



UN/CEFACT

SIMPLE, TRANSPARENT AND EFFECTIVE PROCESSES
FOR GLOBAL BUSINESS

**BUSINESS REQUIREMENTS SPECIFICATION
(BRS)**

Business Domain: Primary natural products from plant or animal origin

Business process : Product traceability data exchange

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TABLE OF CONTENT

- 1 PREAMBLE..... 2**
- 2 REFERENCES..... 3**
- 3 OBJECTIVE..... 3**
- 4 SCOPE..... 3**
 - 4.1 Description..... 3**
 - 4.2 Context 4**
 - 4.3 Parties involved 4**
- 5 BUSINESS REQUIREMENTS ELABORATION 5**
 - 5.1 Business Requirements List..... 5**
 - 5.2 Definitions of Business Terms 6**
 - 5.2.1 Business Partner View–Participants and Stakeholders..... 7
 - 5.3 Business Requirements View 7**
 - 5.3.1 Use case description 7
 - 5.3.2 Business Entity View 12
 - 5.4 Activity diagram at Level 1 and 2 13**
 - 5.5 Information model definition (class diagrams)..... 13**
 - 5.6 Business Information Entities Level 1 and level 2 16**
 - 5.7 Business rules 29**

Document Change history log

| Date of change | Version | Paragraphs changed | Summary of changes |
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| 12-04-2016 | 0.1 | Initial version | |
| 01-05-2016 | 0.2 | 5.4 | Correction of explanation of level 0 |
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1 Preamble

The project 'Product Traceability Data Exchange' is the follow up of the project on Animal Traceability Data Exchange (v1.0 ODP5).

At the first stage, we have focused on the movements of animals or groups of animals from one location to another and in this second stage we will focus on the movements of animal and plant products.

Originally the intention was to elaborate two BRSEs, one for traceability of plant products and one for animal products. During the process it became clear that the information elements and the data structure were almost exactly similar. In order not to create a duplication of ABIES and ASBIES in the Core Component Library it was decided to develop one standard for traceability of animal and plant products.

The present document describes traceability processes for animal products (all species) and plant products during processing and transport within a country or across borders.

The business case supported by these processes is:

- All the business parties involved in the chain record T&T (track and trace) information on animal and plant products in a Traceability system
- A T&T requesting party (business, consumer or government) has a question about an animal or plant product, processing step, transport, location or responsible party and requires an immediate answer.
- The T&T system retrieves the required information and sends it to the requesting party

Traceability has been most commonly defined as "the ability to trace the history, application or location of an object" in a supply chain (ISO, 2015).

GS1, Global Standards defines traceability as "the ability to track forward the movement through specified stage(s) of the extended supply chain and trace backward this history, application or location of that which is under consideration (Ryu, 2012).

Traceability issues can be defined in 3 levels:

1. Identify the responsible business partners for the particular tracking and tracing questions for the specified animal or plant products.
2. Questions about animal or plant products, processing steps, locations, transports and responsible parties.
3. Questions in more detail about the origin of the animal or plant product and the conditions in which it has been produced.

The outputs will be the harmonized XML schemas to support the information exchange for the business process.

The structure of this document is based on the structure of the UN/CEFACT Business Requirements Specification (BRS) document reference.

2 References

- UN/CEFACT Modelling Methodology User Guide (CEFACT/TMG/N093)
- UN/CEFACT Business Requirement Specification Document Template (CEFACT/ICG/005)
- UN/CEFACT E-CERT BRS
- UN/CEFACT E-Crop BRS
- UN/CEFACT CRIE cattle registration and information exchange BRS
- Previous work on Livestock Life Record draft data model
- ISO / IEC 19987
- UN/CEFACT FLUX Fisheries Language for Universal eXchange P1000-x BRS
- ISO 11784 international standards that regulate the radio frequency identification (RFID) of animals
- ISO 3166 - ISO Country codes used in identification of animals
- BRS Animal Traceability Data Exchange v1.0 ODP5

3 Objective

The objective of this document is to standardize the Business Processes, the Business Transactions and the Information Entities of the technical description and information of animal or plant product traceability data exchange.

The Business Process is the detailed description of the way partners intend to play their respective role, establish business relationship and share responsibilities to interact efficiently with the support of their respective information system.

The business documents are composed of Business Information Entities (BIE), which when available, are taken from the library of reusable business information entities and when not found, are proposed as new Business Information Entities. The contents of the business documents and the Business Information Entities are presented using class diagrams.

4 Scope

4.1 Description

This section describes the extent and limits of the business process within the information chain being described in this document.

The information exchange for tracking and tracing has been developed for products from plant or animal origin. The chain starts with the harvest or collection of the product until the processing step whereby the output can no longer be considered as a plant or animal or plant product. When setting up a specific traceability project, the entry and exit point for the traceability chain has to be specified by the relevant stakeholders.

| Categories | Description and Values |
|------------------|--|
| Business Process | Electronic registration and exchange of information with the purpose of obtaining traceability information about animal or plant products . This can |

| | |
|--------------------------------|--|
| | include traceability of a carcass, a batch of wool, etc. Individually identified products are considered as a batch of one. |
| Product Classification | Traceability of animal or plant products data |
| Industry Classification | All sectors (agricultural and others) involved in animal slaughter, hunting, animal or plant product processing, trade and transport of animal or plant products |
| Geopolitical | Global |
| Official Constraint | International Regulations National regulations Local applicable regulations |
| Business Process Role | Exchange of tracking and tracing data |
| Supporting Role | None |
| System Capabilities | Agreed level of security to protect data integrity Network of connected T&T databases System of authorizations and keys for retrieving T&T information by T&T requesting parties |

4.2 Context

Important is:

- Products of all species can be tracked and traced using a common model
- A generic standard supporting tracking and tracing of commodities of all kinds can be used for identifying the involved parties for the specified animal or plant products: level 0.
- Level 0 is described and specified in the BRS Animal Traceability Data Exchange v1.0 ODP5. This level is also valid for tracking and tracing animal or plant products.

4.3 Parties involved

| Terms | Definitions |
|------------------|--|
| Animal Holder | The party who keeps and is responsible for an animal kept on a location. |
| Plant Grower | The party who grows plants or crops on a location. |
| Primary Producer | An animal holder or plant grower |
| Transporter | The party transporting animal or plant products from one place to another and providing transport means for this transport . |
| Trader | The party who trades in animal or plant products. |

| | |
|---------------------------------------|--|
| Processor | The party who is responsible for handling, harvesting, slaughtering, packaging, transforming, collecting animal or plant products in nature, etc |
| Tracking and tracing repository | A repository in which the business partners declare all tracking and tracing events. Parties can search the repository for T&T events and retrieve tracking and tracing information. |
| Authority | An authority responsible for legal administration of animal or plant (product)production, imports, exports, transport, catchment, or responsible for human health, food and feed safety, animal or plant health, economic or environmental issues |
| Tracking and tracing requesting party | The party searching, requesting and receiving tracking and tracing information about a plant or animal product |
| Repository party | A party providing the tracking and tracing repository with all the services concerned. |
| TT Party | The party responsible for declaring an animal or plant product tracking and tracing event to the tracking and tracing repository. In general that is the party responsible for the production and/or processing of an animal or plant product, a referenced location, a vessel transport means, an id carrier transport means or an animal shipping. |

5 Business Requirements Elaboration

5.1 Business Requirements List

For T&T purposes a network of public and / or private databases could be used, in which the animal or plant product and data on its processing steps and movements in the supply chain can be registered, can be searched and can be retrieved. This data is not public information. The business partners remain in control over the access to the data.

Parties involved need to agree on who has access to which data sets and how they will be used. Authorities have a legal basis in access to and use of data sets.

The traceability data could also be exchanged directly between parties without using such central data bases.

| Number | Business Requirement Statement |
|--------|--|
| 0. | Track and trace data messages must use existing (inter)national standards and methods allowing to provide information |
| 1. | An animal or plant product or batch of animal or plant products (indicator (e.g. tag) number(s), processing steps, transports, locations, responsible parties) |
| 2. | A transport event (period, consignment, shipment, transport means, equipment, locations, animal or plant products involved, indicator (e.g. tag) number(s), responsible parties) |
| 3. | A processing event (one animal, batch of animals, or animal or plant product, transformed into one or more animal or plant products; a group of animals, animal batches or animal or plant products transformed into one or more new animal or plant product(s)) |

| | |
|----|--|
| 4. | A location (period, arrival of individual animals, batches of animals, animal or plant products, transformation, departure of animal or plant products, dates of arrivals, transformation and departures, responsible parties) |
| 5. | Responsible party (period, processing steps, locations, animal or plant products) |
| 6. | Interoperability between different systems |
| 7. | Independent of animal species and national and / or geographical locations |

Animal or plant product traceability data can be exchanged on a regular basis, e.g. for consumer information. Animal or plant product traceability data can also be exchanged on an ad hoc basis, e.g. in case of health or food security threats, animal welfare issues or infraction of CITES invention.

5.2 Definitions of Business Terms

| | |
|--|--|
| Track and trace event | An event involving an animal or plant product, related to the issues What, Where, When, Who and Why. |
| Tracking and tracing requesting party | Person, organization or authority needing tracking and tracing information on animal or plant product(s) for their business processes, or following an incident or crises with respect to food safety, human health, animal welfare, etc. In the event that the traceability system is regulated, the traceability data could also be used to verify compliance and enforce laws. |
| Registration | Administration of data according to a specific set of criteria. (For example animal, animal or plant product, processing registrations, transport registration, registrations with respect to certification, etc.) |
| Event registration | An administration of an event identifying key information, which can be searched for T&T requests. |
| Batch of animals | An identified group of not individually identified living or dead animals. An individually identified animal is considered as a batch of one. |
| Batch of animal or plant products | An identified group of animal or plant products coming from the same animal, group of animals or (batch of) animal or plant product(s). Batches of animal or plant products can be recomposed into one or more new batches during a processing step. |
| Transport | Movement of animal or plant product(s) from one location to another. |
| Processing step | Transforming an animal, batch of animals, animal or plant product or batch of animal or plant products into one or more new animal or plant product(s). A processing step can create one or more new batches. Storage and packaging are considered to be a processing step. |

| | |
|---------------------|--|
| Traceability | Traceability is retrieving information about the origin and history of an animal or plant product and the conditions in which it has been produced. Traceability information should give an answer on the Why, What, Who, Where and When questions about a (batch of) animal or plant products or an animal or plant product related event. |
| Location | An identified geographical point or area where an event related to an animal or plant product traceability occurs. |
| Party | An identified person, organization or authority. |

5.2.1 Business Partner View-Participants and Stakeholders

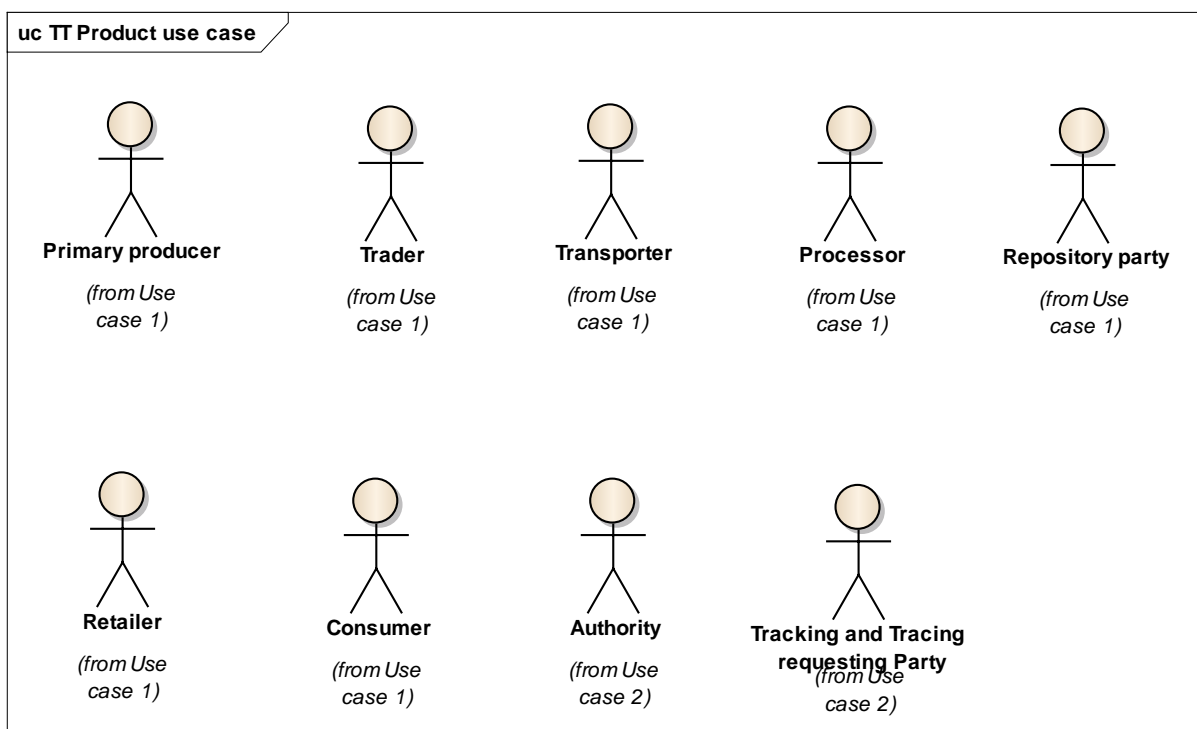


Figure 5 The business parties

Business partner or actor in this document refers to roles parties involved have in the supply chain. E.g producer organizations or cooperatives are not included as they act in the role of one or more of the actors mentioned above. Specific organizations can have more than one role in the chain.

5.3 Business Requirements View

5.3.1 Use case description

For understanding the business of producing, processing, trade and transport of animal or plant products the first use case (figure 1) shows the relation between the different stakeholders involved.

The business chain starts with the primary producer where animal or plant products are harvested from crops, or living or dead animals. This holding can be any place where

animals are kept (e.g farm, slaughter house, park, forest, zoo, etc.) and where crops are produced.

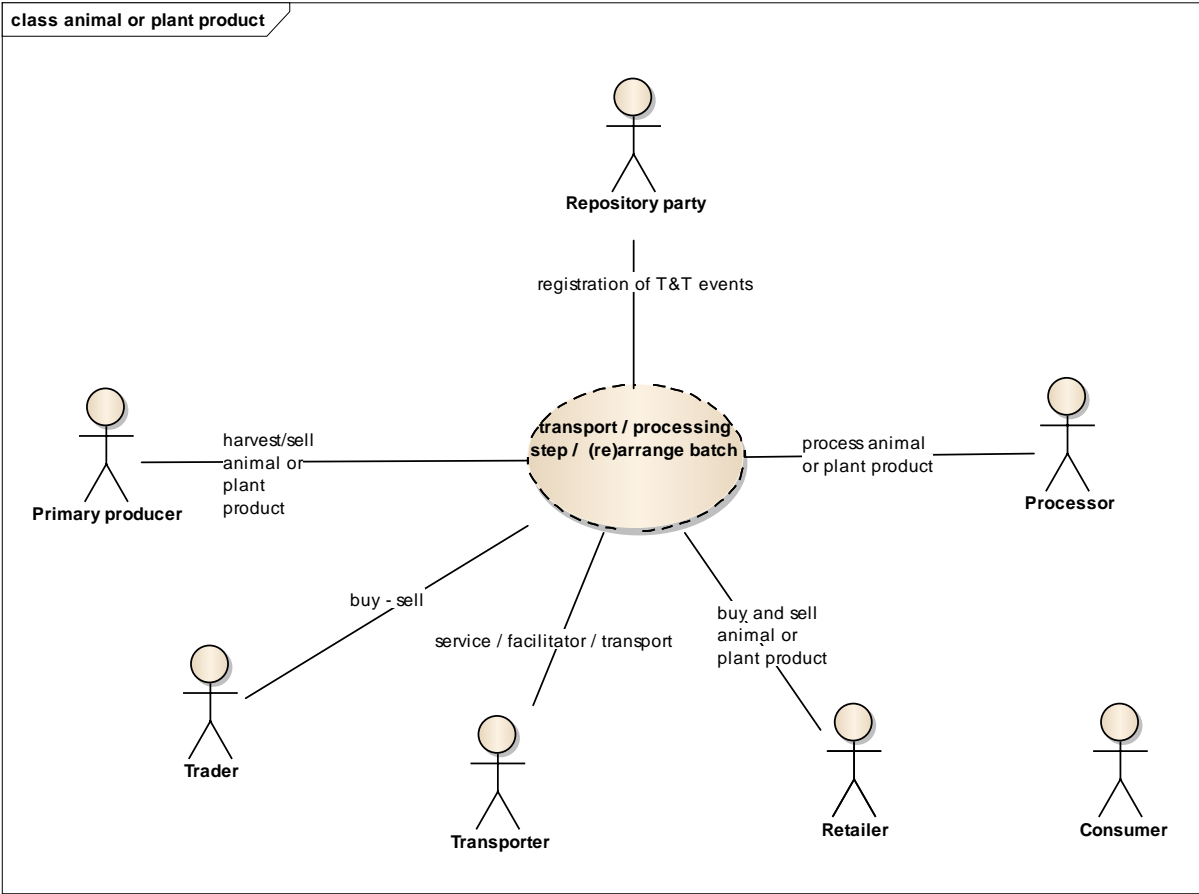


Figure 1 Basic use case animal or plant product, processing, trade and transport

The real use case in a tracking and tracing event is the one below (figure 2), where a specific party needs T&T information about an animal or plant product, a processing step, a transport, a location or a responsible party.

This second use case deals with the declaration of these events in a tracking and tracing repository.

The third use case is about the search and request in the tracking and tracing repository about animal(s), animal or plant product(s), processing steps, locations, transports and responsible parties.

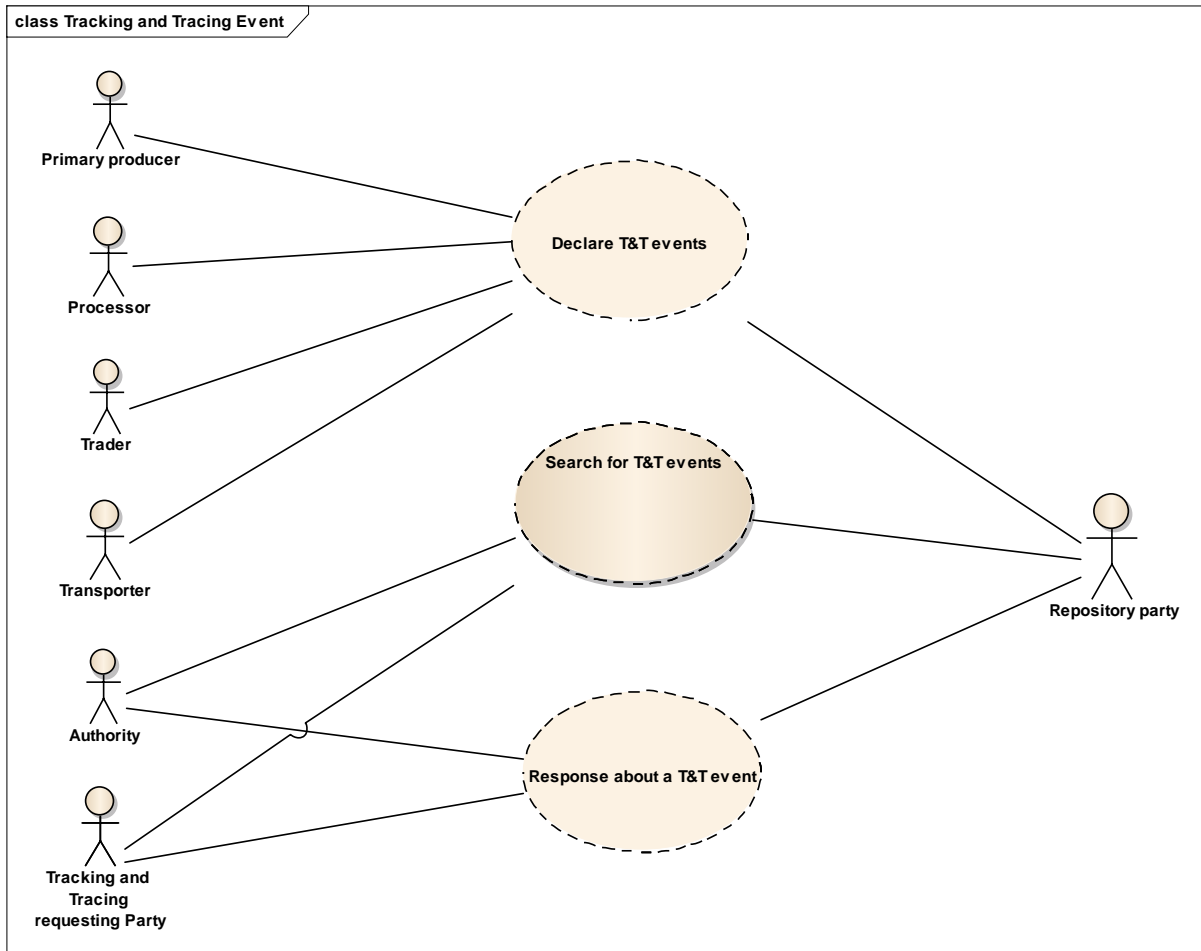


Figure 2 Use case tracking and tracing event

The third (fig 3) use case is about the information exchanged between the business partners, identified with the help of the T&T repository, level 0 (for a detailed description of level 0 see BRS Animal Traceability Data Exchange v1.0 ODP5).

The information exchange is based on a request and the response process. The choice can be made to split the data exchange in a basic and a detailed level. Level 1 is limited to basic data about an animal or plant product, location, transport or responsible party. At Level 2 additional data about these events can be exchanged. In the Business Information Entities the Level 2 ABIEs, BBIEs and ASBIEs are all optional. So the Level 1 and Level 2 will only exist if at schema implementation these differences are implemented. In the implementation guidelines this will be explained in more detail. In the class diagram the difference between Level 1 and Level 2 will be highlighted by use of different colours: the yellow colour is level 2.

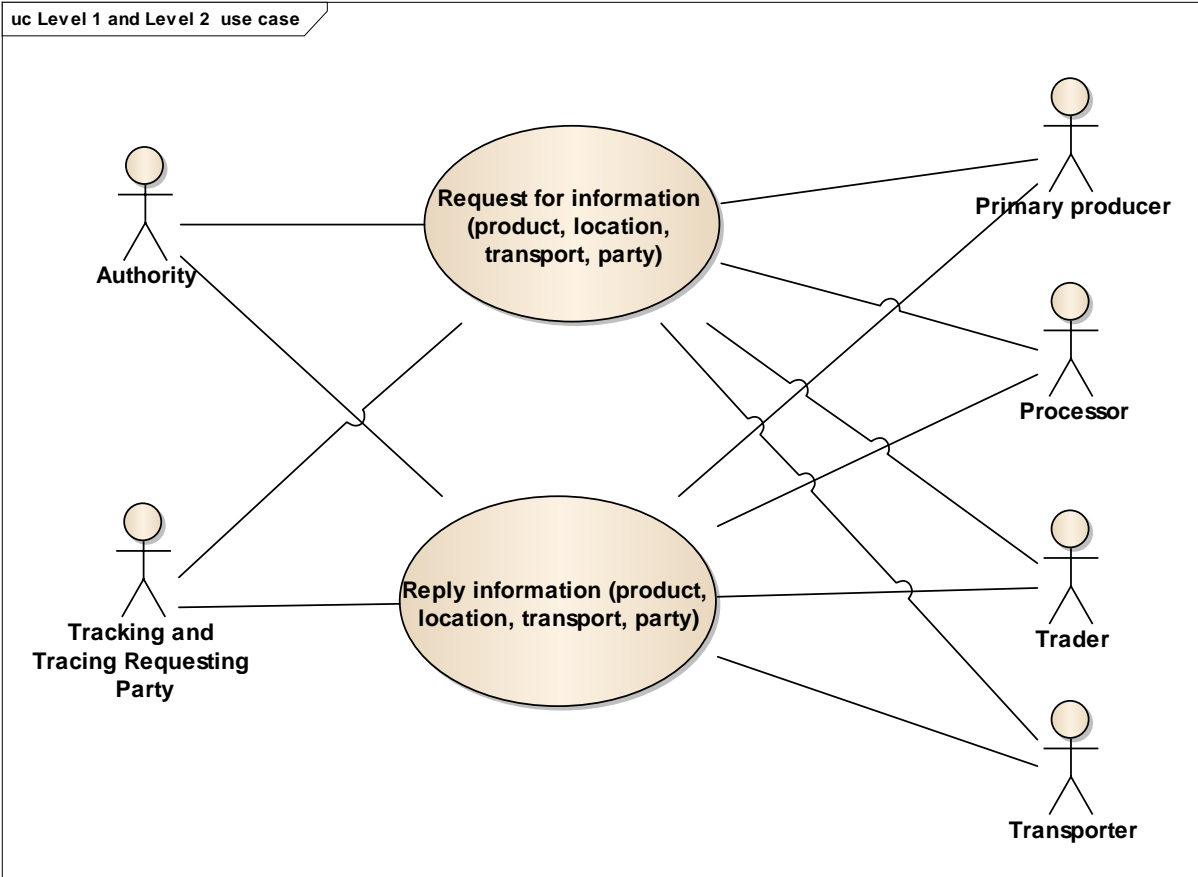


Figure 3 Use case tracking and tracing request

The diagrams of figure 2 and 3 illustrate the use cases to perform three business steps:

- Declare the animal or plant product related processing, trade and transport events by the business partners
- The search for the specified business partners by the T&T party
- The response from the T&T repository system.

The main data comprise the date and time of the event, animal or plant product data, processing data, transport data, location and involved parties.

Actually, the information needs are the same for every type of animal or plant product.

This use case on traceability of animal or plant products helps reducing risks in the fields of feed and food safety, health, animal welfare, conservation of endangered species, economic and environmental sustainability.

Sequence diagram

The identification of the responsible primary producer, processor, trader, transporter or retailer is done at Level 0, see BRS Animal Traceability Data Exchange v1.0 ODP5.

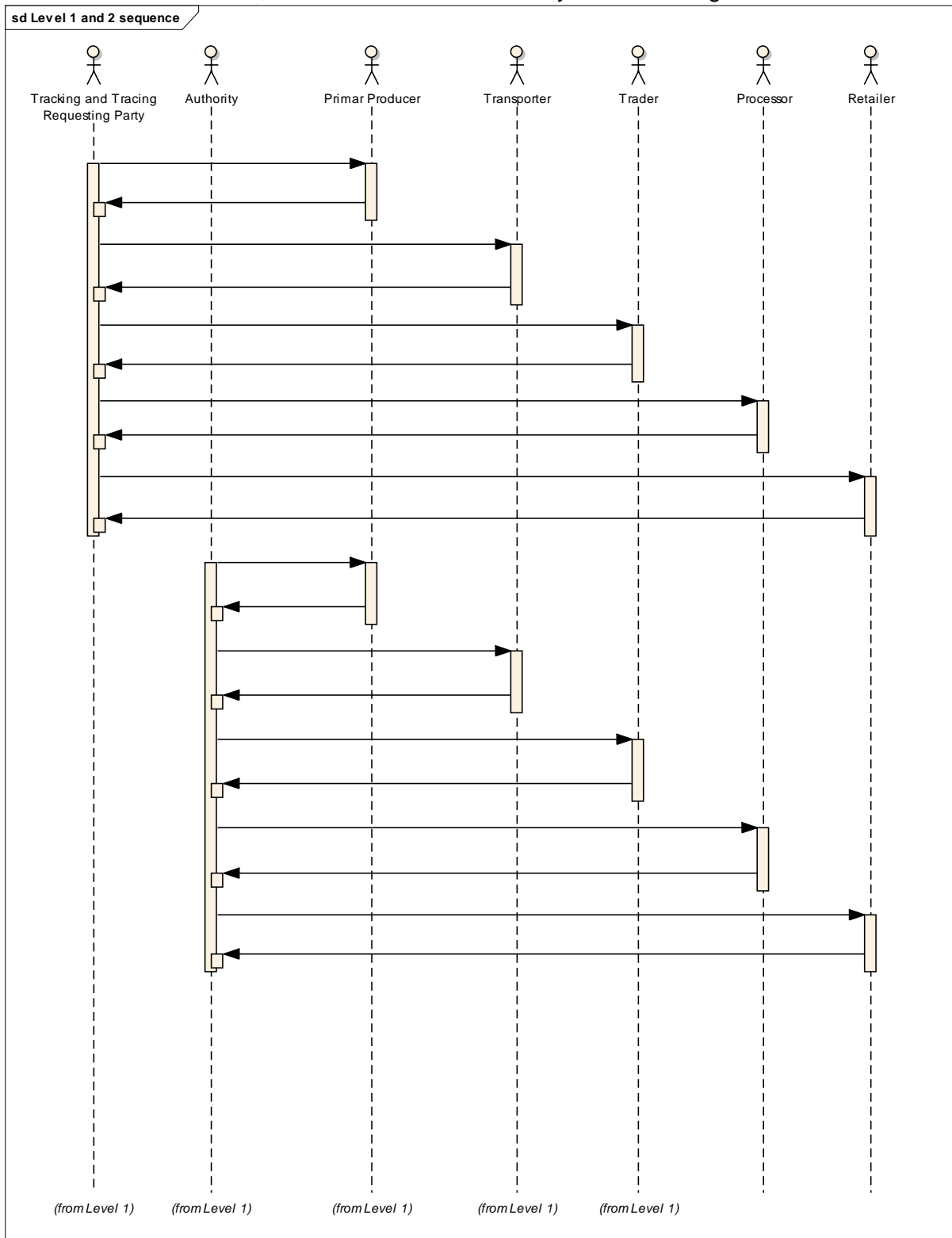


Figure 4. Level 1 and Level 2 sequence diagram tracking and tracing of animal or plant products

Level 1 and 2 include only a request and a response. Based on the response another iteration of a request and response can be performed.

5.3.2 Business Entity View

| | |
|------------------------------|---|
| Business process name | Traceability of animal or plant products, processing, trade and transport data exchange |
| Actors | Tracking and tracing requesting party Authority Primary producer Processor Trader Transporter Repository party Retailer Consumer See 5.8 for definitions |
| Description | The tracking and tracing party sends a request for information on animal or plant product(s), location(s), transport(s) and responsible parties to a T&T system. The system retrieves the required information from the network and sends a message with the required information. |
| Pre-condition | A network of related databases is in place A system for authorizations is in place Business parties control access to their data |
| Post-conditions | Success: All the relevant information is retrieved out of the T&T system and sent to the T&T requesting party Failure: Not all the relevant information can be retrieved (databases not updated, authorisations not given, no interoperability in the T&T system, database not 24*7 available,...) |
| Scenarios | Providing traceability, processing, trade and transport data information |
| Remarks | |

5.4 Activity diagram at Level 1 and 2

This activity diagram helps identifying all the significant information flows between the business partners in the tracking and tracing processes.

For the activity diagram of level 0 see BRS Animal Traceability Data Exchange v1.0 ODP5.

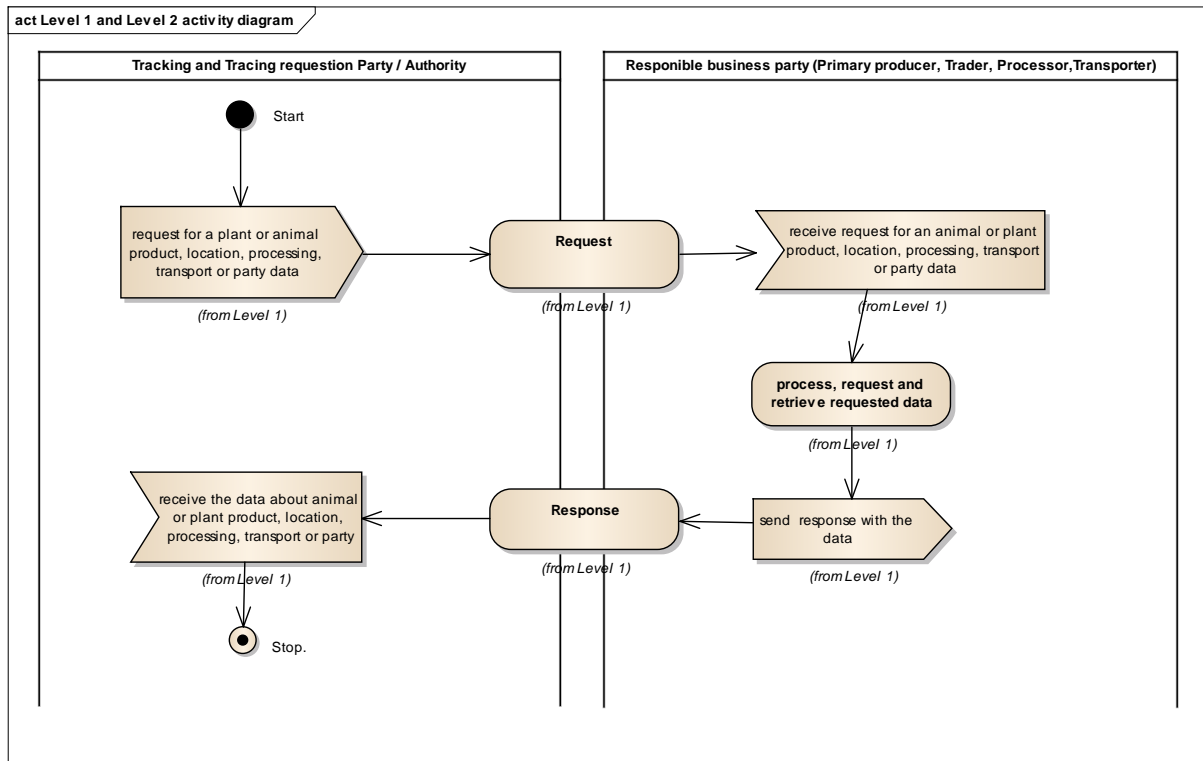


Figure 6 Activity diagram for Level 1 and Level 2 for the request and response T&T data about animal or plant product, location, processing step, transport or responsible party

5.5 Information model definition (class diagrams)

The class diagram describes all the necessary classes of information for a flow of information exchange for animal or plant product traceability exchange.

The messages for level 0 are defined for declaring events to a database or repository, and for basic search and request operations. For details see BRS Animal Traceability Data Exchange v1.0 ODP5

In figure 7 the difference between Level 1 and Level 2 is highlighted by use of different colours. Level 2 elements have a yellow colour (and a italic characters in case of B&W print).

In Fig 7 and 8, the Level1 and Level 2 information entities are presented. Level 1 gives four different types for structuring the information exchange. The information can be structured along animal or plant product, location, processing step, transport or responsible party data.

Level 2 provides also four different types for structuring the information exchange, but includes much more detail than level 1. All details of Level 2 are optional extensions of Level 1. The difference between the two levels can be made at implementation level. The implementation guideline will assist in this.

The class diagram of level 1 and 2 does not differentiate between a request for information or the reply. A key result of this project and this BRS, is to include the generic structures into the UNCEFACT structures.

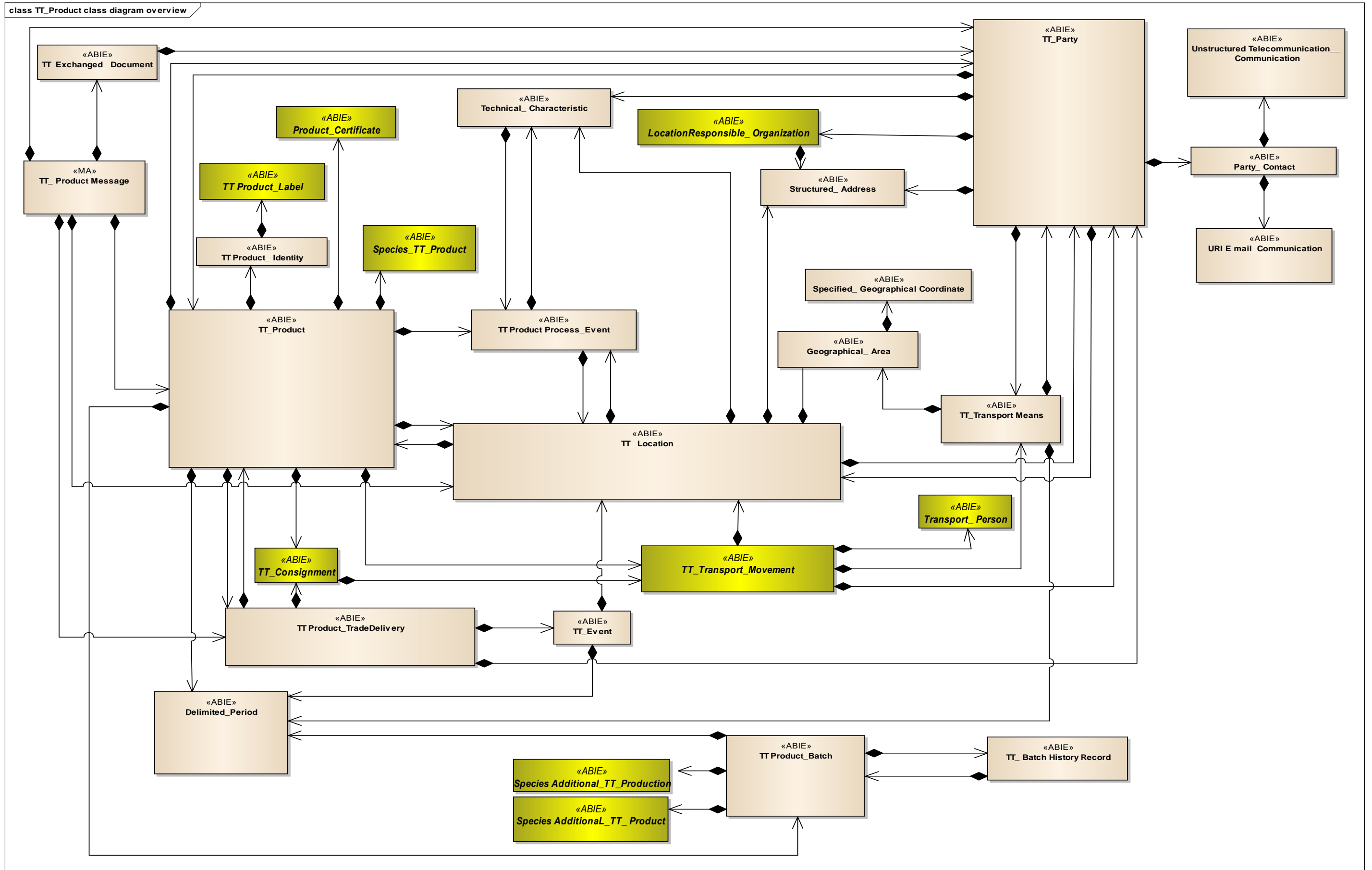


Figure 7 Class diagram overview for Level 1 and 2, for the extended exchange of the animal or plant product data, location, processing and transport data

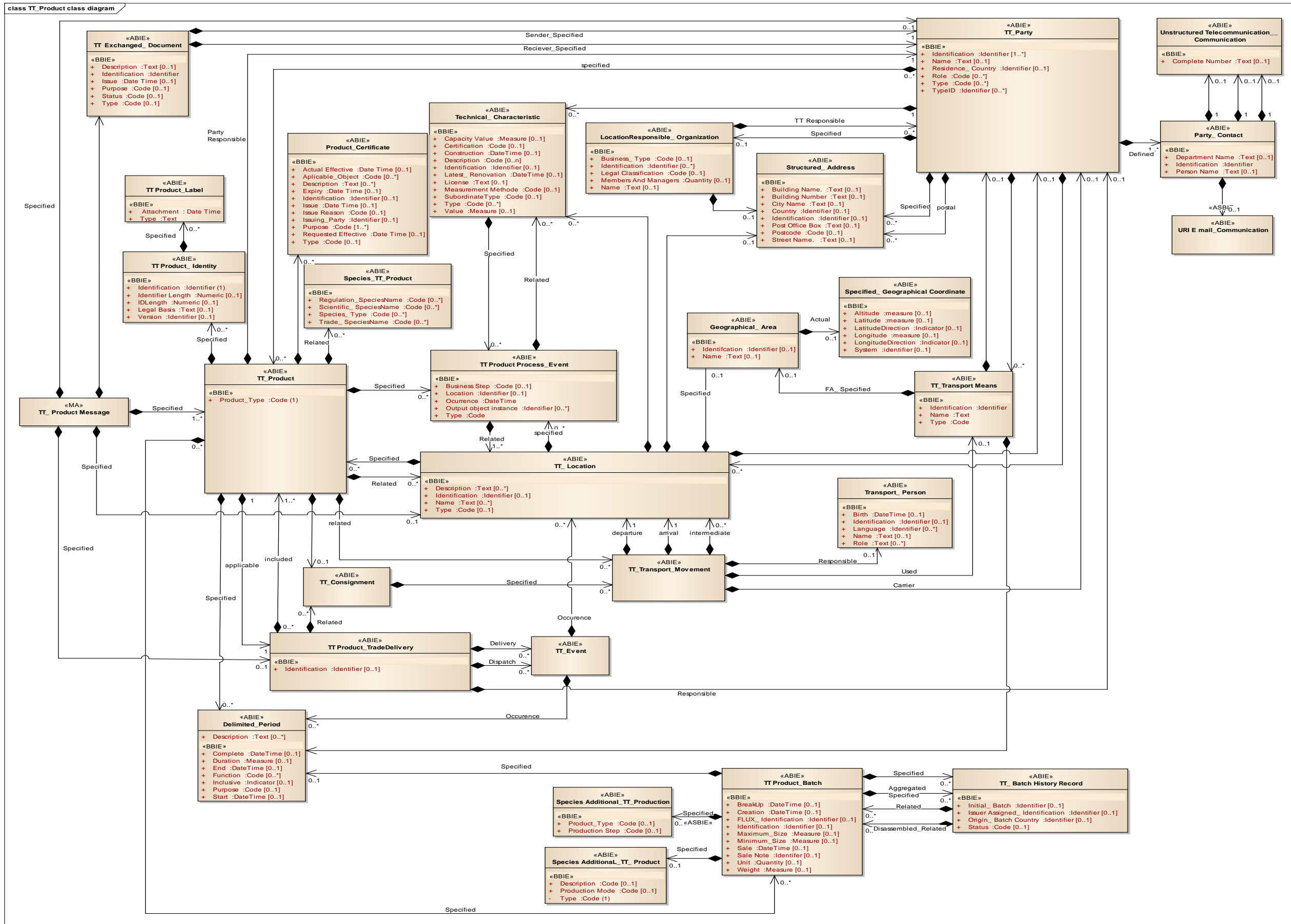


Figure 8 Class diagram in detail for Level 1 and 2, for the extended exchange of the animal or plant product data, location, processing and transport data.

5.6 Business Information Entities Level 1 and level 2

TT Exchanged_ Document.

Description: A collection of data for a piece of written, printed or electronic matter that is exchanged between two or more parties for Track and Trace (TT) purposes.

| Mult. | Business term | Rel. | Type | Description |
|-------|----------------|------|------------|--|
| 1 | Identification | Att | Identifier | The identifier for this TT exchanged document. |
| 0..1 | Description | Att | Text | The textual description of this TT exchanged document. |
| 0..1 | Type | Att | Code | The code specifying the type of TT exchanged document. |
| 0..1 | Issue | Att | Date Time | The date, time, date time, or other date time value of the issuance of this TT exchanged document. |
| 0..1 | Status | Att | Code | The code specifying the status of this TT exchanged document. |
| 0..1 | Purpose | Att | Code | The code specifying a purpose of this TT exchanged document. |

| Mult. Min | Max | Association | Description |
|--------------|-----|--|--|
| 1 | 1 | TT Exchanged_ Document. Sender_ Specified. TT_ Party | The sending TT party specified for this TT exchanged document. |
| 1 | 1 | TT Exchanged_ Document. Receiver_ Specified. TT_ Party | The receiving TT party specified for this TT exchanged document. |

TT_ Product.

Description: A Track and Trace (TT) product or batch of product(s).

| Mult. Min | Max | Business term | Rel. | Type | Description |
|--------------|-----|---------------|------|------|---|
| 1 | 1 | Type | Att | Code | The code specifying the type of product(s) such as wool, milk, leather, meat, coffee beans, hemp, bamboo, tea leaves, etc |

| Mult. Min | Max | Association | Description |
|--------------|-----|---|--|
| 1 | 1 | TT_ Product. Responsible. TT_ Party | The party responsible for this TT product. |
| 0 | 1 | TT_ Product. Applicable. TT Product_ Trade Delivery | The product trade delivery applicable for this TT product. |

| Mult. | | Association | Description |
|-------|-----------|---|--|
| Min | Max | | |
| 0 | unbounded | TT_Product. Related. TT_Consignment | The consignment specified for this TT product. |
| 0 | unbounded | TT_Product. Specified. TT Product_Batch | A product batch specified for this TT product. |
| 0 | unbounded | TT_Product. Specified. TT Product_Identity | A product identity specified for this TT product. |
| 0 | unbounded | TT_Product. Specified. Delimited_Period | A delimited period specified for this TT product. |
| 0 | unbounded | TT_Product. Specified. TT Product Process_Event | A product process event specified for this TT product. |
| 0 | unbounded | TT_Product. Specified. Product_Certificate | A product certificate specified for this TT product. |
| 0 | unbounded | TT_Product. Specified. Species TT_Product | A species related to this TT product. |
| 0 | unbounded | TT_Product. Related. TT_Location | A location related to this TT product. |
| 0 | unbounded | TT_Product. Related. TT_Transport Movement | A transport movement related to this TT Product |

Species_TT_Product

Description: The species, such as animal or plant species, for the product(s) composing this Track and Trace (TT) product.

| Mult. | | Business term | Rel. | Type | Description |
|-------|-----------|-------------------------|------|------|--|
| Min | Max | | | | |
| 0 | unbounded | Species_Type | Att | Code | A code specifying a type for this species TT product. |
| 0 | unbounded | Scientific_Species Name | Att | Code | A code specifying a scientific species name for this species TT product. |
| 0 | unbounded | Regulation_Species Name | Att | Code | A code specifying a regulation species name for this species TT product. |
| 0 | unbounded | Trade_Species Name | Att | Code | A code specifying a trade species name for this species TT product. |
| 0 | unbounded | Additional_Type | Att | Code | A code specifying an additional type for this species TT product. |

TT Product_Identity

Description: Information which identifies a Track and Trace (TT) product or batch of products.

| Mult. | Business term | Rel. | Type | Description |
|-------|-------------------|------|------------|---|
| 1 | Identification | Att | Identifier | The identifier for this individual TT product or batch of TT products |
| 0..1 | Identifier Length | Att | Numeric | The length of the identifier in this TT product identity. |
| 0..1 | Legal basis | Att | Text | The legal basis, expressed as text, for this TT product identity. |

| | | | | |
|------|---------|-----|------------|--|
| 0..1 | Version | Att | Identifier | The identifier of the version of this TT Product identity. |
|------|---------|-----|------------|--|

| Mult. Min Max | | Association | Description |
|-----------------------|-----------|--|---|
| 0 | unbounded | TT Product_Identity. Specified. TT Product_Label | A label specified for this TT product identity, such as an identification tag, a transponder or a tattoo. |

TT Product_Label

Description: An attachment to a Track and Trace (TT) product for identification purposes.

| Mult. | Business term | Rel. | Type | Description |
|-------|---------------|------|-----------|---|
| 0..1 | Attachment | Att | Date Time | The date of attachment of this TT product label. |
| 0..1 | Type | Att | Text | The type, expressed as text, for this TT product label. |

Product_Certificate

Description: A collection of data for a piece of written, printed or electronic matter that provides information or evidence about the product.

| Mult. | Business term | Rel. | Type | Description |
|-------|---------------------|------|------------|--|
| 0..1 | Identification | Att | Identifier | The identifier for this product certificate document |
| 0..1 | Issue | Att | Date Time | The date, time, date time, or other date time value when this product certificate was issued. |
| 0..1 | Expiry | Att | Date Time | The date, time, date time, or other date time value when this product certificate expires. |
| 0..1 | Issue reason | Att | Code | The code specifying the reason why the product certificate was issued. |
| 0..1 | Type | Att | Code | The type of this product certificate document, expressed as a code. |
| 0..1 | Requested Effective | Att | Date Time | The requested effective date, time, date time or other date time value for this product certificate. |
| 0..1 | Actual Effective | Att | Date Time | The actual effective date, time, date time or other date time value for this product certificate. |
| 0..* | Description | Att | Text | A textual description of this product certificate. |
| 0..* | Applicable_Object | Att | Code | A code specifying an object, such as item, animal, person or organisation applicable for this product certificate. |
| 0..1 | Issuing_Party | Att | Identifier | The identifier for the issuing party of this product certificate. |
| 1..* | Purpose | Att | Code | A code specifying the purpose of this product certificate. |

TT Product Process_Event

Description: The processing event of a Track and Trace (TT) product, such as milking, shaving, slaughtering, skinning, in a particular production or processing location where products are manufactured from animals or plants (living or dead) or products into products, such as packaging of products.

| Mult. | Business term | Rel. | Type | Description |
|-------|------------------------|------|------------|---|
| 0..1 | Location | Att | Identifier | The identifier of the location for this TT product process event. |
| 1 | Type | Att | Code | The code specifying the type of TT product process event. |
| 1 | Occurance | Att | Date Time | The date, time, date time, or other date time value of the occurrence of this TT product process event. |
| 0..n | Output Object_Instance | Att | Identifier | An identifier for an output object instance of this TT product process event. |
| 0..1 | Business Step | Att | Code | The code specifying the business step for this TT product process event. |

| Mult. | | Association | Description |
|-------|-----|---|--|
| Min | Max | | |
| 1 | n | TT Product Process_Event. Related. TT_Location | A location related to this TT product process event. |
| 0 | n | TT Product Process_Event. Related. Technical_Characteristic | A technical characteristic related to this TT product process event. |

TT_Location

Description: A physical place related to a Track and Trace (TT) process

| Mult. | Business term | Rel. | Type | Description |
|-------|----------------|------|------------|---|
| 0..1 | Identification | Att | Identifier | The unique identifier for this TT location. |
| 0..* | Name | Att | Text | A name, expressed as text, of this TT location. |
| 0..1 | Type | Att | Code | The code specifying the type of TT location. |
| 0..* | Description | Att | Text | A textual description for this TT location. |

| Mult. | | Association | Description |
|-------|-----|---|---|
| Min | Max | | |
| 0 | n | TT_Location. Specified. Product Process_Event | A product process event specified for this TT location. |

| Mult. | | Association | Description |
|-------|-----|---|--|
| Min | Max | | |
| 0 | n | TT_Location. Applicable. Technical_Characteristic | A technical characteristic applicable to this TT location. |
| 0 | 1 | TT_Location. Responsible. TT_Party | The party responsible for this TT location. |
| 0 | n | TT_Location. Specified. TT_Product | A product specified for this TT location. |
| 0 | 1 | TT_Location. Specified. Geographical_Area | The geographical area specified for this TT location. |

Technical_Characteristic

Description: A prominent technical attribute or aspect.

| Mult. | Business term | Rel. | Type | Description |
|-------|----------------|------|------------|--|
| 0..1 | Type | Att | Code | A code specifying a type of technical characteristic. |
| 0..1 | Description | Att | Code | A code specifying a description of this technical characteristic. |
| 0..1 | Identification | Att | Identifier | The identifier for this technical characteristic. |
| 0..1 | Value | Att | Measure | The capacity, expressed as a measure, such as a production volume, a surface area or a number of animals, for this technical characteristic. |
| 0..1 | Certification | Att | Code | The code specifying the certification granted to this technical characteristic. |
| 0..1 | License | Att | Text | The license, expressed as text, for this technical characteristic. |
| 0..1 | Construction | Att | Date Time | The date, time, date time, or other date time value of the construction of this technical characteristic. |
| 0..1 | Renovation | Att | Date Time | The date, time, date time, or other date time value of the latest renovation of this technical characteristic. |

| Mult. | | Association | Description |
|-------|-----|--|---|
| Min | Max | | |
| 0 | n | Technical_Characteristic. Specified. TT Product Process_Event | A Track and Trace (TT) product process event specified for this technical characteristic. |

Location Responsible Organization

Description: The organization responsible for a location.

| Mult. | Business term | Rel. | Type | Description |
|-------|----------------|------|------------|--|
| 0..n | Identification | Att | Identifier | An identifier for the organization responsible for a |

| | | | | |
|------|----------------------|-----|----------|--|
| | | | | location. |
| 0..1 | Name | Att | Text | The name, expressed as text, of the organization responsible for a location. |
| 0..1 | Type | Att | Code | The code specifying the business type of the organization responsible for a location. |
| 0..1 | Members And Managers | Att | Quantity | The number of members and managers in the organization responsible for a location. |
| 0..1 | Legal Classification | Att | Code | The code specifying the legal classification of the organization responsible for a location. |

| Mult. | | Association | Description |
|-------|-----|---|---|
| Min | Max | | |
| 0 | 1 | Location Responsible_Organization. Physical. Structured_Address | The physical structured address of the organization responsible for a location. |
| 0 | n | Location Responsible_ Organization. TT_ Responsible. TT_Party | The party responsible for the Track and Trace (TT) information related to an organization responsible for a location. |

Specified_Geographical Coordinate

Description: The latitude, longitude and altitude of a place, by which its relative situation on the globe is known.

| Mult. | Business term | Rel. | Type | Description |
|-------|---------------------|------|------------|---|
| 0..1 | Altitude | Att | Measure | The measure of the altitude that reflects the vertical elevation of an object above a surface for this specified geographical coordinate. |
| 0..1 | Latitude | Att | Measure | The measure of the longitude as an angular distance east or west from the Greenwich meridian to the meridian of a specific place for this specified geographical coordinate. |
| 0..1 | Longitude | Att | Measure | The measure of the latitude as an angular distance north or south from the Equator meridian to the meridian of a specific place for this specified geographical coordinate. |
| 0..1 | Latitude Direction | Att | Indicator | The indication of whether the latitude compass direction from the Equator meridian to the meridian of a specific place for this specified geographical coordinate is North (+) or South |
| 0..1 | Longitude Direction | Att | Indicator | The indication of whether the longitude as a compass direction from the Greenwich meridian to the meridian of a specific place is East (+) or West (-) for this specified geographical. |
| 0..1 | System | Att | Identifier | The identifier of the system used for measuring this specified geographical coordinate. |

Structured_Address

Description: The location, using a structured address format, at which a location, a technical structure, (group of) animals, a particular organization or person may be found or reached.

| Mult. | Business term | Rel. | Type | Description |
|-------|-----------------|------|------------|---|
| 0..1 | Identification | Att | Identifier | An identifier for this tracking and tracing structured address. |
| 0..1 | Postcode | Att | Code | The code specifying the postcode in the structured address. |
| 0..1 | Street Name | Att | Text | The name, expressed as text, of a street or thoroughfare in the structured address. |
| 0..1 | Building Name | Att | Text | The name, expressed as text, of a building, a house or other structure on a street in the structured address. |
| 0..1 | Building Number | Att | Text | The number, expressed as text, of a building or house on a street at this structured address. |
| 0..1 | City Name | Att | Text | The name, expressed as text, of the city, town or village in the structured address. |
| 0..1 | Country | Att | Identifier | The unique identifier of a country in the structured address (Reference ISO 3166 and UNECE Rec 3). |

Geographical_Area

Description: The identifier for this geographical area.

| Mult. | Business term | Rel. | Type | Description |
|-------|----------------|------|------------|---|
| 0..1 | Identification | Att | Identifier | The identifier for this geographical area. |
| 0..1 | Name | Att | Text | The name, expressed as text for this specified geographical area. |

| Mult. | Association | Description |
|-------|-------------|---|
| Min | Max | |
| 0 | 1 | Geographical_Area. Actual. Specified_Geographical Coordinate The actual geographical coordinate specified for this area. |

Delimited_Period

Description: A period of time from a start date time onwards up to an end date time.

| Mult. | Business term | Rel. | Type | Description |
|-------|---------------|------|-----------|--|
| 0..1 | Start | Att | Date Time | The date, time, date time or other date time value for the start of this delimited period. |
| 0..1 | End | Att | Date Time | The date, time, date time or other date time value for the end of this delimited period. |

| | | | | |
|------|-------------|-----|-----------|--|
| 0..1 | Duration | Att | Measure | The measure of the length of time for this delimited period such as hours, days, weeks, months or years. |
| 0..1 | Complete | Att | Date Time | The date, time, date time or other date time value for a complete delimited period of time expressed as a specific month, a specific week. |
| 0..* | Function | Att | Code | A code specifying a function of this delimited period, such as fiscal period, accounting period. |
| 0..1 | Inclusive | Att | Indicator | The indication of whether or not the start and end dates are included in this delimited period. |
| 0..1 | Purpose | Att | Code | The code specifying the purpose of this delimited period. |
| 0..* | Description | Att | Text | A textual description of this delimited period of time. |

TT Product_Batch

Description: A group of Track and Trace (TT) products dealt with together

| Mult. | Business term | Rel. | Type | Description |
|-------|----------------------|------|------------|---|
| 0..1 | Identification | Att | Identifier | The identifier for this TT product batch. |
| 0..1 | Creation | Att | Date Time | The date, time, date time, or other date time value of the creation of this TT product batch. |
| 0..1 | Break up | Att | Date Time | The date, time, date time, or other date time value of the break up of this TT product batch. |
| 0..1 | Sale | Att | Date Time | The date, time, date time, or other date time value of the sale for this TT product batch. |
| 0..1 | Sales Note | Att | Identifier | The identifier for the sales note for this TT product batch. |
| 0..1 | FLUX_ Identification | Att | Identifier | The Fisheries Language for Universal eXchange (FLUX) identifier for this TT product batch. |
| 0..1 | Minimum_ Size | Att | Measure | The minimum size, expressed as a measure, of this TT product batch. |
| 0..1 | Maximum_ Size | Att | Measure | The maximum size, expressed as a measure, of this TT product batch. |
| 0..1 | Unit | Att | Quantity | The number of units in this TT product batch. |
| 0..1 | Weight | Att | Measure | The weight, expressed as a measure, for this TT product batch. |

| Mult. | | Association | Description |
|-------|-----|---|---|
| Min | Max | | |
| 0 | 1 | TT Product_Batch. Specified. Delimited_Period | The delimited period specified for this TT product batch. |
| 0 | n | TT Product_Batch. Aggregated_ Specified. TT_ Batch History Record | An aggregated batch history record specified for this TT product batch. |

| Mult. | | Association | Description |
|-------|-----|--|---|
| Min | Max | | |
| 0 | n | TT Product_Batch. Specified. TT_Batch History Record | A batch history record specified for this TT product batch. |
| | | | |
| | | | |

TT_Batch History Record

Description: A Track and Trace (TT) batch history record which has a parent or child relationship to another TT batch history record.

| Mult. | Business term | Rel. | Type | Description |
|-------|----------------|------|------------|--|
| 0..1 | Batch | Att | Identifier | The initial identifier for this TT batch history record. |
| 0..1 | Identification | Att | Identifier | The identifier assigned by the issuer for this TT batch history record. |
| 0..1 | Country | Att | Identifier | The identifier of the country of origin for the batch in this TT batch history record. |

| Mult. | | Association | Description |
|-------|-----------|---|--|
| Min | Max | | |
| 0 | unbounded | TT_Batch History Record. Disassembled_Related. TT Product_Batch | A related disassembled product batch (batch broken up into new separately identified product batches), for this TT batch history record. |
| 0 | unbounded | TT_Batch History Record. Related. TT Product_Batch | A product batch related to this TT batch history record. |

TT Product_Trade Delivery

Description: The shipping arrangements and movement of products including despatch and delivery.

| Mult. | Business term | Rel. | Type | Description |
|-------|----------------|------|------------|--|
| 0..1 | Identification | Att | Identifier | The identifier for this TT product trade delivery. |

| Mult. | | Association | Description |
|-------|-----|--|---|
| Min | Max | | |
| 0 | 1 | TT Product_Trade Delivery. Responsible. TT_Party | The party responsible for this TT product trade delivery. |
| 0 | n | TT Product_Trade Delivery. Included. TT_Product | A product included in this TT product trade delivery. |
| 0 | n | TT Product_Trade Delivery. Related. TT_Consignment | A consignment related to this TT product trade delivery. |

| Mult. | | Association | Description |
|-------|-----|--|--|
| Min | Max | | |
| 0 | n | TT Product _ Trade Delivery. Delivery. TT_ Event | A delivery event specified for this TT product trade delivery. |
| 0 | n | TT Product _ Trade Delivery. Despatch. TT_ Event | A despatch event specified for this TT product trade delivery. |

TT_ Transport Movement

Description: The conveyance (physical carriage) of people, animals, goods, or other objects which are subject to a Track and Trace (TT) process.

| Mult. | | Association | Description |
|-------|-----|---|--|
| Min | Max | | |
| 0 | n | TT_ Transport Movement. Arrival. TT_ Event | An arrival event for this TT transport movement. |
| 0 | n | TT_ Transport Movement. Departure. TT_ Event | A departure event for this TT transport movement. |
| 0 | n | TT_ Transport Movement. Intermediate. TT_ Event | An intermediate event for this TT transport movement. |
| 0 | 1 | TT_ Transport Movement. Used. TT_ Transport Means | The transport means used for this TT transport movement. |
| | | | |
| | | | |

TT_ Transport Means

Description: The identification and characteristic information for a TT transport means.

| Mult. | Business term | Rel. | Type | Description |
|-------|----------------|------|------------|--|
| 1 | Identification | Att | Identifier | The identifier for this TT transport means. |
| 1 | Name | Att | Text | The name, expressed as text, of this TT transport means. |
| 1 | Type | Att | Code | The code specifying a type of TT transport means. |

| Mult. | | Association | Description |
|-------|-----|--|--|
| Min | Max | | |
| 0 | 1 | TT_ Transport Means. TT_ Responsible. TT_ Party | The party responsible for information related to this TT transport means. |
| 0 | 1 | TT_ Transport Means. FA_ Specified. Delimited_ Period | The Fishing Activity (FA) delimited period specified for this TT transport means. |
| 0 | 1 | TT_ Transport Means. FA_ Specified. Geographical_ Area | The Fishing Activity (FA) geographical area specified for this TT transport means. |

TT_ Consignment

Description: A consignment of people, animals, goods, or other objects which are subject to a Track and Trace (TT) process.

| Mult. Min Max | | Association | Description |
|---------------------|---|--|---|
| 0 | n | TT_ Consignment. Specified. TT_ Transport Movement | A transport movement specified for this TT consignment. |

TT_ Event

Description: A significant Track and Trace (TT) occurrence or happening.

| Mult. Min Max | | Association | Description |
|---------------------|---|--|---|
| 0 | n | TT_ Event. Occurrence. TT_ Location | A TT location where this event occurs. |
| 0 | n | TT_ Event. Occurrence. Delimited_ Period | A delimited period of time during which this TT event occurs. |

Species Additional_ TT_ Production

Description: Additional information about the Track and Trace (TT) production for this product.

| Mult. | Business term | Rel. | Type | Description |
|-------|-----------------|------|------|--|
| 0..1 | Production Step | Att | Code | The code specifying additional information about the process step of this TT production. |
| 0..1 | Product_ Type | Att | Code | The code specifying additional information about the type of product produced for this production process. |

Species Additional_ TT_ Product

Description: Additional information about the Track and Trace (TT) product stage for this species.

| Mult. | Business term | Rel. | Type | Description |
|-------|-----------------|------|------|--|
| 1 | Type | Att. | Code | The code specifying an additional type for this species TT product |
| 0..1 | Description | Att | Code | The code specifying an additional description for this species TT product. |
| 0..1 | Production Mode | Att | Code | The code specifying an additional production mode for this species TT product. |

TT_Party

Description: An individual, group, or body related to a Track and Trace (TT) process.

| Mult. | Business term | Rel. | Type | Description |
|-------|-------------------|------|------------|---|
| 1..n | Identification | Att | Identifier | An identifier for this TT party. |
| 0..n | Type | Att | Code | A code for the type for this TT party. |
| 0..1 | Name | Att | Text | A name expressed as text for this TT party. |
| 0..n | Role | Att | Code | A code for the role for this TT party. |
| 0..1 | Residence Country | Att | Code | The code for the country of residence of this TT party, , such as the country in which a person lives or in which a corporation has its place of incorporation. |

| Mult. Min | Max | Association | Description |
|--------------|-----|--|--|
| 0 | n | TT_Party. Defined. Party_Contact | A defined contact for this TT party. |
| 0 | n | TT_Party. Specified. Structured_Address | A structured address specified for this TT party. |
| 0 | n | TT_Party. Postal. Structured_Address | A structured postal address for this TT party. |
| 0 | n | TT_Party. Managed. Technical_Characteristic | A technical characteristic managed by this TT party. |
| 0 | n | TT_Party. Specified. TT_Location | A location specified for this TT party. |
| 0 | n | TT_Party. Specified. TT_Product | A TT product specified for this TT party. |
| 0 | 1 | TT_Party. Specified. Location_Responsible_Organization | The organization responsible for the location specified for this TT party. |
| 0 | n | TT_Party. Managed. TT_Transport_Means | A transport means managed by this TT party. |

Party_Contact

Description: A person or department that acts as a point of contact for a party.

| Mult. | Business term | Rel. | Type | Description |
|-------|-----------------|------|------------|---|
| 1..1 | Identification | Att | Identifier | An unique identifier of this party contact. |
| 0..1 | Person Name | Att | Text | A name expressed as text of the person for this party contact. |
| 0..1 | Department Name | Att | Text | A name, expressed as text, of the department to which this party contact belongs. |

| Mult. Min | Max | Association | Description |
|--------------|-----|--|---|
| 0 | 1 | Party_Contact. Direct_Telephone. Unstructured_ | The direct unstructured telephone communication |

| Mult. | | Association | Description |
|-------|-----|---|---|
| Min | Max | | |
| | | Telecommunication_ Communication | information for this party contact. |
| 0 | 1 | Party_Contact. Mobile_Telephone. Unstructured_ Telecommunication_ Communication | The mobile unstructured telephone communication information for this party contact. |
| 0 | 1 | Party_Contact. Fax. Unstructured_ Telecommunication_ Communication | The fax unstructured telecommunication information for this party contact. |
| 0 | 1 | Party_Contact. URI. Email_ Communication | The email Uniform Resource Identifier (URI) communication information for this party contact. |

Unstructured Telecommunication_ Communication: Description: An exchange of information between persons and/or organizations.

| Mult. | Business term | Rel. | Type | Description |
|-------|-----------------|------|------|--|
| 0..1 | Complete Number | Att | Text | The text string of characters that make up the complete number for this specified communication. |

URI Mail Communication

Description: The Uniform Resource Identifier (URI), such as a web or an email address, for this specified communication.

| Mult. | Business term | Rel. | Type | Description |
|-------|---------------|------|------------|---|
| 0..1 | URI | Att | Identifier | The Uniform Resource Identifier (URI), such as a web or an email address, for this specified communication. |

5.7 Business rules

The Tracking and Tracing message is used to exchange information between the business partners in production, trade, processing and transport of products, the tracking and tracing parties, authorities and consumers. The message contains not any specified business rules.

The different receiving parties may get dedicated content, according to their information requirements and conform the license to distribute the data.