

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE



**UN/CEFACT**

SIMPLE, TRANSPARENT AND EFFECTIVE PROCESSES  
FOR GLOBAL BUSINESS

**BUSINESS REQUIREMENTS SPECIFICATION  
(BRS)**

**UN/CEFACT Domain: Agriculture**

**Business process : Animal traceability data exchange**

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## Document Change history log

| Date of change | Version | Paragraphs changed  | Summary of changes  |
|----------------|---------|---------------------|---|
| October 2013   | 0.1     |                     | Creation  |
| March 2014     | 0.2     | 1, 3, 4.1, 5.1, 5.2 | Change of scope   |
| March 2014     | 0.3     | all                 | Update results workshop 26 March  |
| April 2014     | 0.4     | Chapter 5           | Update diagrams, add ABIE tables.   |
| Aril 2014      | 0.5     | All                 | Update chapter 5 and comments from Geneva forum discussion processed.   |
| Mai 2014       | 0.6     | All                 | Update  |
| 2014 June 2    | 0.7     | AEE                 | Schemas update  |
| September 2014 | 0.8     |                     | completed   |
| October 2014   | 0.9     |                     | Update schemas, update level 0  |
| November 2014  | 0.92    |                     | Update comments from New Dehli session  |
| December 2014  | 0.93    |                     | Agreed by project. Final version. For ODP 5, public review  |
| October 2015   | 0.96    |                     | Result of the harmonization process towards the CCL15B.<br>Update of Level0, merging of Level1 and Level2, many objects are restructured due to harmonization process.<br>New class diagrams, and BIE tables. |
| November 2015  | 1.0     |                     | Version 0.96 Agreed at UNCEFACT forum.<br>Final version 1.0   |
| March 2017     | 1.1     | 5.6.2               | Harmonisation with CCL specifications and cardinalities<br>Individual Animal = Animal Batch (of one)<br>Animal Certificate = Product Certificate  |
| April 2017     | 1.2     | 5.6.2               | Removal Transport Person, Location Responsible Organisation   |

# 1 Preamble

The project 'Animal Traceability Data Exchange' has a very broad scope. In this project we will start sub projects dedicated to a manageable scope.

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

The present document describes traceability processes for live animals, groups of animals and fish during transport within a country or across borders.

The species concerned are: porcine, ovine, caprine, bovine, equine, poultry and fish.

The business case supported by these processes is:

- All the business parties involved in the chain record T&T (track and trace) information on animals and animal movements in a Traceability system
- A T&T requesting party (business or government) has a question about an animal, group of animals, 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

The term "animal" designates the individual animal (e.g. cow) but also the group of animals (e.g. poultry, pigs, fish.).

For the purpose of this document, the definition of traceability is: 'Traceability is retrieving information about the origin and history of an animal, a group of animals or animal products.'

The OIE (World Organization for Animal Health) gives the following definition about animal traceability: Animal traceability is the ability to follow an animal or a group of animals during all the stages of its life.

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(s) or group of animals.
2. Questions about animals, locations, transports and responsible parties.
3. Questions about breeding, animal holding processes and events, health and sanitary issues, drugs (extend the work on 'Livestock Live Record' to other animal species).

The outputs will be the harmonized XML schemas to support 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 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

## 3 ISO 19987 (EPCIS) 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 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.

| Categories                     | Description and Values   |
|--------------------------------|--|
| <b>Business Process</b>        | Animal traceability data exchange  |
| <b>Product Classification</b>  | Animal traceability data   |
| <b>Industry Classification</b> | Agricultural and fishery sector  |
| <b>Geopolitical</b>            | Global   |
| <b>Official Constraint</b>     | European Regulations<br>National regulation<br>Local applicable regulation   |
| <b>Business Process Role</b>   | Exchange of traceability data  |
| <b>Supporting Role</b>         | None   |
| <b>System Capabilities</b>     | Agreed level of security to protect data integrity<br>Network of connected T&T databases<br>System of authorizations and keys for retrieving T&T information by T&T requesting parties |

### 4.2 Context

Important is:

- all species can be tracked and traced using a common model
- the track & trace process for individual animals and for batches of animals is based on the same model
- for identifying the involved parties for the specified animals a generic standard supporting tracking and tracing of commodities of all kinds can be used.

## 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 movement data can be registered, data can be searched and data can be retrieved. This data is not public information. The business partners remain in control over the access to the data.

The traceability data could also be sent between parties without using such data bases.

| Number | Business Requirement Statement  |
|--------|---|
| 0.     | Track and trace data messages must use existing standards and methods allowing to provide information   |
| 1.     | An individual animal or batch of animals (indicator (e.g. tag) number(s), transports, locations, responsible parties)   |
| 2.     | A transport event (period, consignment, shipment, transport means, equipment, locations, animals involved, indicator (e.g. tag) number(s), responsible parties) |
| 3.     | A location (period, animals, departure and destination of animals, dates of arrivals and departures, responsible parties)                                       |
| 4.     | Responsible party (period, locations, animals)  |
| 5.     | Interoperability between different systems  |
| 6.     | Independent of animal species and national and / or geographical locations  |

Animal traceability data can be exchanged on a regular basis, e.g. for consumer information. Animal traceability data can also be exchanged on an ad hoc basis, e.g. in case of animal disease incidents.

## 5.2 Definitions of Business Terms

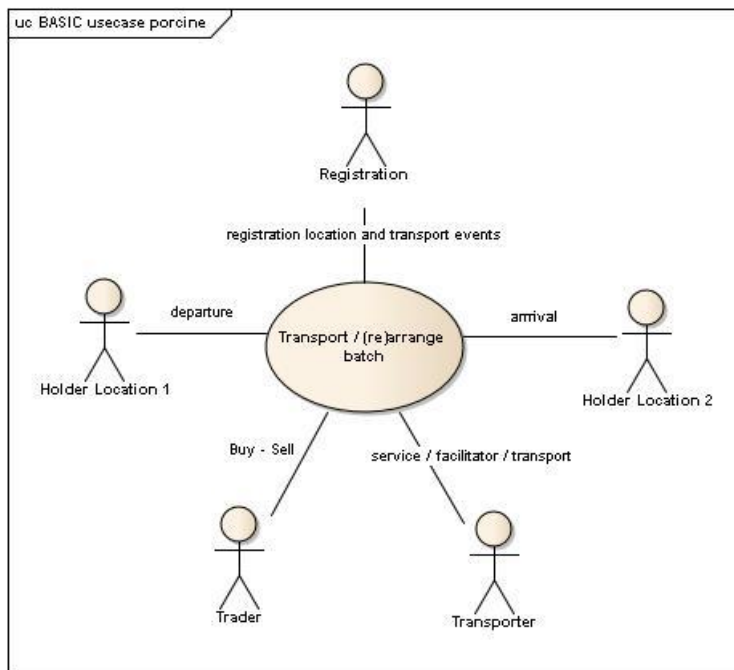
|  |   |
|--|---|
| <b>Tracking and tracing requesting party</b> | Person, organization or authority needing tracking and tracing information on animal(s) for their business processes, or following an incident or crises with respect to animal health, food safety or human health. In the event that the traceability system is regulated, the traceability data could also be used to verify compliance and enforce laws.  |
| <b>Registration</b>                          | Administration of data according to a specific set of criteria. (By example animal registrations and transport registration)  |
| <b>Event registration</b>                    | An administration of event identifying information, which can be searched for T&T requests.   |
| <b>Batch of animals</b>                      | An identified group of not individually identified live or dead animals   |
| <b>Transport</b>                             | Movement of animal(s) or good(s) from one location to another.  |
| <b>Traceability</b>                          | <p>The definition of traceability is ‘Traceability is retrieving information about the origin and history of an animal, a group of animals or animal products.’</p> <p>The OIE (World Organization for Animal Health) defines: definition about animal traceability: Animal traceability is the ability to follow an animal or a group of animals during all the stages of its life.)</p> <p>Traceability information should give an answer on the Why, What, Where and When questions about a (group of) animal(s) or an animal related event.</p> |
| <b>Location</b>                              | An identified geographical point or area where an event related to animal traceability occurs.  |
| <b>Party</b>                                 | An identified person, organization or authority.  |



## 5.3 Business Requirements View

### 5.3.1 Use case description

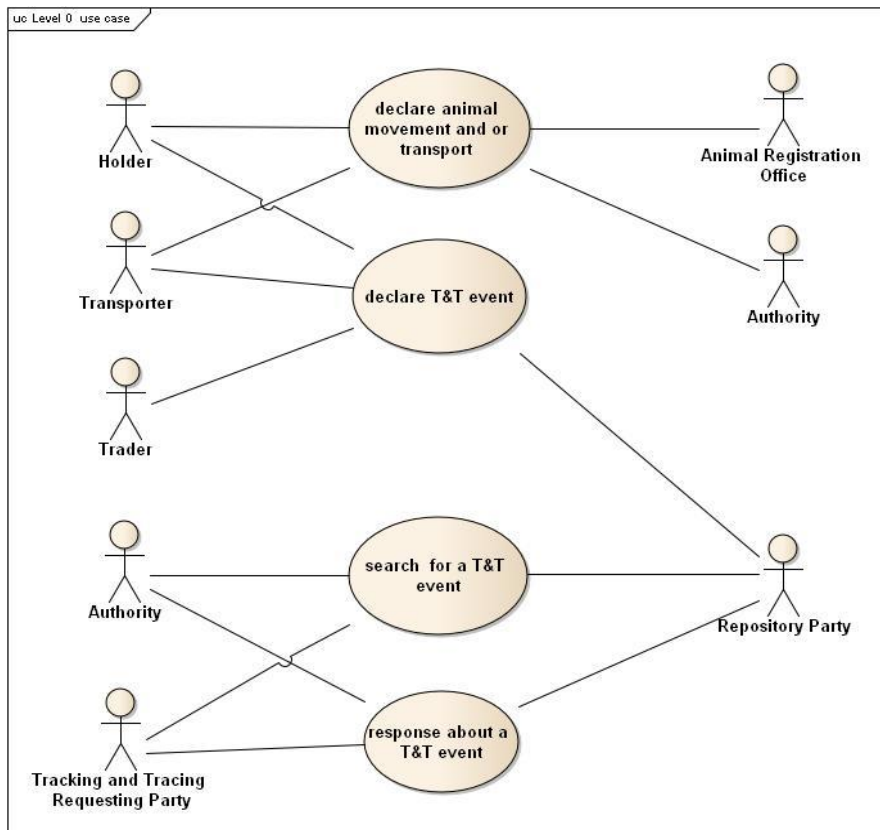
For understanding the business of animal holding and transport the first use case (figure 1) shows the relation between the different stakeholders in animal holding and animal transportation.



**Figure 1 Basic use case animal holding and transport**

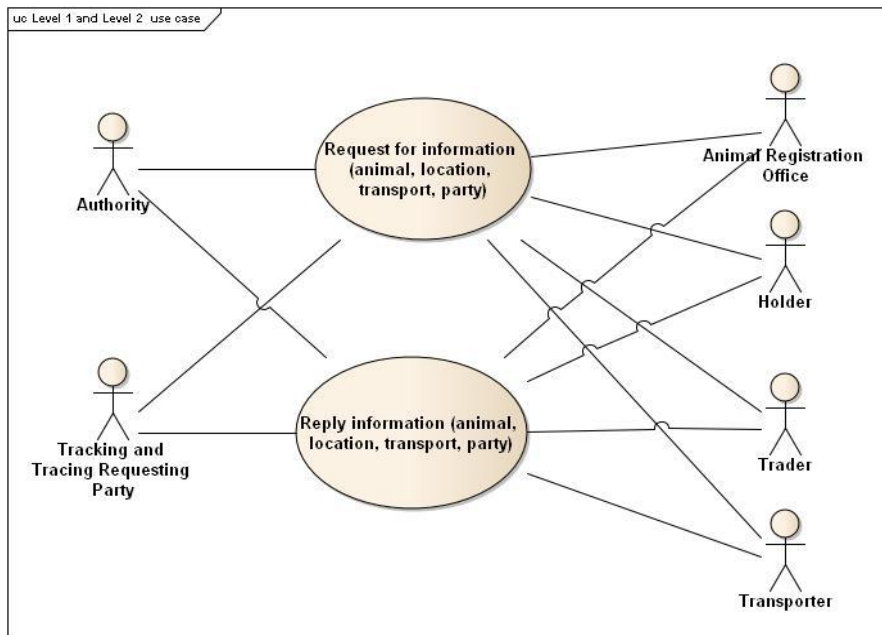
The real use case in a tracking and tracing event is the one below (figure 2), where a specific party needs T&T information about an animal, a group of animals, a transport, a location or the responsible party.

In this Level 0 (fig 2), one use case is identified about the declaration of animal data and transport at the responsible office. A second use case is identified about the declaration of these events in a tracking and tracing repository. The third and fourth use cases deal with the search and request in the tracking and tracing repository about animals, locations, transport and responsible parties.



**Figure 2 Level 0 use case tracking and tracing event**

The Level 1 and Level 2 (fig 3) use cases are about the information exchanged between the business partners, identified with the help of the T&T repository. In Level 1 and Level 2 the information exchange is based on a request and the response process. Level 1 is limited to basic data about animal, location, transport or responsible party. At Level 2 additional data about these issues 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 detail. In the class diagram the difference between Level 1 and Level 2 will be highlighted by use of different colours.



**Figure 3 Level 1 and 2 use case tracking and tracing event**

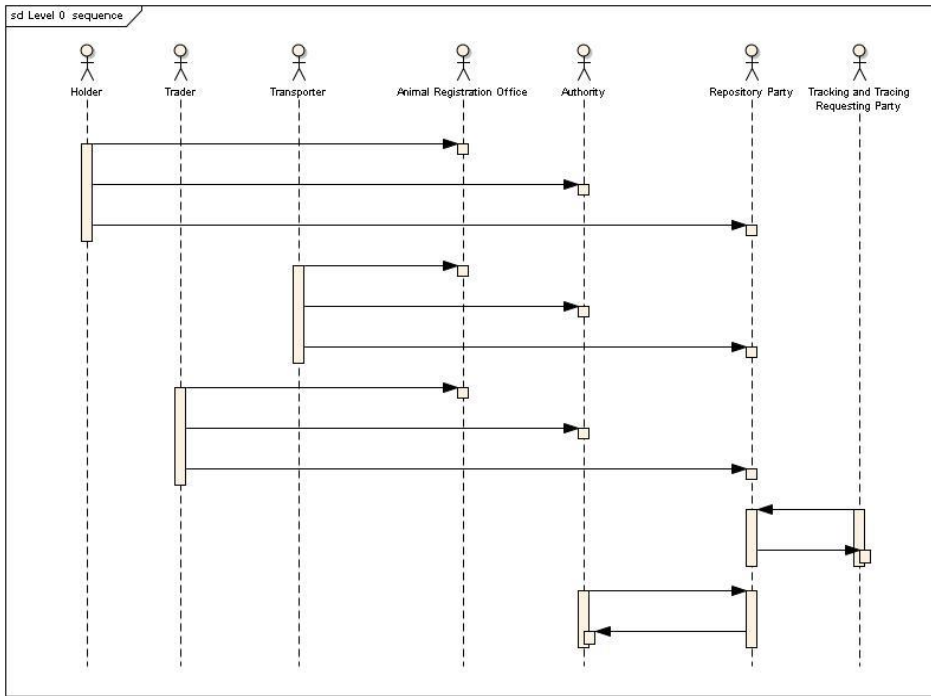
The diagrams of figure 2 and 3 illustrate the use cases to perform three business steps:

- Declare the animal holding / 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.
- Two sub-use cases are identified: Animal data and transport data to be exchanged between a registration party (national registration, producer organization, cooperatives, etc.) and a “tracing and tracking’ requesting party. The main data comprise the date and time of the event, animal data, transport data, location and involved parties.

Actually, the needs are the same for every species on traceability of animals.

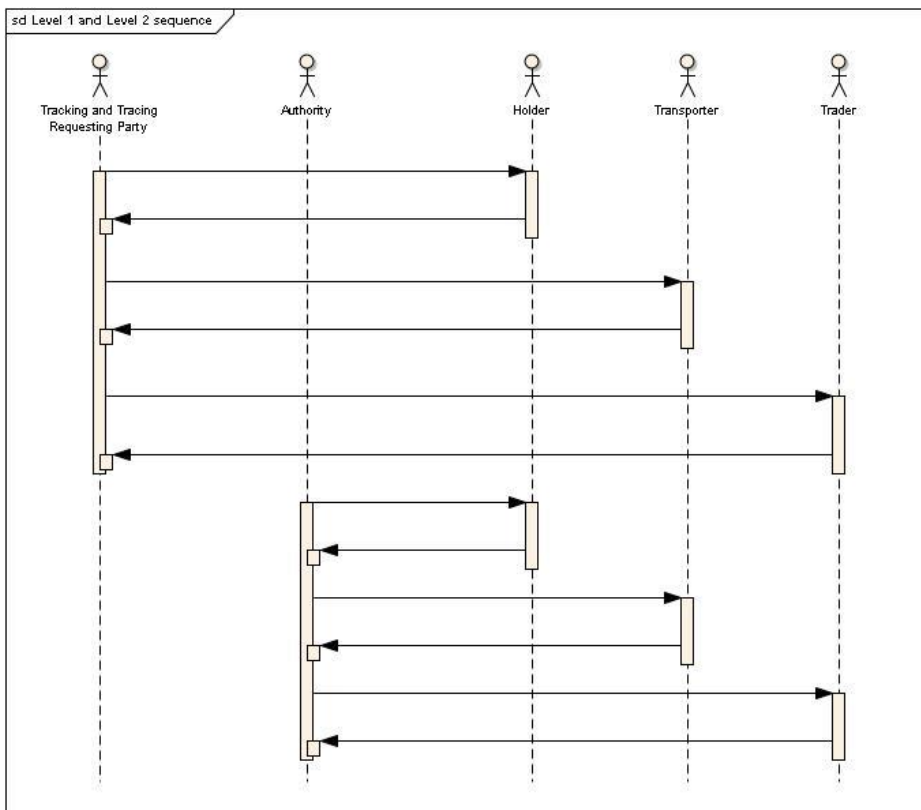
### Sequence diagrams

At Level 0 the sequence diagram for declaring the animal transport events, the declaration to the T&T repository and the search/request and reply to the repository in are shown in figure 4.



**Figure 4 Level 0. sequence diagram tracking and tracing**

At Level 1 and Level 2 the sequence is shown in figure 5.



**Figure 5. Level 1 and Level 2 sequence diagram tracking and tracing**

The identification of the responsible holder, trader or transporter is done at Level 0.

Level 1 and Level 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 Partner View-Participants and Stakeholders

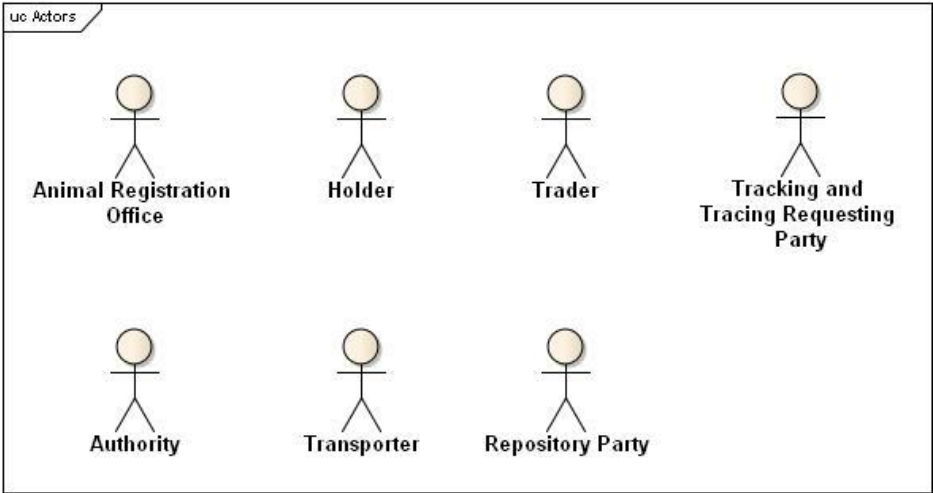


Figure 6. the business parties

### 5.3.1 Business Entity View- Entity States, Lifecycle and Conceptual Model

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

|                              |   |
|------------------------------|---|
| <b>Business process name</b> | Animal traceability and transport data exchange   |
| <b>Identifier</b>            |   |
| <b>Actors</b>                | Tracking and tracing requesting party<br>Animal Registration office<br>Holder<br>Trader<br>Transporter<br>Repository party<br>Authorities   |
| <b>Description</b>           | The tracking and tracing party sends a request for information on animal(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. |

|                        |   |
|------------------------|---|
| <b>Pre-condition</b>   | A network of related databases is in place<br>A system for authorizations is in place<br>Business parties control access to their data  |
| <b>Post-conditions</b> | <b>Success:</b> All the relevant information is retrieved out of the T&T system and sent to the T&T requesting party<br><b>Failure:</b> 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,...) |
| <b>Scenarios</b>       | Providing traceability and transport data information   |
| <b>Remarks</b>         |   |

This use case helps reducing risks (human and animal health) and economic losses in case of animal diseases or other irregularities.

## 5.4 The activity diagrams

The activity diagrams help identifying all the significant information flows between the business partners in the tracking and tracing processes.

### 5.4.1 Activity Diagram at Level 0 for search and request T&T information

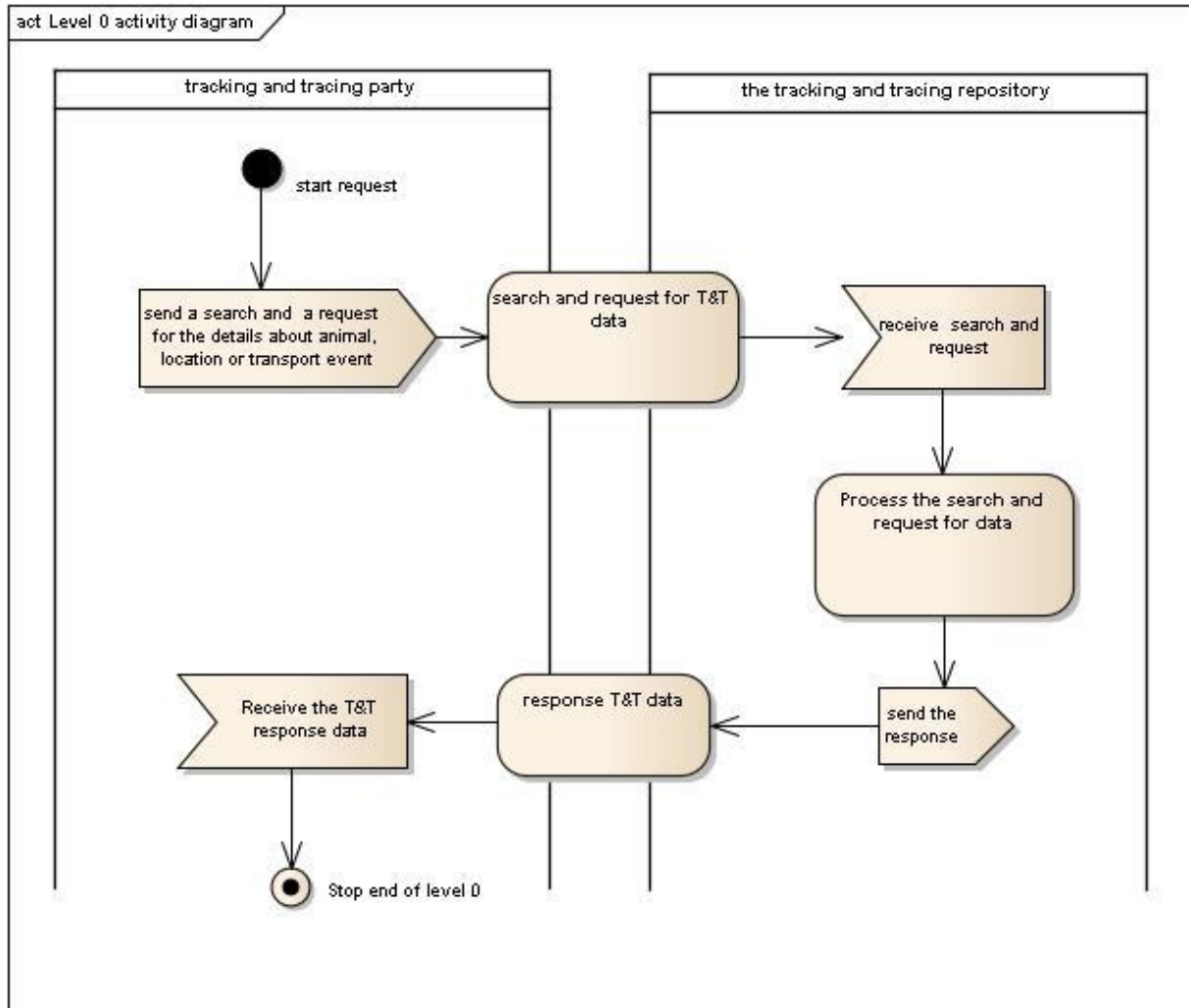


Figure 7 activity diagram for Level 0

### 5.4.2 Activity Diagram at Level 1 and Level 2 for the request and response T&T data about animal, location, transport or responsible party.

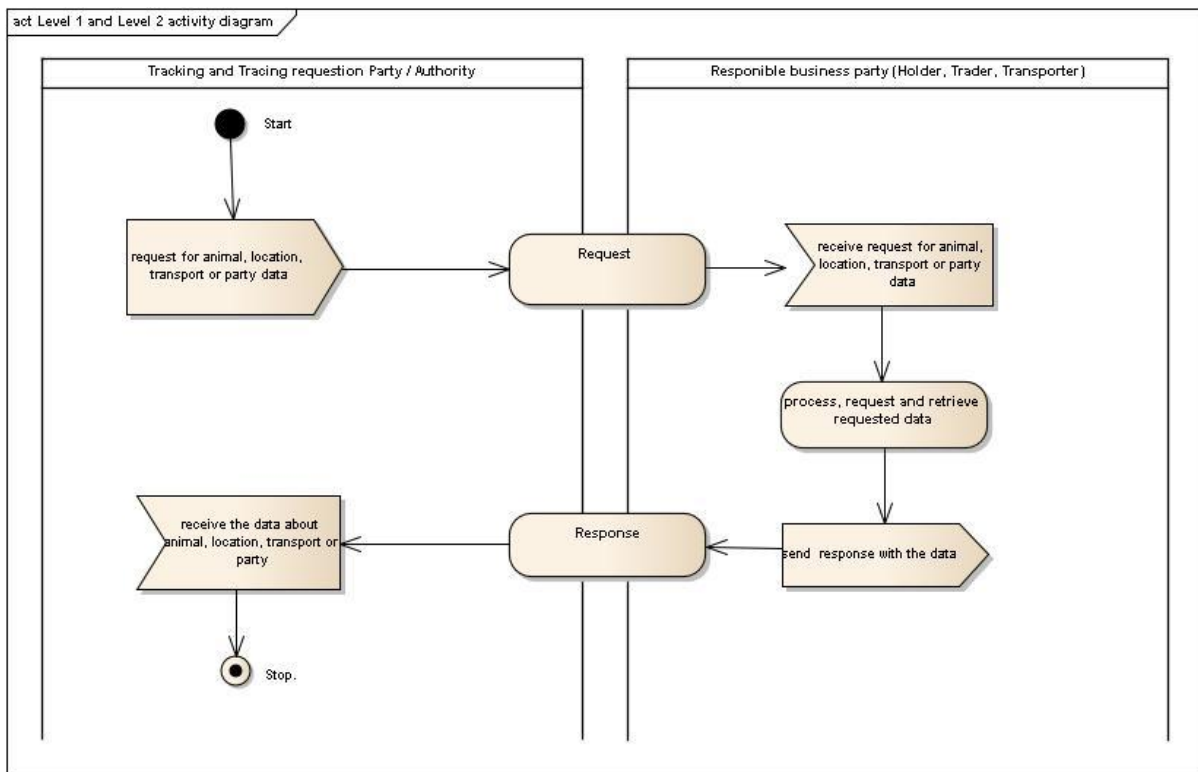
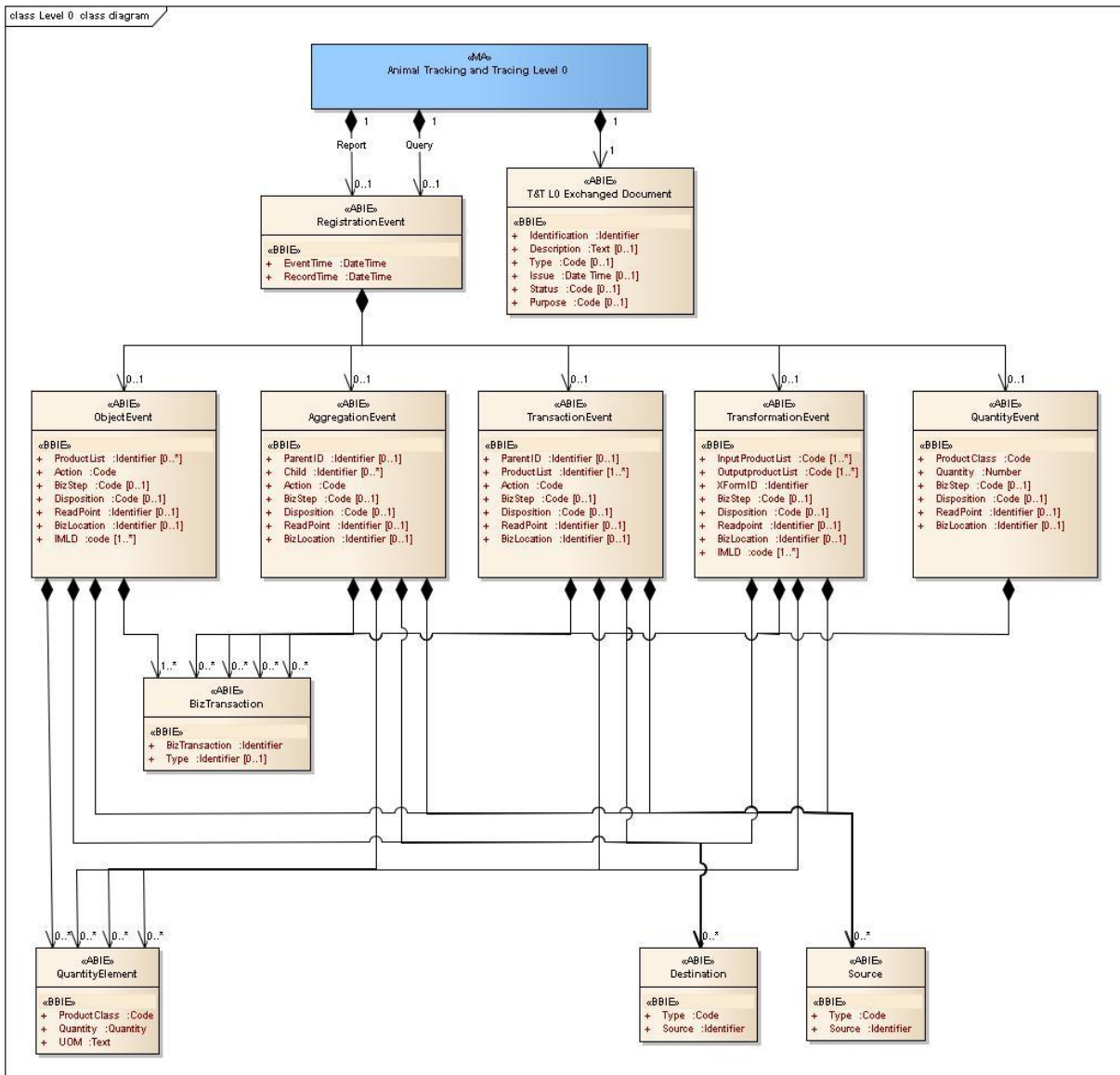


Figure 8 Activity diagram for Level 1 and Level 2



## 5.5 Information model definition (class diagram)



- **Figure9 initial class diagram for Level 0 based on the original ISO / IEC 19987 specification**

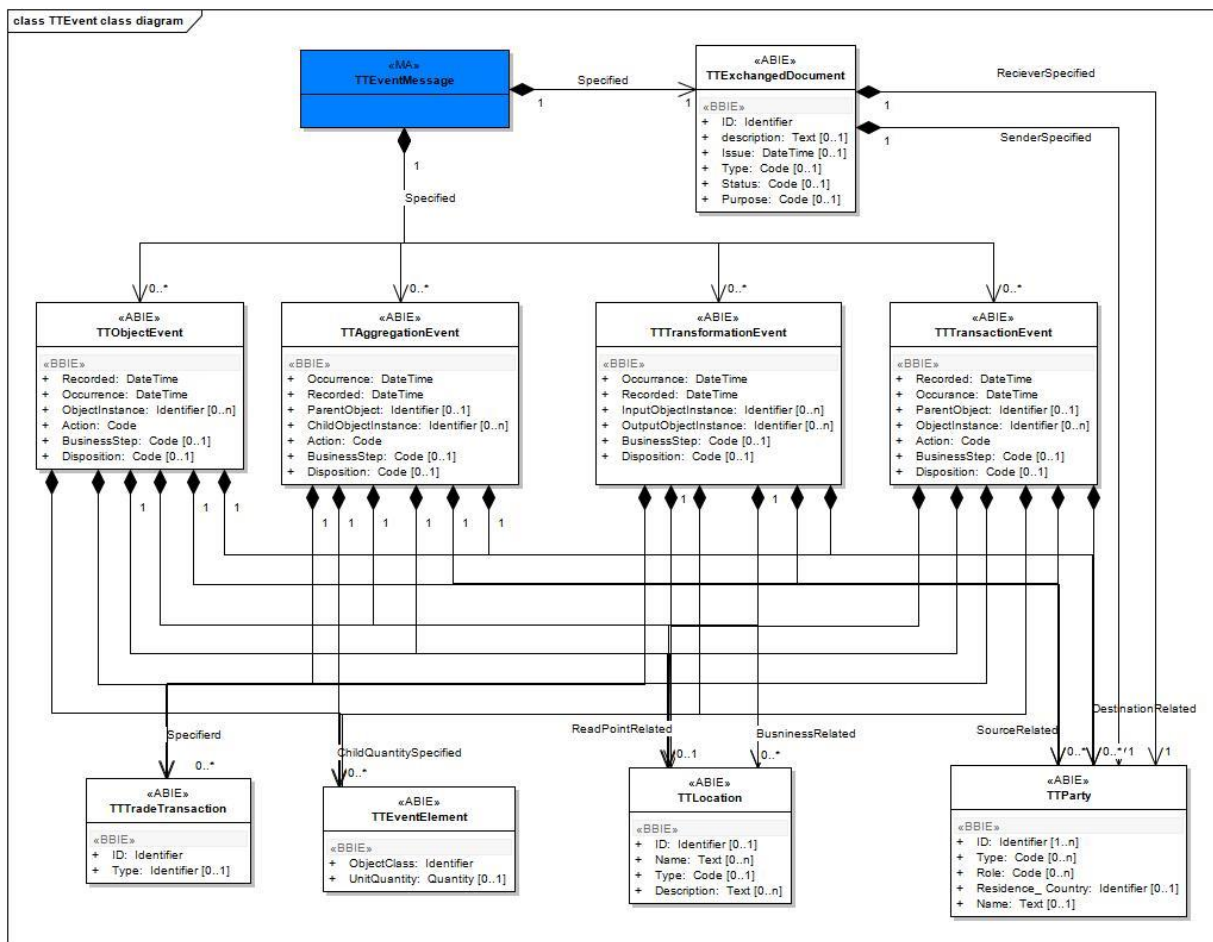


Fig 10 class diagram for Level 0, based on ISO 19987 after harmonization to UN/CEFACT CCL 15B.

Fig 9 Level 0 provides an overview for the query and report information exchange business information entities based on the ISO / IEC 19987 specification. During the harmonization process some normalization is applied and harmonised towards the CCL15B. The resulting class diagram is shown in fig 10. In figure 11 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).

These TTEvent messages are defined for declaring events to a repository, and for basic search and request operations. These messages and services can be implemented at Level 0.

In Fig 11 and 12, the Level 1 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, location, 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 do 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.

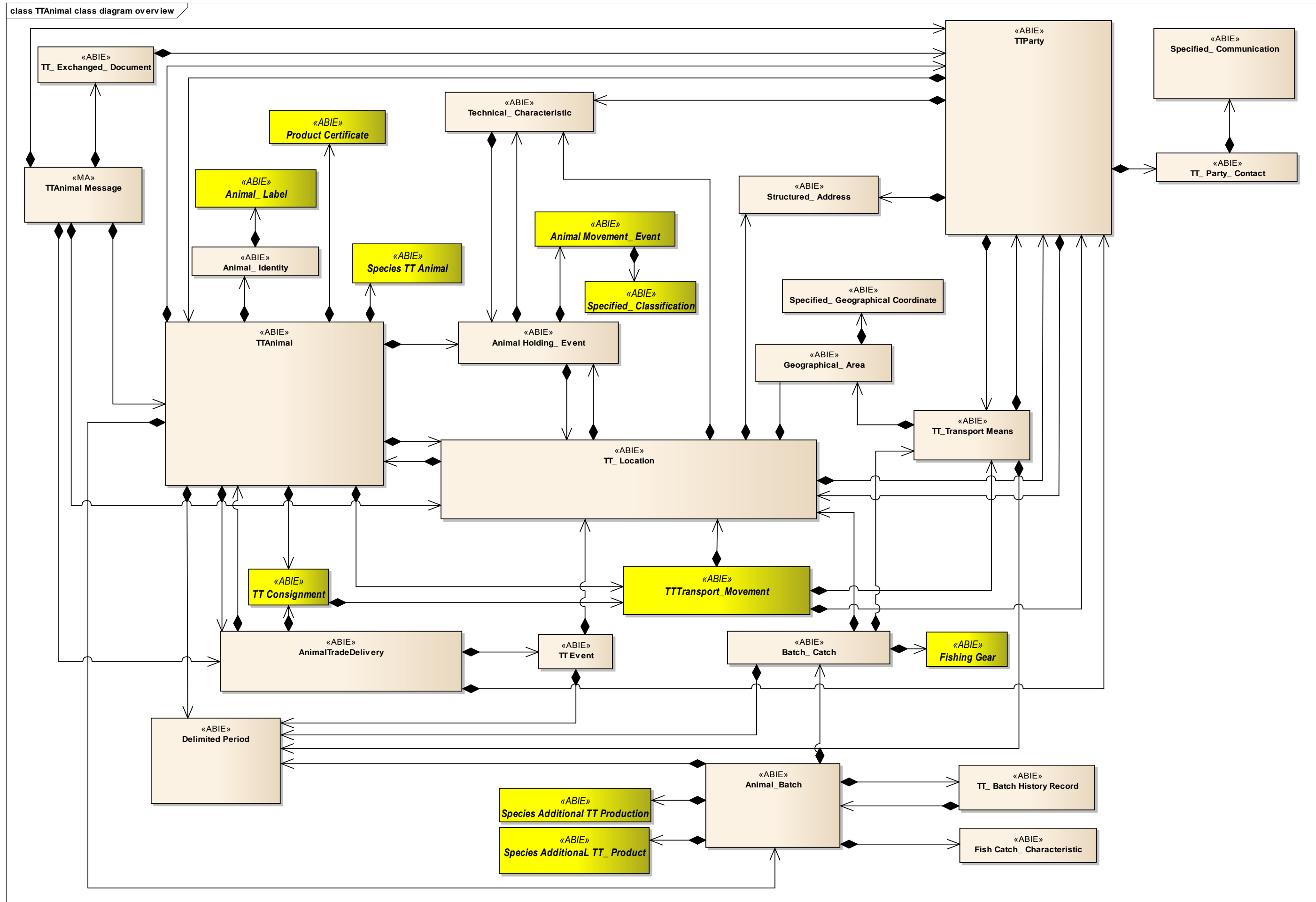


Figure 11 Class diagram overview for Level 1 and 2, for the extended exchange of the animal data, location and transport data

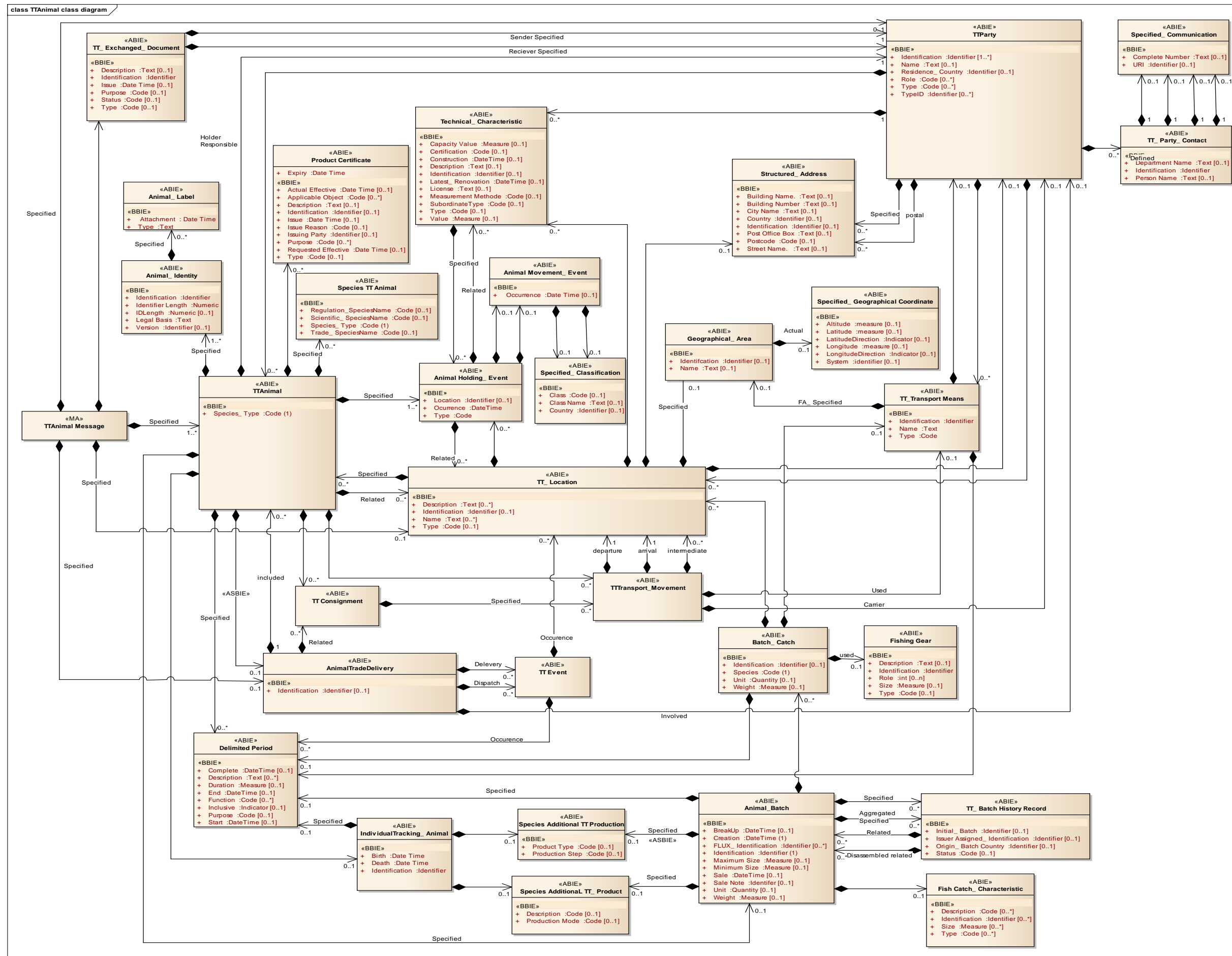


Figure 12 Class diagram in detail for Level 1 and 2, for the extended exchange of the animal data, location and transport data.

## 5.6 Business Information Entities

The data structure and the definitions 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. The specifications are aligned with the animal identification device specifications of ISO 25119 published by the ISO TC23 / SC19. To align with the UNCEFACT CCL some modification are made. See the class diagrams fig 9 and fig 10.

### 5.6.1 Business Information Entities Level 0

#### TT\_ Exchange\_ 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 exchange document.   |
| 0..1  | Description    | Att  | Text       | The textual description of this TT exchange document.   |
| 0..1  | Type           | Att  | Code       | The code specifying the type of TT exchange document.   |
| 0..1  | Issue          | Att  | Date Time  | The date, time, date time, or other date time value of the issuance of this TT exchange document. |
| 0..1  | Status         | Att  | Code       | The code specifying the status of this TT exchange document.                                      |
| 0..1  | Purpose        | Att  | Code       | The code specifying a purpose of this TT exchange document.                                       |

| Mult.<br>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 Object\_ Event

Description: Information about an event concerning one or more physical or digital Track and Trace (TT) objects identified by instance or class level identifiers.

| Mult. | Business term | Rel. | Type       | Description   |
|-------|---------------|------|------------|---|
| 1     | Occurrence    | Att  | Identifier | The date, time, date time, or other date time value at which this TT object event occurred. |
| 1     | Recorded      | Att  | Code       | The date, time, date time, or other date time value at which this TT object event was       |

|      |                |     |            |  |
|------|----------------|-----|------------|--|
|      |                |     |            | recorded.  |
| 0..n | Identification | Att | Code       | An instance identifier for an object of this TT object event.        |
| 1    | Action         | Att | Code       | The code specifying the action for this TT object event.             |
| 0..1 | Step           | Att | Identifier | The code specifying the business step for this TT object event.      |
| 0..1 | Disposition    | Att | Identifier | The code specifying the disposition related to this TT object event. |

| Mult. |     | Association  | Description  |
|-------|-----|--|--|
| Min   | Max |  |  |
| 0     | 1   | TT Object_ Event. Read Point_ Related. TT_ Location      | The read point related location of this TT object event.     |
| 0     | 1   | TT Object_ Event. Business_ Related. TT_ Location        | The business location related to this TT object event.       |
| 0     | n   | TT Object_ Event. Specified. TT_ Trade Transaction       | A trade transaction specified for this TT object event.      |
| 0     | n   | TT Object_ Event. Quantity_ Specified. TT_ Event Element | A quantity event element specified for this TT object event. |
| 0     | n   | TT Object_ Event. Source_ Related. TT_ Party             | A source related party for this TT object event.             |
| 0     | n   | TT Object_ Event. Destination_ Related. TT_ Party        | A destination related party for this TT object event.        |

## TT Aggregation\_ Event

Description: An event where objects or processes are grouped.

| Mult. | Business term               | Rel.         | Type       | Description  |
|-------|-----------------------------|--------------|------------|--|
| 1     | Occurrence                  | Att          | Date Time  | The date, time, date time, or other date time value at which this TT aggregation event occurred.     |
| 1     | Recorded                    | Att          | Date Time  | The date, time, date time, or other date time value at which this TT aggregation event was recorded. |
| 0..   | Parent Identification       | Object Att   | Identifier | The identifier of the parent object for this TT aggregation event.                                   |
| 0..1  | Child Object Identification | Instance Att | Identifier | An instance identifier for a child object of this TT aggregation event.                              |
| 1     | Action                      | Att          | Code       | The code specifying the action for this TT aggregation event.  |
| 0..1  | Business Step               | Att          | Code       | The code specifying the business step for this TT aggregation event.                                 |

|      |             |     |      |   |
|------|-------------|-----|------|---|
| 0..1 | Disposition | Att | Code | The code specifying the disposition related to this TT aggregation event. |
|------|-------------|-----|------|---|

| Mult. |     | Association  | Description  |
|-------|-----|--|--|
| Min   | Max |  |  |
| 0     | 1   | TT Object_ Event. Read Point_ Related. TT_ Location      | The read point related location of this TT object event.     |
| 0     | 1   | TT Object_ Event. Business_ Related. TT_ Location        | The business location related to this TT object event.       |
| 0     | n   | TT Object_ Event. Specified. TT_ Trade Transaction       | A trade transaction specified for this TT object event.      |
| 0     | n   | TT Object_ Event. Quantity_ Specified. TT_ Event Element | A quantity event element specified for this TT object event. |
| 0     | n   | TT Object_ Event. Source_ Related. TT_ Party             | A source related party for this TT object event.             |
| 0     | n   | TT Object_ Event. Destination_ Related. TT_ Party        | A destination related party for this TT object event.        |

### TT Transaction\_ Event

Description: Information about an event declaring that certain objects have been associated or disassociated with one or more Track and Trace (TT) trade transactions.

| Mult. | Business term                  | Rel. | Type       | Description  |
|-------|--------------------------------|------|------------|--|
| 1     | Occurrence                     | Att  | Date Time  | The date, time, date time, or other date time value at which this TT transaction event occurred.     |
| 1     | Recorded                       | Att  | Date Time  | The date, time, date time, or other date time value at which this TT transaction event was recorded. |
| 10..1 | Parent Object Identification   | Att  | Identifier | The identifier of the parent object for this TT transaction event.                                   |
| 0..n  | Object Instance Identification | Att  | Identifier | An instance identifier for an object of this TT transaction event.                                   |
| 1     | Action                         | Att  | Code       | The code specifying the action for this TT transaction event.  |
| 0..1  | Business Step                  | Att  | Code       | The code specifying the business step for this TT transaction event.                                 |
| 0..1  | Disposition                    | Att  | Code       | The code specifying the disposition related to this TT transaction event.                            |

| Mult. |     | Association   | Description   |
|-------|-----|---|---|
| Min   | Max |   |   |
| 0     | 1   | TT Transaction_ Event. Read Point_ Related. TT_ Location      | The read point related location of this TT transaction event.     |
| 0     | 1   | TT Transaction_ Event. Business_ Related. TT_ Location        | The business location related to this TT transaction event.       |
| 1     | n   | TT Transaction_ Event. Specified. TT_ Trade Transaction       | A trade transaction specified for this TT transaction event.      |
| 1     | n   | TT Transaction_ Event. Quantity_ Specified. TT_ Event Element | A quantity event element specified for this TT transaction event. |
| 1     | n   | TT Transaction_ Event. Source_ Related. TT_ Party             | A source related party for this TT transaction event.             |
| 1     | n   | TT Transaction_ Event. Destination_ Related. TT_ Party        | A destination related party for this TT transaction event.        |

### TT Transformation\_ Event

Description: Information about an event that captures the relationship between one or more physical or digital objects identified by identifiers, such as an EPC (Electronic Product Code) or EPC class, that are fully or partially consumed as inputs or as outputs.

| Mult. | Business term                         | Rel. | Type       | Description   |
|-------|---------------------------------------|------|------------|---|
| 1     | Occurrence                            | Att  | Date Time  | The date, time, date time, or other date time value at which this TT transformation event occurred.     |
| 1     | Recorded                              | Att  | Date Time  | The date, time, date time, or other date time value at which this TT transformation event was recorded. |
| 0..n  | Input Object Instance Identification  | Att  | Identifier | An instance identifier for an input object of this TT transformation event.                             |
| 0..n  | Output Object Instance Identification | Att  | Identifier | An instance identifier for an output object of this TT transformation event.                            |
| 0..1  | Business Step                         | Att  | Code       | The code specifying the business step for this TT transformation event.                                 |
| 0..1  | Disposition                           | Att  | Code       | The code specifying the disposition related to this TT transformation event.                            |
| 0..1  | Business Step                         | Att  | Code       | The code specifying the business step for this TT transformation event.                                 |

| Mult. |     | Association   | Description  |
|-------|-----|---|--|
| Min   | Max |   |  |
| 0     | 1   | TT Transformation_ Event. Read Point_ Related. TT_ Location | The read point related location of this TT transformation event. |



| Mult. |     | Association   | Description   |
|-------|-----|---|---|
| Min   | Max |   |   |
| 0     | 1   | TT Transformation_ Event. Business_ Related. TT_ Location               | The business location related to this TT transformation event.                    |
| 0     | n   | TT Transformation_ Event. Specified. TT_ Trade Transaction              | A trade transaction specified for this TT transformation event.                   |
| 0     | n   | TT Transformation_ Event. Input Quantity_ Specified. TT_ Event Element  | A quantity event element specified for an input of this TT transformation event.  |
| 0     | n   | TT Transformation_ Event. Output Quantity_ Specified. TT_ Event Element | A quantity event element specified for an output of this TT transformation event. |
| 0     | n   | TT Transformation_ Event. Source_ Related. TT_ Party                    | A source related party for this TT transformation event.                          |

### TT Event\_ Element

Description: Information about an event in which a Track and Trace (TT) element of one of more physical or digital objects is identified by a specific object class identifier (such as an electronic product class), either a specific quantity or an unspecified quantity.

| Mult. | Business term  | Rel. | Type       | Description   |
|-------|----------------|------|------------|---|
| 1     | Identification | Att  | Identifier | The identifier of the object class for this TT event element. |
| 0..1  | Unit           | Att  | Quantity   | The number of units of this TT event element.                 |

### TT Trade\_ Transaction

Description: An agreement, contract, exchange, understanding, or transfer of cash or property related to a Track and Trace (TT)

| Mult. | Business term       | Rel. | Type       | Description  |
|-------|---------------------|------|------------|--|
| 1     | Identification      | Att  | Identifier | The identifier for this TT trade transaction.        |
| 0..1  | Type Identification | Att  | Identifier | The identifier for the type of TT trade transaction. |

### 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 identifier for this TT location.            |
| 0..n  | 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..n  | Description    | Att  | Text       | A textual description of this TT location.      |

## 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 specifying the type of TT party.  |
| 0..1  | Name           |      | Text       | The name, expressed as text, for this TT party.  |
| 0..n  | Role           |      | Code       | A code specifying the role of this TT party.   |
| 0..1  | Country        |      | Identifier | The identifier for the country of residence for this TT party, such as the country in which a person lives or in which a corporation has its place of incorporation. |

## 5.6.2 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. |     | Association   | Description  |
|-------|-----|---|--|
| Min   | Max |   |  |
| 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\_ Animal.

Description: A Track and Trace (TT) animal or a group of animals, such as those kept or raised on a farm, ranch

| Mult. | Business term | Rel. | Type | Description   |
|-------|---------------|------|------|---|
| 1     | Species_Type  | Att  | Code | The code specifying the type of species and subclasses of this TT animal, such as bovine, sheep or salmon.?). |

| Mult. |           | Association                                    | Description  |
|-------|-----------|--|--|
| Min   | Max       |  |  |
| 1     | 1         | TT_ Animal. Holder Responsible. TT_ Party      | The holder responsible party for this TT animal.         |
| 0     | 1         | TT_ Animal. Applicable. Animal_ Trade Delivery | The animal trade delivery applicable for this TT animal. |
| 0     | n         | TT_ Animal. Related. TT_ Consignment           | A consignment related to this TT animal.                 |
| 0     | 1         | TT_ Animal. Specified. Animal_ Batch           | The animal batch specified for this TT animal.           |
| 0     | 1         | TT_ Animal. Specified. Animal_ Identity        | An animal identity specified for this TT animal.         |
| 0     | unbounded | TT_ Animal. Specified. Delimited_ Period       | A delimited period specified for this TT animal.         |
| 1     | unbounded | TT_ Animal. Specified. Animal Holding_ Event   | An animal holding event specified for this TT animal.    |
| 0     | unbounded | TT_ Animal. Specified. Product_ Certificate    | A product certificate specified for this TT animal.      |
| 0     | unbounded | TT_ Animal. Specified. Species TT_ Animal      | A species specified for this TT animal.                  |
| 0     | unbounded | TT_ Animal. Related. TT_ Location              | A location related to this TT animal.                    |

## Species TT\_Animal

Description: The species of a Track and Trace (TT) animal or batch of animals.

| Mult. | Business term           | Rel. | Type | Description   |
|-------|-------------------------|------|------|---|
| 1..n  | Species_Type            | Att  | Code | The code specifying the species type of this TT animal.                     |
| 0..n  | Scientific Species Name | Att  | Code | The code specifying the type of scientific species name for this TT animal. |
| 0..n  | Regulation_Species Name | Att  | Code | The code specifying the type of regulation species name for this TT animal. |
| 0..n  | Trade_Species Name      | Att  | Code | The code specifying the type of trade species name for this TT animal.      |

## Animal\_ Identity

Description: Information about an attachment to an animal or group of animals which uniquely identifies the animal or the group of animals.

| Mult. | Business term      | Rel. | Type       | Description  |
|-------|--------------------|------|------------|--|
| 1..1  | Identification     | Att  | Identifier | The identifier for this individual tracking animal or batch of tracking animals              |
| 1..1  | Identifier Length  | Att  | Numeric    | The length, expressed as the number of characters, of the identifier in this animal identity |
| 1..1  | Legal basis        | Att  | Text       | The legal basis, expressed as text, for this animal identity.                                |
| 0..1  | Version            | Att  | Identifier | The identifier of the version of this animal identity.                                       |
| 0..1  | Issuer Party Name. | Att  | Text       | The name, expressed as text, of the party issuing this animal identity.                      |

| Mult.<br>Min | Max | Association                                | Description   |
|--------------|-----|--|---|
| 0            | n   | Animal_ Identity. Specified. Animal_ Label | A label specified for this animal identity, such as an identification tag, a transponder or a tattoo. |

## Animal\_ Label

Description: Information about an attachment to an animal which uniquely identifies it.

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

## 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.  |
| 0..n | Purpose             | Att | Code       | A code specifying the purpose of this product certificate.   |

### Animal Holding\_ Event

Description: The keeping of an animal in a particular location.

| Mult. | Business term | Rel. | Type       | Description   |
|-------|---------------|------|------------|---|
| 0..1  | Location      | Att  | Identifier | The identifier of the location for this animal holding event.                                       |
| 1     | Type          | Att  | Code       | The type of the location, expressed as a code.  |
| 1     | Occurance     | Att  | Date Time  | The date, time, date time, or other date time value of the occurrence of this animal holding event. |

| Mult.<br>Min    Max | Association   | Description   |
|---------------------|---|---|
| 0    n              | Animal Holding_ Event. Related. TT_ Location                        | A Track and Trace (TT) location related to this animal holding event. |
| 0    n              | Animal Holding_ Event. Related. Technical_ Characteristic           | A technical characteristic related to this animal holding event.      |
| 0    1              | Animal Holding_ Event. Arrival_ Specified. Animal Movement_ Event   | The arrival movement event specified for this animal holding event.   |
| 0    1              | Animal Holding_ Event. Departure_ Specified. Animal Movement_ Event | The departure movement event specified for this animal holding event. |

### Animal Movement\_ Event. Details

Description: A conveyance of an animal or animals from place to place.

| Mult. | Business term | Rel. | Type      | Description   |
|-------|---------------|------|-----------|---|
| 0..1  | Occurrence    | Att  | Date Time | The date of the occurrence of this animal movement event. |

| Mult. |     | Association   | Description   |
|-------|-----|---|---|
| Min   | Max |   |   |
| 0     | 1   | Animal Movement_ Event. National_ Applicable. Specified_ Classification | The national classification applicable to this animal movement event. |
| 0     | 1   | Animal Movement_ Event. Unified_ Applicable. Specified_ Classification  | The unified classification applicable to this animal movement event.  |

### Specified\_ Classification. Details

Description: A specified systematic arrangement in classes or categories according to established criteria.

| Mult. | Business term | Rel. | Type       | Description   |
|-------|---------------|------|------------|---|
| 0..1  | Class         | Att  | Code       | The code specifying the class for this specified classification.      |
| 0..1  | Class Name    | Att  | Text       | The class name, expressed as text, for this specified classification. |
| 0..1  | Country       | Att  | Identifier | The country identifier for this specified classification.             |

### 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..n  | 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..n  | Description    | Att  | Text       | A textual description for this TT location.     |

| Mult. |     | Association   | Description  |
|-------|-----|---|--|
| Min   | Max |   |  |
| 0     | n   | TT_ Location. Specified. Animal Holding_ Event      | An animal holding event specified for this TT location.    |
| 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_ Animal                 | An animal specified for this TT location.                  |
| 0     | 1   | TT_ Location. Specified. Geographical_ Area         | The geographical area specified for this TT location.      |
| 0     | 1   | TT_ Location. Specified. Structured Address         | The structured address 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 fish catch characteristic.   |
| 0..1  | Description    | Att  | Code       | A code specifying a description of this fish catch 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  | Licence        | Att  | Text       | The licence, 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. Animal Holding_ Event | An animal holding event specified for this technical characteristic. |

## 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 UN/ECE 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<br>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.  |

## Batch\_Catch

Description: Information about the species and quantity of fish caught in this catch session within this batch.

| Mult. | Business term  | Rel. | Type       | Description   |
|-------|----------------|------|------------|---|
| 1     | Species        | Att  | Code       | The code for the species in this Batch Catch                      |
| 0..1  | Unit           | Att  | Quantity   | The number of units, expressed as a quantity, of this Batch_Catch |
| 0..1  | Weight         | Att  | Measure    | The weight, expressed as a measure, for this Batch_Catch          |
| 0..1  | Identification | Att  | Identifier | The identifier for this Batch_Catch                               |

| Mult. | Association | Description  |
|-------|-------------|--|
| Min   | Max         |  |
| 0     | 1           | Batch_Catch. Specified. TT_Transport Means                               |
|       |             | The Track and Trace (TT) transport means specified for this batch catch. |
| 0     | 1           | Batch_Catch. Specified. Delimited_Period                                 |
|       |             | The delimited period specified for this batch catch.                     |
| 0     | n           | Batch_Catch. Specified. TT_Location                                      |
|       |             | A Track and Trace (TT) location specified for this batch catch.          |

| Mult. |     | Association                     | Description                                 |
|-------|-----|---------------------------------|---|
| Min   | Max |                                 |   |
| 0     | 1   | Batch_Catch. Used. Fishing_Gear | The fishing gear used for this batch catch. |

## Fishing Gear

Description: An apparatus which is used for fishing.

| Mult. | Business term | Rel. | Type | Description  |
|-------|---------------|------|------|--|
| 0..1  | Type          | Att  | Code | A type, expressed as a code, for this fishing gear                                     |
| 0..n  | Role          | Att  | Code | The code specifying the role of this fishing gear, such as main gear, subsidiary gear. |

## Animal\_Batch

Description: A group of animals dealt with together

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

| Mult. |     | Association   | Description   |
|-------|-----|---|---|
| Min   | Max |   |   |
| 0     | 1   | Animal_Batch. Specified. Delimited_Period               | The delimited period specified for this animal batch.   |
| 0     | n   | Animal_Batch. Specified. Species Additional_ TT_Product | The Track and Trace (TT) additional product information for the species in this animal batch. |

| Mult. |     | Association  | Description  |
|-------|-----|--|--|
| Min   | Max |  |  |
| 0     | n   | Animal_ Batch. Specified. Species Additional_ TT_ Production   | The Track and Trace (TT) additional production information for the species in this animal batch. |
| 0     | n   | Animal_ Batch. Aggregated_ Specified. TT_ Batch History Record | An aggregated Track and Trace (TT) batch history record specified for this animal batch.         |
| 0     | n   | Animal_ Batch. Specified. TT_ Batch History Record             | A Track and Trace (TT) batch history record specified for this animal batch.                     |
| 0     | n   | Animal_ Batch. Specified. Fish Catch_ Characteristic           | A fish catch characteristic specified for this animal batch.                                     |
| 0     | n   | Animal_ Batch. Specified. Batch_ Catch                         | A batch catch specified for this animal 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  | Initial_Batch                   | Att  | Identifier | The initial identifier for this TT batch history record.                               |
| 0..1  | Issuer Assigned_ Identification | Att  | Identifier | The identifier assigned by the issuer for this TT batch history record.                |
| 0..1  | Origin Batch_ Country           | Att  | Identifier | The identifier of the country of origin for the batch in this TT batch history record. |
| 0..1  | Status                          | Att  | Code       | The code specifying the status of this TT batch history record.                        |

| Mult. |     | Association  | Description  |
|-------|-----|--|--|
| Min   | Max |  |  |
| 0     | n   | TT_ Batch History Record. Disassembled_ Related. Animal_ Batch | A related disassembled animal batch (animal batch breaks up into new identified animal batches), for this TT batch history record. |
| 0     | n   | TT_ Batch History Record. Related. Animal_ Batch               | An animal batch related to this TT batch history record.   |

### Animal\_ Trade Delivery

Description: The shipping arrangements and movement of animals including dispatch and delivery.

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

| Mult. |     | Association                                      | Description  |
|-------|-----|--|--|
| Min   | Max |  |  |
| 0     | 1   | Animal_ Trade Delivery. Responsible. TT_ Party   | The Track and Trace (TT) party responsible for this animal trade delivery. |
| 0     | n   | Animal_ Trade Delivery. Included. TT_ Animal     | A Track and Trace (TT) animal included in this animal trade delivery.      |
| 0     | n   | Animal_ Trade Delivery. Related. TT_ Consignment | A Track and Trace (TT) consignment related to this animal trade delivery.  |
| 0     | n   | Animal_ Trade Delivery. Delivery. TT_ Event      | A Track and Trace (TT) delivery event for this animal trade delivery.      |
| 0     | n   | Animal_ Trade Delivery. Despatch. TT_ Event      | A Track and Trace (TT) despatch event for this animal 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. |
| 0     | 1 (to be included in CCL 17B?) | TT_ Transport Movement. Carrier. TT_ Party        | The carrier party 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. |     | Association  | Description   |
|-------|-----|--|---|
| Min   | Max |  |   |
| 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. |     | Association                              | Description   |
|-------|-----|--|---|
| Min   | Max |  |   |
| 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 species.

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

### Fish Catch\_ Characteristics

Description: A prominent attribute or aspect of a fish catch.

| Mult. | Business term  | Rel. | Type       | Description  |
|-------|----------------|------|------------|--|
| 0..n  | Identification | Att  | Identifier | An identifier for this fish catch characteristic.                  |
| 0..n  | Value          | Att  | Value      | A measure of a value for this fish catch characteristic.           |
| 0..n  | Type           | Att  | Code       | A code specifying a type of fish catch characteristic.             |
| 0..n  | Description    | Att  | Code       | A code specifying a description of this fish catch characteristic. |

### 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.<br>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.    |

| Mult. |     | Association  | Description  |
|-------|-----|--|--|
| Min   | Max |  |  |
| 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_Animal                         | A tracking animal 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     | 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. |     | Association  | Description   |
|-------|-----|--|---|
| Min   | Max |  |   |
| 0     | 1   | Party_Contact. Direct_Telephone.Unstructured_Telecommunication_Communication | The direct unstructured telephone 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. |

## Specified Communication

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

| 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. |
| 0..1  | Complete Number | Att  | Text       | The text string of characters that make up the complete number for this specified communication.            |

## 5.7 Business rules

The Tracking and Tracing message is used to exchange information between the business partners in life animals and fish, the tracking and tracing parties and authorities. The message contains not any specified business rules.

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

## 5.8 Definition of terms

### 5.8.1 Parties and party roles

| Terms                                 | Definitions  |
|---------------------------------------|--|
| Holder                                | The party who keeps and is responsible for an animal kept on a location.   |
| Transporter                           | The party transporting animals from one place to another and providing transport means for this transport .  |
| Trader                                | The party who trades in animals.   |
| 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 animals, holding, transport or catchment, or responsible for human health, food and feed safety, animal health or environmental issues  |
| Tracking and tracing requesting party | The party searching, requesting and receiving tracking and tracing information about an animal , group of animals or animal products   |
| Repository party                      | A party providing operating the tracking and tracing repository with all the services concerned.   |
| TT party                              | The party responsible for declaring an animal tracking and tracing event to the tracking and tracing repository. In general that is the party responsible for the tracking animal, a referenced location, a vessel transport means, an id carrier transport means or an animal shipping. |
| Animal registration office            | A party who operates a (legal) animal registration with all the services concerned   |
| Track and trace event                 | A event what occurs to an animal, group of animals or animal products, related to the issues What, Where, When, Who and Why.   |



## Appendix 1 Explanation of the use of Level 0 and the relation to the Levels 1 and 2 in tracking and tracing animals and fish

Tracking event : { animal, location; party ; transport means; action; date time }

### Level 0

**Object event:** the leading object to specify an animal traceability event.

*Product* : tracking an animal, individual or animal batch identifier

*Activity code*: not applicable

(but could be optional for

|         |   |                        |
|---------|---|------------------------|
| ADD     | > | born                   |
| REMOVE  | > | death                  |
| OBSERVE | > | all other life events) |

*Business step (Biz step)*: to be defined for breeding, fattening, transport, catch, butchering, loading, unloading, arrival, departure.

*Disposition*: not applicable in tracking animals, except in case of fish or animal products. Maybe possible to use for life animals in case of illness and not ready/fit for movement or transport from or to a location, or not fit for slaughter.

*TTxxEvent.read point related TT Location (readpoint)*: the location where the event is recorded by a person or a device.

Many times the read point will be similar to the business location. But can be different, more detailed depending on the action.

For example the readpoint TT Location can be the device of the cargo door of the truck, where is recorded which animal is loaded or unloaded. The readpoint belongs then to the truck, while the business location can be the farm, the holding or premise, or a dedicated barn or section on that premise.

*TTxxEvent Business Related TT Location*: the location of the event. At level 1 and level 2 the biz location is referred to as referenced.location, the structured address or geographical coordinate.

*Aggregation event*: is only to be used in case of aggregating batches of animals.

*Transaction event*: can be used only in case of aggregation or disassembling a batch.

The aggregation event does not support disassembling of batches. In most processing industry batches are not disassembled. It is usually one way aggregation of products.

**Transformation event**: not applicable for life animals but for fish it can be useful to use.

Also relevant at the slaughterhouse, where the animal is processed into 1, 2 or more pieces of meat and other products. (slaughter, cutting )

*TT event Element (quantity)*: indicates the number of objects in the object class event. This indicates the number of animals in a animal batch. In level 1 represented for fish: batch\_catch unit and weight, in level 2 animal batch, calibre, weight, fish catch\_characteristics and batch catch.

*Biz transaction*: the type of biz transaction

The biz transaction is not relevant at level 1 or level 2. At level 1 it is defined indirectly, by the animal location event, animal shipping or the T&T batch catch. At level 2 it is defined by the animal holding event, animal movement, T&T batch catch, animal shipping and transport event.

*TTxxEvent Source related TT Party and TTxxEvent destination related TT Party (Source and Destination)*: contains an identifier and type.

At level 1 and level 2 this refers to the:

- TT location,
- structured address,
- geographical area;
- technical character;
- TT transport means;

Level 0 has a different abstract level compared to level 1 and 2. Level 0 is very general for all types of products, over the whole product lifecycle, all processing steps from the raw material source up to the point of sale of the end product.

The object entities (BIEs , ABIEs and ASBIEs) are not defined specifically for tracking and tracing of life animal or fish.

The types of events in T&T animals and fish are (more or less) limited to:

- Birth, arrival, departure, death, caught;
- Create, assemble, disassemble or end a batch;
- Transport of an animal or group of animals on a transport means;

Locations can be: holding, premise, market place, restplace, slaughterhouse; transport devices / vessels; ocean regions and other geographical regions.

Tracking event : { animal, location; party ; transport means; action; date time }

