Document summary

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<tr>
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Authors

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
</tr>
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<tr>
<td>Elisabeth Kikidis</td>
<td>GS1 Germany GmbH</td>
</tr>
<tr>
<td>Frank Kuhlmann</td>
<td>GS1 Germany GmbH</td>
</tr>
<tr>
<td>Patrik Rothe</td>
<td>GS1 Germany GmbH</td>
</tr>
<tr>
<td>Angela Schillings-Schmitz</td>
<td>GS1 Germany GmbH</td>
</tr>
<tr>
<td>Tim Sadowski</td>
<td>GS1 Germany GmbH</td>
</tr>
<tr>
<td>Ralph Tröger</td>
<td>GS1 Germany GmbH</td>
</tr>
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1. Purpose of this document

This document is an accompanying document to the fTRACE system guide and deals with the transmission of traceability data applicable for the fish sector. Firstly, it starts with a chapter describing data attributes necessary to further describe specific instances or batches/lots of fish, i.e., raw material, intermediate products, as well as end products (chapter 2). Secondly, it describes the contents of the EPCIS messages (along with illustrating examples) for the various processes that need to be captured depending on the different cases to be distinguished (chapter 3). Chapter 4 supports companies to set up the transmission of the respective event messages. Chapter 5 provides guidance for those organisations which intend to transmit their traceability data by using the fTRACE Data Entry Website (DEWS).
2. ILMD attributes

Instance/Lot Master Data (ILMD) is data that describes a specific instance of a physical or digital object, or a specific batch/lot of objects that are produced in batches/lots. ILMD consists of a set of descriptive attributes that provide information about one or more specific objects or lots.

Instance/Lot Master Data can only be defined when new instances or batch/lot identifiers (e.g., a GTIN + batch/lot combination) come into existence. This can occur either in the case of an ObjectEvent with action="ADD" and business step “commissioning” (to document a fishing or farming process) or in the case of a TransformationEvent (for instance, to document a processing process), whereas the ILMD attributes refer to the output identifiers resulting of a transformation.

2.1 ILMD attributes for fishing and farming

The following table provides an overview of all possible ILMD attributes applicable for EPCIS events capturing fishing and farming processes. They are used to transmit data further describing a specific product instance or batch/lot, e.g. origin information. Their actual usage however depends on various factors, for instance the type of species, the availability of GLNs, or legal obligations. The mandatory fields are explained in sections 3.1 and 3.2.

<table>
<thead>
<tr>
<th>Element</th>
<th>Type / possible values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft:bestBeforeDate</td>
<td>Date (YYYY-MM-DD)</td>
<td>Best before date</td>
</tr>
<tr>
<td>ft_fish:unloadingPort</td>
<td>String</td>
<td>Unloading port according to UN/LOCODE 2014-1</td>
</tr>
<tr>
<td>ft:storageStateCode</td>
<td>Possible values:</td>
<td>Indicates whether the product has previously been frozen</td>
</tr>
<tr>
<td></td>
<td>PREVIOUSLY_FROZEN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOT_PREVIOUSLY_FROZEN</td>
<td></td>
</tr>
<tr>
<td>ft_fish:catchingPeriodEnd</td>
<td>DateTime</td>
<td>End of the catching period</td>
</tr>
<tr>
<td></td>
<td>YYYY-MM-DDThh:mm:ssSSS+hh:mm or YYYY-MM-DDThh:mm:ssZ</td>
<td></td>
</tr>
<tr>
<td>ft_fish:vesselCatchInformation</td>
<td>Container for information about a vessel</td>
<td>Can be present n times in &quot;ilmd&quot;. Each &quot;vessel CatchInformation&quot; container represents one vessel</td>
</tr>
<tr>
<td>ft_fish:vesselCatchInformation – ft_fish:vesselName</td>
<td>String</td>
<td>Name of the vessel</td>
</tr>
<tr>
<td>ft_fish:vesselCatchInformation – ft_fish:vesselID</td>
<td>String</td>
<td>ID of the vessel</td>
</tr>
<tr>
<td>ft_fish:vesselCatchInformation – ft:catchArea</td>
<td>String</td>
<td>Catch area according to FAO catching areas code list</td>
</tr>
</tbody>
</table>
**2.2 ILMD attributes for transformations**

The following table provides an overview of all possible ILMD attributes applicable for EPCIS events capturing transformation processes (i.e., fileting, processing or preservation). They are used to transmit data further describing a specific product instance or batch/lot forming the outcome of a transformation, e.g. a best before date. Their actual usage however depends on various factors, for instance the type of fish, the nature of a transformation process, or legal obligations. The mandatory fields are explained in the various examples in section 3.3.
Table of elements for the ilmd section:

<table>
<thead>
<tr>
<th>Element</th>
<th>Type / possible values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>fT:useByDate</td>
<td>Date (YYYY-MM-DD)</td>
<td>Use by date</td>
</tr>
<tr>
<td>fT:bestBeforeDate</td>
<td>Date (YYYY-MM-DD)</td>
<td>Best before date</td>
</tr>
<tr>
<td>fT:dateOfFirstFreezing</td>
<td>Date (YYYY-MM-DD)</td>
<td>Date when the product was frozen for the first time</td>
</tr>
<tr>
<td>fT:preservingPeriodStart</td>
<td>Date (YYYY-MM-DD)</td>
<td>Start date of the preserving process (e.g. smoking)</td>
</tr>
<tr>
<td>fT:preservingPeriodEnd</td>
<td>Date (YYYY-MM-DD)</td>
<td>End date of the preserving process (e.g. smoking)</td>
</tr>
<tr>
<td>fT:storageStateCode</td>
<td>Possible values:</td>
<td>Indicates whether the product has previously been frozen.</td>
</tr>
<tr>
<td></td>
<td>PREVIOUSLY_FROZEN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOT_PREVIOUSLY_FROZEN</td>
<td></td>
</tr>
</tbody>
</table>
3. **Message examples incl. mandatory fields**

3.1 **Fishing**

Mandatory fields for ALL EPCIS event messages documenting fishing processes include (please refer to section 4.2 in the fTRACE system manual):

- eventTime (=date of catch)
- eventTimeZoneOffset
- epcList and/or quantityList (populated with the respective object identifiers including quantities and unit of measure, if applicable)
- action (“ADD”)
- bizStep (value “commissioning”)
- readPoint (populated with an SGLN)
- ilmd containing the following mandatory ILMD attributes:
  - vesselCatchInformation
    - catchMethod
    - catchArea

In addition to that, the following optional ILMD attributes can be added, if applicable:

- catchingPeriodEnd
- bestBeforeDate
- storageStateCode
- unloadingPort
- vesselCatchInformation
  - vesselID
  - vesselName
  - vesselOwner
  - vesselFlagState
  - haul
3.2 Farming

Mandatory fields for ALL EPCIS event messages documenting fishing processes include (please refer to section 4.2 in the fTRACE system manual):

- `eventTime` (=date of catch/harvesting)
- `eventTimeZoneOffset`
- `epcList` and/or `quantityList` (populated with the respective object identifiers including quantities and unit of measure, if applicable)
- `action` (“ADD”)
- `bizStep` (value “commissioning”)
- `readPoint` (populated with an SGLN)
- `ilmd` containing the following (optional) ILMD attributes:
  - `catchingPeriodEnd`
  - `bestBeforeDate`
  - `storageStateCode`
  - `countryOfOrigin` (if no farms are indicated)
  - `listOfFarms` `farmIdentType`
    - `farm`

Please note: in the (rare) case that there are no ILMD attributes at all, the server expects at least the element “<ilmd/>” in order to be accepted.
(Depiction of an EPCIS ObjectEvent with individual farm identification)

```
<EventList>
  <ObjectEvent>
    <eventTime>2014-07-24T14:58:56.591Z</eventTime>
    <eventTimezoneOffset>+02:00</eventTimezoneOffset>
    <epcList/>
    <action>ADD</action>
    <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
    <readPoint>
      <id>urn:epc:id:sgln:4054738.00005.0</id>
    </readPoint>
    <extension>
      <quantityList>
        <quantityElement>
          <epcClass>urn:epc:class:lgtln:4054739.099914.2014-07-25c</epcClass>
          <quantity>150</quantity>
          <uom>KGM</uom>
        </quantityElement>
      </quantityList>
      <lImd>
        <fT:bestBeforeDate>2014-12-10</fT:bestBeforeDate>
        <fT:storageStateCode>PREVIOUSLY_FROZEN</fT:storageStateCode>
      </lImd>
    </extension>
  </ObjectEvent>
</EventList>
```

(Depiction of an EPCIS ObjectEvent without individual farm identification, i.e. only indicating the country of origin GLNs)

```
<EventList>
  <ObjectEvent>
    <eventTime>2014-07-24T14:58:56.591Z</eventTime>
    <eventTimezoneOffset>+02:00</eventTimezoneOffset>
    <epcList/>
    <action>ADD</action>
    <bizStep>urn:epcglobal:cbv:bizstep:commissioning</bizStep>
    <readPoint>
      <id>urn:epc:id:sgln:4054738.00005.0</id>
    </readPoint>
    <extension>
      <quantityList>
        <quantityElement>
          <epcClass>urn:epc:class:lgtln:4054739.099914.2014-07-25f</epcClass>
          <quantity>150</quantity>
          <uom>KGM</uom>
        </quantityElement>
      </quantityList>
      <lImd>
        <fT:bestBeforeDate>2014-12-10</fT:bestBeforeDate>
        <fT:storageStateCode>PREVIOUSLY_FROZEN</fT:storageStateCode>
        <fT:countryOfOrigin>DE</fT:countryOfOrigin>
      </lImd>
    </extension>
  </ObjectEvent>
</EventList>
```
3.3 Transforming

Mandatory fields for ALL EPCIS event messages documenting transformation processes include (please refer to section 4.3 in the fTRACE system manual):

- eventTime (= date of processing)
- eventTimeZoneOffset
- inputEPCList and/or inputQuantityList (populated with the respective object identifiers including quantities and unit of measure, if applicable)
- outputEPCList and/or outputQuantityList (populated with the respective object identifiers including quantities and unit of measure, if applicable)
- bizStep
  - in case of processing (see 3.3.1), use "urn:epcglobal:cbv:bizstep:transforming"
  - in case of filleting (see 3.3.2), use "http://epcis.ftrace.com/voc/bizstep/splitting"
  - in case of preservation (see 3.3.3), use "http://epcis.ftrace.com/voc/bizstep/preserving"
- readPoint (populated with an SGLN)
- ilmd (containing the respective ILMD attributes indicated in the following subsections)
3.3.1 PROCESSING

Depending on the type of product (species, raw vs. end product, e.g.), there are different ILMD attributes that could apply whenever one or more inputs (e.g., raw material or intermediate products) are transformed into one or more outputs (e.g., another intermediate or end products). Thus, apart from the mandatory EPCIS event fields indicated in section 3.3, the following ILMD attributes COULD be required (please refer to the list in section 2.2 for further details):

- bestBeforeDate
- useByDate
- storageStateCode
- dateOfFirstFreezing

(Depiction of an EPCIS XML for a "TransformationEvent" with two inputs which are processed into one output)

```xml
<?xml version="1.0"?>
  <epcis:Body>
    <EventList>
      <extension>
        <TransformationEvent>
          <eventTime>2014-06-21T14:58:56.591Z</eventTime>
          <eventTimeZoneOffset>+02:00</eventTimeZoneOffset>
          <inputQuantityList>
            <quantityElement>
              <epcClass>urn:epc:class:lgtn:4012345.011111.XYZ1223</epcClass>
              <quantity>600</quantity>
              <uom>KG</uom></quantityElement>
            </inputQuantityList>
            <outputQuantityList>
              <quantityElement>
                <epcClass>urn:epc:class:lgtn:4012345.011111.XYZ1225</epcClass>
                <quantity>600</quantity>
                <uom>KG</uom></quantityElement>
            </outputQuantityList>
          </TransformationEvent>
        </extension>
      </EventList>
    </epcis:Body>
</epcis:EPCIDocument>
```
3.3.2 FILLETING

Depending on the type of product (species, raw vs. end product, e.g.), there are different ILMD attributes that could apply whenever one input (e.g., raw material or an intermediate product) is transformed into one or more outputs (e.g., another intermediate or end products). Thus, apart from the mandatory EPCIS event fields indicated in section 3.3, the following ILMD attributes COULD be required (please refer to the list in section 2.2 for further details):

- useByDate
- bestBeforeDate
- dateOfFirstFreezing
- storageStateCode

(Deption of an EPCIS XML for a "TransformationEvent" with input which is split into two outputs)
3.3.3 PRESERVATION

Depending on the type of product (species, raw vs. end product, e.g.), there are different ILMD attributes that could apply whenever one or more products are preserved (through smoking, e.g.). Thus, apart from the mandatory EPCIS event fields indicated in section 3.3, the following ILMD attributes COULD be required (please refer to the list in section 2.2 for further details):

- useByDate
- bestBeforeDate
- dateOfFirstFreezing
- preservationPeriodStart
- preservationPeriodEnd
- storageStateCode

(Depiction of an EPCIS XML for a "TransformationEvent" with one input resulting in one output due to a preservation process.)

```xml
<?xml version="1.0"?>
  <EPCISBody>
    <EventList>
      <Event>
        <eventTime>2014-06-21T14:58:56.591Z</eventTime>
        <eventTimeZoneOffset>+02:00</eventTimeZoneOffset>
        <InputQuantityList>
          <quantityElement>
            <epcClass>urn:epc:llid:4012345.011111.XYZ1223</epcClass>
            <quantity>1200</quantity>
            <uom>Kg</uom>
          </quantityElement>
        </InputQuantityList>
        <outputQuantityList>
          <quantityElement>
            <epcClass>urn:epc:llid:4012345.021111.XYZ5555</epcClass>
            <quantity>1200</quantity>
          </quantityElement>
        </outputQuantityList>
        <bizStep>http://epc.ftrace.com/voc/bizstep/preserving</bizStep>
        <readPoint>
          <id>urn:epc:sgn:4054738.999011.1</id>
        </readPoint>
      </Event>
    </EventList>
  </EPCISBody>
</epcis:EPCISDocument>
```

Here, the eventTime represents the date of preservation. If there is a preservation period, please use "preservingPeriodStart" and "preservingPeriodEnd" to indicate its duration.
4. Message transmission

4.1 Endpoint

The transmission of XML messages to the fTRACE EPCIS repository is ensured by a HTTP POST service. fTRACE provides two endpoints for message transmission (Remark: in order to submit messages, a username and password is required. The latter can be acquired by contacting the fTRACE team).

For testing purposes:

https://capture-pp.ftrace.com/ftrace.epcis.converter/CaptureServiceConverter

For live operation:

https://capture.ftrace.com/ftrace.epcis.converter/CaptureServiceConverter

Please use the live endpoint only if you have passed the testing phase and finalised all developments.

4.2 Setting up test environment

Data submission via web service can be tested using the web service testing application SoapUI. SoapUI can be downloaded free of charge from: http://www.soapui.org (Please note that SOAP UI is an open source web service testing application which is neither provided, maintained, nor supported by GS1 Germany. GS1 Germany cannot be held liable for any damage or loss of any kind of nature.)

Please follow the following steps to test data submission via web service to the fTRACE system:

1. Please open SoapUI – keep in mind, that this can take a while. SoapUI is a very powerful tool and has to load lots of information.
2. After it is started, the user will see this screen:
3. Now the user has to import a ready-made SoapUI project.
4. Therefore open: “File – Import Project”:

5. A new dialog will be displayed:

6. Seek with the “File open” dialog the file named: “fTRACE-SoapUI-project.xml”, mark it and click on “Open”
7. The program will now import all settings an creates a new project:
8. By pressing the little arrow beside the project name, the view can be expanded:

Hint: Use always the arrow to open an element, in case that a user double-clicks it only opens a property window.

9. Open all subfolders till you see two sub-project elements. One stands for sending data to the fTRACE live system and the other one for the testing system.

10. Again, open both items by clicking the arrow:

11. Inside each “Test Steps” is a “Testing System” and “Live System” item; this is the actual data delivery function.
   For opening the function, click the “Testing System” item twice

12. SoapUI will now open a new sub-windows on the right side of the program dialog:
13. This sub-window contains two blank text fields. The left one is where EPCIS XML content can be past in and can be send to the fTRACE server.
14. After coping XML content to the left blank field, the user has to click the “Play” symbol in the upper left corner of the sub-window.
15. All fTRACE system responses will be displayed inside the right field. A message was successfully imported if the following message appears:
5. Manual data submission via website

5.1 Login

fTRACE offers several options for submitting traceability data to the system. A quick and easy method of transferring data is to enter it manually via the website: https://dataentry.ftrace.com/ or for test data: https://dataentry-pp.ftrace.com.

In order to use the data entry website, you need to have provided with your login information beforehand.

Please sign in

Username
Password
Log in

If you want to register or if you need any help in the registration process, please contact support@ftrace.com.

On loading the website, you will find two text boxes at the bottom-left of the page, one labelled "User Name" and another "Password". Enter your login details here and then click on "Log in".

5.2 Fishing

If you wish to submit fishing information and corresponding places of origin for a particular batch, proceed as follows. First click on the "Fishing" tab at the top of the web page.

The upper part of the page may look different, as it depends on the specific user and their access rights.

Select favorite

If you have marked record as a "favourite" in the pending or history panel you can choose those here in order to facilitate data entry and save time. This is useful if you find yourself often repeating similar processes, for instance.
1. Enter the 13-digit Global Location Number (GLN) identifying the fish supplier. For convenience, this field is preallocated with the logged in user’s company GLN.

2. Select the fish type from the drop-down list (represented in a GTIN).

3. Indicate the lot number to the fish indicated above. Note: a lot number is only to be assigned once.

4. Indicate the quantity of the catch. For convenience, the unit of measure is preallocated.

5. Indicate the best before date of the caught fish.

As for the Catch details the following data can be provided:

6. Specify the date of catch. In case there has been a catching period, indicate the first and in the next line the last day of the catching period.

7. Catch Information: Press the Edit button in order to complete the first data set for the first vessel or to add a new data set for another vessel.

8. Enter the vessel ID and vessel name.

9. Select the catch method from the list. For convenience the Catch method is preallocated.

10. Select the catch area from the drop down list. For convenience the Catch area is preallocated.

11. Enter the name of the vessel owner
12. Select the vessel flag state from the list.
13. Indicate a reference to the specific haul of this catch.
14. Select the unloading port by choosing a country first.
15. Select a Transaction Type from the list and enter a Reference Number (optional).

### 5.3 Farming

If you wish to submit farming information and corresponding places of origin for a particular batch, proceed as follows. First click on the "Farming" tab at the top of the web page.

The upper part of the page may look different, as it depends on the specific user and their access rights.

If you have marked record as a "favourite" in the pending or history panel you can choose those here in order to facilitate data entry and save time. This is useful if you find yourself often repeating similar processes, for instance.

For the Product/lot data please provide the following data:

1. Enter the 13-digit Global Location Number (GLN) identifying the fish supplier. For convenience, this field is preallocated with the logged in user’s company GLN.
2. Select the fish type from the drop-down list (represented in a GTIN).
3. Indicate the lot number to the fish indicated above. Note: a lot number is only to be assigned once.
4. Indicate the quantity of the catch. For convenience, the unit of measure is preallocated.
5. Specify whether the fish has been frozen. For convenience, the storage state code is preallocated.
6. Indicate the best before date of the caught fish.

As for the “Farming details” the following data can be provided:

7. Specify the date of catch. In case there has been a catching period, indicate the first day here and the last day of the catching period in the next line.

8. Add a Farm location by clicking the Button. Choose the type of the Farm Location ID (e.g. GLN) and enter the corresponding ID for the farm. If the lot origins from more than one farm than add another entry with . For convenience the user GLN is preallocated.

9. Select a Transaction Type from the list and enter a Reference Number (optional).

5.4 Transforming, splitting and preserving

All of the different processing steps (such as gutting, fileting, preserving/smoking etc.) can be documented using the "Processing" tab. This is done as follows:

1. First, click on the tab.

2. You will now be presented with the "Input table" and "Output table" where you can specify which inputs (e.g. raw materials or intermediate products) were used for which outputs (e.g. intermediate or final products).

3. To add an input or an output to each table, click on

   or

4. A dialog box will appear where you can select the corresponding product name (the respective global item number will be shown in brackets for better control).
5. After specifying the corresponding batch number and quantity, confirm your entries with **Save**.

6. Your entries will be added to the table in question and can then be edited using **pencil** or deleted using **trash can**.

7. Select the appropriate option from the three alternatives in the "Process" drop-down box:
a) for 1:n processing steps (e.g. fileting): "Splitting"
b) for preserving products (i.e. 1:1 or n:1 processing steps that take longer, such as marinating or smoking/curing), select "Preserving"
c) for other processing steps (e.g. producing a final product from raw/intermediate products), select "Transforming".

8. Enter your 13-digit GLN (Global Location Number) in the "Business Location" field. This field defaults to the GLN of the logged-in user's company for convenience.

9. You can optionally add a tracking code for internal purposes.

10. Enter the date of processing in the "Date of Processing" box.

11. Specify the expiration date in the "Best before date" box using the calendar function.

12. For certain products the "consume by" date must be given in the "Use by date" box too.

13. Where methods of preservation are used, enter the preservation start date in the "Start preservation period" box and the end date in the "End preservation period" box.

14. If the item has been frozen this can be indicated as well as the date of first freezing.

15. You can add optionally a transactional reference type and number.

5.5 Sending messages

Records that you have saved using the data entry masks described above do **not** get transferred to the fTRACE server immediately. The number of outstanding, i.e. not-yet-sent, messages appears in a blue oval to the right of the "Pending" button:

![History Pending](image)

Click on the "Pending" button to send the messages to the fTRACE Server (and thus release them). You will receive a summary of all pending records:

**Pending notifications**

![Pending notifications](image)

There are a number of useful functions available to the lower-left side of the "Pending" mask:

By clicking on the **icon, you can view a selected record once more and check that it is correct. The system jumps directly into the familiar entry mask (e.g. "Fishing" or "Processing"). It is not possible to make changes in this mode, however.
Clicking on the icon allows you to edit particular entries for the selected record prior to sending it off. The system jumps directly into the familiar entry mask (e.g. "Fishing" or "Processing") here too.

Clicking on the icon allows you to tag a marked record as a "favourite" which facilitates data entry and saves you time. This is useful if you find yourself often repeating similar processes, for instance.

Clicking on the icon deletes the selected records.

The data should be transferred to the fTRACE server as soon as you are sure it is correct. To do this, click on the check box to the left of the record (for convenience, you can select all outstanding records by clicking on the uppermost check box) and click "Submit all selected messages".

Sent messages no longer appear in the "Pending" mask, i.e. only when there are no entries left have all records actually been transmitted to the fTRACE server.

As a consequence, when all records have been transferred, a blue oval no longer appears next to the "Pending" button either:

5.6 Historical view

The "History" mask was created to give better oversight, and it lists all the records that your company has uploaded to the fTRACE server.
In contrast with the "Pending" mask, you don't have the option of editing or deleting records here.