameter
- Included Laboratory Observation Result**
- Observation Result Characteristics
 - Interpretation Observation Result Parameter

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825 **7.3 Electronic Product Code Information Services (EPCIS) Data Model**
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827 **Figure 7-2 UN/CEFACT Traceability & Transparency Event Data Model**
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830 **7.4 Textile & Leather Process & CCBDA Business Information Master**
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Reference Data Model Master Message Structure				
Type	Name	Definition	Min\ Occurs	Max Occurs
Root	Exchanged Document Context	The set of context parameters specified for a use of this master message assembly.	0	1
Root	TT Exchanged Document	A collection of data for a that is exchanged between two or more parties in written, printed or electronic form.	1	1
Root	TT Object Event	Object event details.	0	unbounded
Root	TT Aggregation Event	Aggregation Event details.	0	unbounded
Root	TT Transaction Event	Transaction Event details.	0	unbounded
Root	TT Transformation Event	Transformation Event details.	0	unbounded
Root	TT Party	Party details.	0	unbounded
Root	TT Animal/-Batch	Animal/-Batch details.	0	unbounded
Root	Product/-Batch	Product/-Batch details.	0	unbounded
Root	Production Facility	Production Facility details.	0	unbounded
Root	Location	Location details	0	unbounded
Root	Production Process	Production Process details.	0	unbounded
Root	Trade Transaction	Trade Transaction details,	0	unbounded
Root	Trade Delivery	Trade Delivery details.	0	unbounded
Root	Consignment	Consignment details.	0	unbounded

832 **7.5 Textile & Leather Process & CCBDA Business Information Entities (overview)**
833

834 The tables below contain an overview of all information entities included in the Textile and Leather
835 Process & CCBDA Data Model related to:

- 836 • Sustainability
- 837 • Product
- 838 • Agriculture
- 839 • Transport
- 840 • Events
- 841 • Production
- 842 • Generic

843 **7.5.1 Sustainability related Business Information Entities**

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Sustainability		
Calculated Emission	Material Goods Characteristic	Returnable Asset Instructions
Chemical Treatment	Material Waste Recovery Disposal Process	Sample Observation Result
Compliance Policy	Metric Characteristic	Sample Observation Result Characteristic
Conformance Certificate	Observation Objective Parameter	Specified Action
Corrective Action	Organization Certificate	Specified Inspection
Crop Protection Treatment	Organization Certification	Specified Inspection Result
Disposal Instructions	Organization Characteristic	Specified Material
Distinct Chemical	Preventive Action	Specified Method
Ingredient Range Measurement	Process Certificate	Specified Parameter
Inspection Event	Process Certification	Specified Range
Inspection Instructions	Process Characteristic	Specified Tolerance
Inspection Note	Process Work Item	Supply Chain Inventory
Inspection Person	Product Batch Certificate	Supply Chain Schedule
Inspection Reference	Product Batch Certification	Sustainability Assertion
Inspection Result Characteristic	Product Batch Characteristic	Sustainability Characteristic
Inspection Status	Product Certificate	Sustainability Inspection
Laboratory Observation Analysis Method	Product Characteristic	Toxicological Hazardous Material
Laboratory Observation Contact	Product Finishing Treatment	Trade Product Certification
Laboratory Observation Instructions	Production Waste Component	Transport Waste Component
Laboratory Observation Note	Production Waste Material	Transport Waste Material
Laboratory Observation Party	Production Waste Recovery Disposal Process	Transport Waste Recovery Disposal Process
Laboratory Observation Reference	Referenced Standard	

845 **7.5.2 Product, Agriculture and Transport related Business Information Entities**

Product	Agriculture	Transport
Colour Size Range	Agricultural Application	Logistics Label
Product Batch	Agricultural Certificate	Logistics Location
Product Batch Instance	Agricultural Characteristic	Logistics Package
Product Classification	Agricultural Zone Area	Logistics Shipping Marks
Product Colour	Animal Batch	Logistics Transport Equipment
Product Label	Animal Certificate	Logistics Transport Means
Product Print	Crop Plot	Logistics Transport Movement
Referenced Product	Crop Produce	Packaging Instructions
Supply Chain Trade Line Item	Crop Produce Batch	Packaging Marking
Supply Chain Trade Transaction	Crop Production Process	Referenced Location
Technical Characteristic	Field Crop	Supply Chain Consignment
Trade Product	Individual TT Animal	Supply Chain Consignment Item
Trade Product Group	Species TT Animal	Supply Chain Packaging
Trade Product Instance	Species_ TT_ Product	Transport Cargo
Trade Transaction	TT Animal	Transport Route
Trade Delivery (shipment)		Transport Service

846 **7.5.3 Event and Product related Business Information Entities**

Event (TT)	Production
Supply Chain Event	Facility Production Unit
Transport Event	Production Cycle
TT Exchanged Document	Production Device
TT Object Event	Production Facility
TT Transformation Event	Production Machine
TT Aggregation Event	Production Process
TT Transaction Event	Specified Fault
TT Party	
TT Location	
TT Trade Transaction	
TT Event Element	

847 **7.5.4 Generic Business Information Entities**

Generic		
Binary File	Photographic Picture	Geographical Coordinate
Communication	Referenced Document	Geographical Feature
Contact Person	Spatial Dimensions	Geographical Object Characteristic
Document Context Parameter	Specified Period	Specified Direct Position
Exchanged Document	Tax Registration	Specified Linear Ring
Exchanged Document Context	Trade Address	Specified Polygon
Government Registration	Trade Contact	
Legal Organization	Trade Country	
Legal Registration	Trade Party	
Note		

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853 **8 Definition of Terms**

854 In the table below terms and abbreviations are listed which are used within this document but not
 855 explained in detail. A glossary of business terms for the Textile and Leather value chains is
 856 documented in a separate document.

857

Terms/Abbreviation	Definition
Buy-Ship-Pay RDM	BSP-RDM in combination with the UN/CEFACT International Supply Chain Reference Model (ISCRM) describes a generic reference data model and provides a framework to accommodate the requirements of: a) cross-border supply chain trade related transactions, including government domain needs for their own specific information exchanges. b) supporting the transport-related processes involved in the cross-border supply chain and covering the involved business areas at a high-level, the main parties and the information involved.
Canonical Data Model	A data model which is a subset of another.
Chain of Custody	Chain of custody, in legal contexts, is the chronological documentation or paper trail that records the sequence of custody, control, transfer, analysis, and disposition of physical or electronic evidence.
CITES	Convention on International Trade in Endangered Species
E-Biz	eBIZ is the European public private initiative pursuing the use and greater interoperability of digital communication across the fashion industry supply chain.
GS1	Global Standards One
ISO	International Standards Organization
JSON	JavaScript Object Notation) is a lightweight data-interchange format.
JSON-LD	JSON-LD stands for JavaScript Object Notation for Linked Data, which consists of multi-dimensional arrays (think: list of attribute-value pairs).
Logistics unit	Logistics unit or package is a self-contained wrapping or container within which goods can be contained for logistics purposes, such as a box or a barrel which can be filled, partially filled or empty.
Product batch	An identified group of not individually identified products or the quantity of anything made in one operation or lot.
RFID	Radio-frequency identification uses electromagnetic fields to automatically identify and track tags attached to objects.
Sustainability Claim/Assertion	A statement of a company that its products or services can meet its customers' needs without compromising the ability of future generations to meet their own needs.
Traceability system	In this document refers to all of the practical processes, procedures and technology needed to create a functional traceability system. It does not refer to the surrounding ecosystem with its policies, incentives, promotion, etc. A traceability system together with its surrounding ecosystem forms a traceability framework. Relevant data components: Party, Transport Facility, Location, Facility, Process, Product type, Product batch.
Traceable asset	it is the physical product as a whole or its definite component, or its traded unit that is to be traced/tracked. Within garment and footwear

Terms/Abbreviation	Definition
	it is, “any item (for example an object, a product or other traded item or a service) that needs to be tracked along a supply chain.” (UNECE Traceability for Sustainable Trade Guide). It can also be thought of as the unit that one wants to trace or record information about in a traceability system. In a garment or footwear value chain, it can refer to any manufacturing batch or logistic (packaging) unit of raw materials, intermediary or finished products. In order to track a traceable asset, it needs to be given an identifier. This is most commonly a numeric or alphanumeric code which, either on its own or together with other relevant codes (for example for locations) allows tracking of the traceable asset at any point of time and/or back to its origin. ECE/TRADE/429 (2016) Traceability for Sustainable Trade
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business.
UNECE	United Nations Economic Commission for Europe
Use case	A use case is a list of actions or event steps typically defining the interactions between a role (known in the Unified Modeling Language (UML) as an actor) and a system to achieve a goal. The actor can be a human or other external system.
Vertical approach	Creating business information entities for a particular domain, and by ofthen cannot be used by other domains.
XML	eXtensible Markup Language. XML is a markup language much like HTML. XML was designed to store and transport data.
XML Schema	An XML Schema describes the structure of an XML document.

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862 9 Annex I. Business Information Entities in Detail

863 The embedded spreadsheet file below contains business information entities including their attributes
864 and associations.

865
866 Explanation.

- 867 • Type column: Aggregated Entity (Entity), Attribute (Attr.), Association (Assoc.)
- 868 • Short Name column: user friendly name compared to technical name (dictionary entry name).
- 869 • Definition column: definition of the information entity.
- 870 • Data type column: representation term
- 871 • Min Occurs column: value 0 is optional
- 872 • Max Occurs column: 1 or unbounded.

873

874 **Note:** The names of the information entities are so called short names instead of the technical dictionary entry
875 names as used within the UN/CCL and published subsets.

876



Textile and Leather
Annex BRS BIEs.xls

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