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EuroFIR Web Services

EuroFIR Food Data Transport Package

Version 1.3

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in collaboration with

Ian D. Unwin, Mark A. Roe, Heikki Pakkala, and Erik Nørby

EuroFIR Technical Report D1.8.20












Disclaimer

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EuroFIR, the world leading European Network of Excellence on Food Composition Databank systems (http://www.eurfir.net/) is a partnership between 49 universities, research institutes and small-to-medium sized enterprises (SMEs) from 26 countries. EuroFIR aims to develop and integrate a comprehensive, coherent and validated databank providing a single, authoritative source of food composition data for Europe.

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EuroFIR Web Services

FOOD DATA TRANSPORT PACKAGE

VERSION 1.3

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EuroFIR Web Services
EuroFIR Food Data Transport Package
Version 1.3

Content

Objective

The objective of the EuroFIR Food Data Transport Package for food data interchange is to ensure the receiver, e.g. the food data compilers, a simple and comprehensive access to relevant and up-to-date food (product) information in national food composition databases. The EuroFIR Food Data Transport Package is developed from recommendations defined in the COST Action 99[1] – Eurofoods project as well as the international INFOODS network[2 3]. The EuroFIR Food Data Transport Package's intended use is data transport between the food data compilers in EuroFIR and transport of food data from compilers to the EuroFIR eSeach facility. It is the first XML transport package to be defined for information interchange via Web Services in EuroFIR.

The EuroFIR Food Data Transport Package is not a comprehensive package. The XML template defined for the EuroFIR Food Data Transport Package contains only the most necessary information for the end-user/receiver to be able to assess the quality of the data for their work. It reflects the information presently existing in European food composition databases. It is expected to be expanded following the information becoming available in the European food composition databases.

Background

Due to the increasing demand for harmonisation and standardisation of food product data the COST Action 99 – Eurofoods published the Eurofoods Basic recommendations for food composition database management and data interchange[1].

Based on the Eurofoods recommendations and succeeding work in connection with the EPIC project, a pragmatic and basic solution for food data interchange in the EuroFIR network was developed during the first year of the EuroFIR project. The solution uses an XML template to define and structure the contained data.

In 2005, a project group (core database group) was established with representation from compilers with online database and IT-specialists. The XML standard was chosen for the data interchange, and a specific template for interchange of food composition data was developed and tested on existing online servers.

The definitions in the Transport Package are based on the EuroFIR draft Standard for Food Composition Data and its Technical Annex[4]. For detailed information on data entities and standard thesauri, the reader is referred to these documents.

[1] Schlotke, F., Becker, W., Ireland, J., Møller, A., Ovaskainen, M.-J., Monspart, J. and Unwin, I. (2000). Basic Recommendations for Food Composition Database Management and Interchange.
Report by the COST Action 99 – Eurofoods Working Group on Food Data Management and Interchange. Report No. EUR 19538, European Commission. ()

[2] Klensin, J.C. (1992). INFOODS Food Composition Data Interchange Handbook. The United Nations University, Tokyo, Japan. (http://www.unu.edu/unupress/unupbooks/80774e/80774E00.htm)

[3] INFOODS (2004). Technical workshop on Standards for food composition data interchange, Rome, 19-22 January 2004. (ftp://ftp.fao.org/es/esn/infoods/interchange.pdf)

[4] Becker et al.: Proposal for structure and detail of a EuroFIR standard on food composition data
I: Description of the standard (2007-07-13) and II: Technical Annex (2007-11-05); EuroFIR working documents, 2007.

Changes from version 1.0

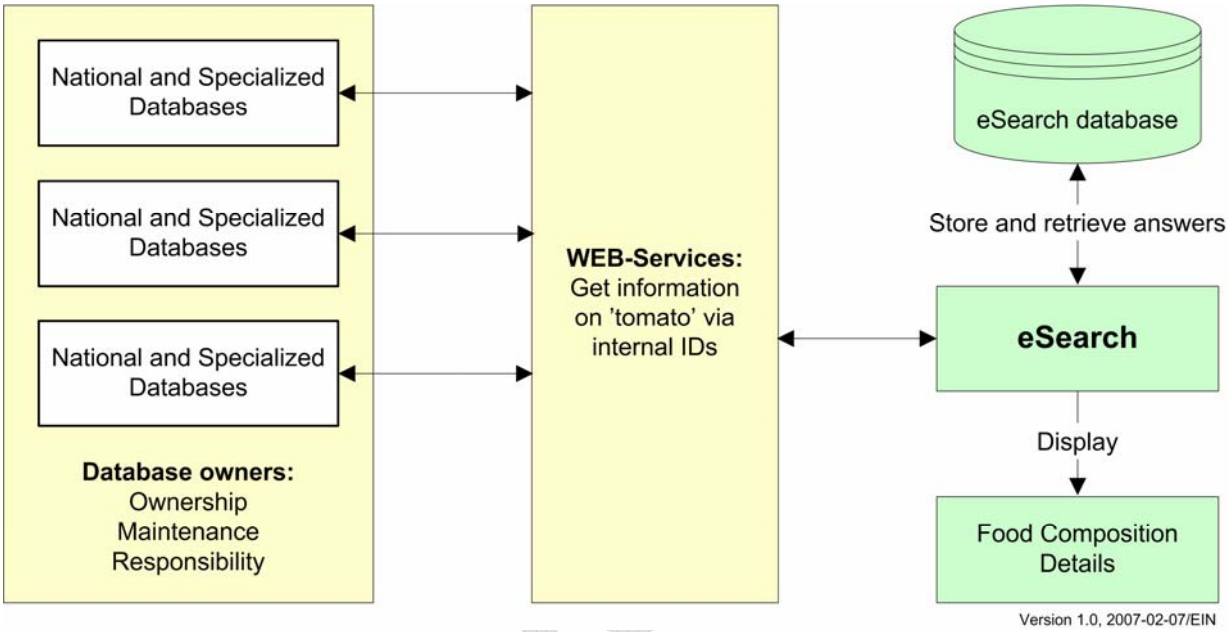
The EuroFIR Food Data Transport Package is undergoing constant updates. The definitions in the Transport Package are based on the EuroFIR draft Standard for Food Composition Data and its Technical Annex[4].

The most recent version of the draft Standard's Technical Annex (2007-11-05) contains considerable changes and additions. The XML template for the EuroFIR Food Data Transport Package has been changed accordingly.

- The root element <EuroFIRTransportPackage /> has been renamed to <EuroFIRFood-DataTransportPackage />;
- The root element's attribute list has been decreased by removing redundant information, the attributes *name* and *versiondat*e has been removed;
- The position of standard vocabularies has been altered;
- Element <ShortContentName /> has been added to the <Content /> element;
- Element < OriginalFoodClassification /> has been added to the <Content /> element;
- Element <QualityAssessmentScheme /> has been added to the <Content /> element, the specific definitions of this element are still pending;
- Element <ReasonForCreation /> has been added to the <Content /> element;
- Element <Description /> has been renamed to <FoodDescription />;
- Element <FoodIdentifications /> has been renamed to <FoodIndentifers />;
- Element <FoodIdentification /> has been renamed <FoodIdentifier />;
- Sub element <Identifier /> to <FoodIdentifier /> has been added;
- For element <FoodName /> a new attribute *kind* has been added to indicate whether the food name is preferred (attribute: *kind="preferred"*) or a synonym (attribute: *kind="synonym"*);
- A new nested element <Recipe /> with sub-elements has been added to the <FoodDescription /> element;
- The value of the <ComponentIdentifier /> attribute system has been changed to "EuroFIR" when indicating that the component identifier is a EuroFIR component identifier;
- For the <Value /> element the following attributes have been added: *dategenerated*, *dateevaluated*, *methodparameter*, and the attribute *methodidentifier* has been renamed *medthodindicator*;
- The element <BestLocation /> has been renamed <SelectedValue /> and attribute *acquisitiontype* has been added;
- The elements <Mean /> and <StandardError /> has been added as new nested elements to the <Vallue /> element;
- The element <NoOfAnalysis /> element has been renamed to <NoOfAnalyticalPortions /> and two attributes *portionsize* and *replicates* has been added;
- For the element <QualityIndex /> seven attibutes *foodidentification*, *componentidentification*, *samplingplan*, *samplenumber*, *samplehandling*, *method*, and *performance* has been added;
- New <Value /> sub-element structures have been added: <ContributingValues />, <Sample />, and <MethodSpecification />.

The EuroFIR Food Data Transport Package

The EuroFIR Food Data Transport Package XML template is based on a common XML de facto standard for food composition data interchange. It enables data to be transferred between food data compilers and between the food data compilers and the EuroFIR eSearch platform using web services' applications.



The communication between the national or specialized database and the "outside world" is maintained by the use of web services implemented at the servers of the national and specialized databases. This allows the national and specialized databases to communicate directly with the eSearch platform, and it also provides the possibility for the national and specialized databases to communicate directly using the EuroFIR XML template to exchange data.

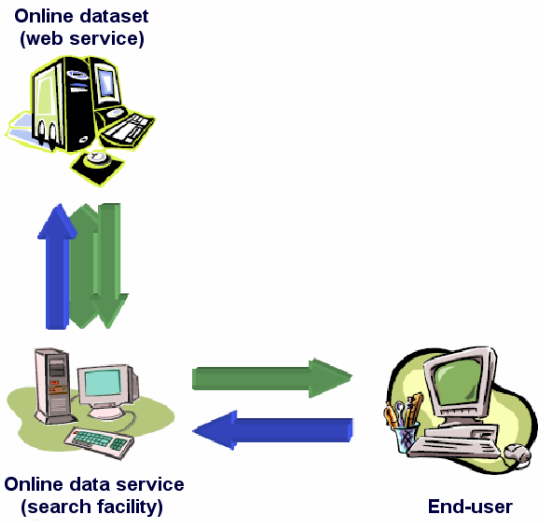
In the greater aspect, the EuroFIR Food Data Transport Package XML template fulfils the data transfer between online datasets and their external users (either directly or indirectly).

The full data transfer process is indicated below, and incorporates the following data transactions some of which using the Food Data Transport Package

- The compiler maintains food composition data on own web site with web service
- The end-user/receiver can build their own design for the food composition data
- The end-user/receiver updates information from the compiler automatically

The full data flow is shown in the following figure:

- The compiler makes his data available online in XML on his web site
- The online data service (e.g. the EuroFIR eSearch facilities) creates communication between own web server and the compiler's XML files
- The end-user asks for a products information
- The online data service finds the relevant information and returns them to the end-user



Formal conventions

Properties

For each entity set in the database schema, a list of all supported properties is provided. Each property is given a name, a unique property-id to be used in interchange packages (spelled out), a data type and a priority.

Further detailed notes and explanations are provided for each property under *scope note (see annex 1)*.

As a default rule, a property *Remark* (type memo) is assigned to each main element within the XML template. This allows storage of all additional information not covered elsewhere in the schema.

Priorities

The Eurofoods recommendations included priorities of properties based on the level of operation. The lower the level, according to the Eurofoods recommendations' four-level structure, the more metadata is expected because the data reported is closer to its original source.
The priorities given in the original Eurofoods recommendations were to be interpreted as seen from a food composition data compiler's point of view. The same prioritization has been followed here.
There are two priorities:

1. *Mandatory* (M) properties build the core set of data that is needed to be able to capture the basic idea of a given food composition study.
2. *Optional* (O) properties only apply to special circumstances and serve as a guideline to possibly important data.

In some cases, the priority, *recommended*, is given in the specifications for an element. This means that the information is optional, but it is preferred that the information is given, if possible.
Priorities are also given for whole entity sets (i.e. superior XML elements). If a recommended or optional entity set is used, the priorities for its properties apply as indicated in the entity set.

Complementary Use of Thesaurus Based Values and Free Text

Properties that use set, THS (see *Data types* and *Standards and thesauri*) as their data type, only allow values that are part of the corresponding thesaurus. If for some reason the given thesaurus is not adequate, if a certain term is missing in the thesaurus, or if free text description is preferred over standardised vocabulary, the MEMO attribute should be used instead of the VALUE attribute. Further remarks should be placed in the REMARKS attribute. This mechanism allows use of both systems in parallel or introduction of new terms that might later become standard terms in the thesaurus.

Data Types

Table 1 shows the basic original data types defined the Eurofoods Recommendations together with the suggested XML datatypes[5] for the XML template:

Abbreviation	Eurofoods Data Type[1]	XML Data Type
STR*nnn*	Text String with a maximum of *nnn* characters where *nnn* stands for a number between 1 and 255. 255 applies if no length is specified. Currently, the XML encoding specifies the use of the ISO 8859-1).	string
MEM	Memo: text strings with a limit larger than 255 characters	string
DAT	Date: generally in the extended form, CCYY-MM-DD, with leading zeros according to ISO 8601:1988; nn case of reduced precision, days (DD), months (MM) or years (YY) may be omitted starting from the extreme right-hand side, e.g. 1999-07 or 1985. If time is also relevant use CCYY-MM-DD/hh:mm:ss	date
INT	Integer: in the range of +/- 2147483648 (= +/- 2^{31})	integer
NUM	Decimal Numbers: All given decimals must be significant. Trailing zeros are not cut, i.e. trailing zeros should be used to indicate significant decimals.	decimal
FRC	Fraction: a decimal number between 0 and 1 (0 and 1 inclusive)	
BLN	Boolean: 1 = true, 0 = false	boolean
THS	Thesaurus Entry: valid interchange codes of thesaurus concepts. In the context of relational databases, thesauri are also known as *look-up tables*. Which thesaurus is used for a property is specified in the corresponding explanations.	string
FIL	Additional (multimedia) Files: Generally files are referred to as URIs. If a leading “http://” or “ftp://” is omitted, “file://MMFILES/*” is the default, i.e. a simple filename refers to a file, *, in the directory MMFILES, which is part of the interchange package.	anyURI
n/a	Not applicable – used for parent elements, which only encapsulates child elements and include no information themselves	

From Eurofoods recommendations for food data management and data interchange[1] with addition

[5] W3C XML Schema Part 2: Datatypes Second Edition, W3C Recommendation 28 October 2004 (http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/)

Standards and thesauri

The EuroFIR Food Data Transport Package uses as widely as possible data representation as recommended in international and regional standard vocabularies and thesauri.

Standards

A number of standards of the International Organization for Standardization (ISO), Geneva, Switzerland address issues of data interchange. The following standards have so far been identified as relevant for food composition data interchange. Some of these standards have been included as thesauri in the EuroFIR Food Data Transport Package, see next section. For more information on the standards, see http://www.iso.ch/.

- **ISO 639** Code for the representation of names of languages (current version available from ISO 639 Registration Authorities (ISO 639/RA) [http://www.infoterm.info/standardization/iso_639_1_2002.php].
- **ISO 3166** Codes for the representation of names of countries and their subdivisions -- Part 1: Country codes and Part 2: Country subdivision code available at the ISO 3166 code lists page [http://www.iso.org/iso/country_codes/iso_3166_code_lists.htm].

The rules for the combinations of countries and languages best practices are defined in

- **Internet RFC4646** Defining Current Best Practice with regard to Tags for Identifying Languages, The Internet Society (2006) [http://tools.ietf.org/html/rfc4647].
- **Internet RFC4647** Defining Current Best Practice with regard to Matching of Language Tags, The Internet Society (2005) [http://tools.ietf.org/html/rfc4646].

Indirectly, the following standards are also referred to in the Food Data Transport Package:

- **ISO 3297** Information and documentation -- International standard serial numbering (ISSN)
- **ISO 6093** Information processing -- Representation of numerical values in character strings for information interchange
- **ISO 8601** Data elements and interchange formats -- Information interchange -- Representation of dates and times
- **ISO 8859** Information processing -- 8-bit single-byte coded graphic character sets -- Part 1: Latin alphabet No. 1
- **ISO 8879** Information processing -- Text and office systems -- Standard Generalized Markup Language (SGML)

Thesauri

The Eurofoods Basic Recommendations[1] list a series of standard vocabularies, thesauri, that has been included in the EuroFIR Food Data Transport Package XML template together with some of the ISO standard representations.

The thesauri are available as XML files. The locations are given below. The thesauris will be defined as XML namespaces in a future version of the EuroFIR Food Data Transport Package.

The LanguaL 2007 food description thesaurus is publicly accessible from

http://www.langual.org/xml/langual2007.xml

Similarly, the LanguaL 2008 food description thesaurus is accessible from

http://www.langual.org/xml/langual2008.xml

The current version of LanguaL is available as

http://www.langual.org/xml/langual.xml

The EuroFIR standard vocabularies, the “small” thesauri, are publicly accessible in XML format from the URI:

http://www.eurofir.org/xml/...

With the following file names

The following standard vocabularies are currently implemented (listed with filename):

- **acquisitiontype** EuroFIR standard representation of the aquisitiontype
  File: EuroFIR_Acquisition_Type_Thesaurus_version_1.0.xml
- **component** EuroFIR standard representation of the component identifier
  File: EuroFIR_Component_Thesaurus_version_1.0.xml
- **unit** EuroFIR standard representation of units of measurements
  File: EuroFIR_Matrix_Unit_Thesaurus_version_1.0.xml
- **matrixunit** EuroFIR standard representation of matrix unit
  File: EuroFIR_Matrix_Unit_Thesaurus_version_1.0.xml
- **methodtype** EuroFIR standard representation of method type
  File: EuroFIR_Method_Type_Thesaurus_version_1.0.xml
- **methodindicator** EuroFIR standard representation of method identifier
  File: EuroFIR_Method_Indicator_Thesaurus_version_1.0.xml
- **valuetype** EuroFIR standard representation of value type
  File: EuroFIR_Value_Type_Thesaurus_version_1.0.xml
- **quality** EuroFIR standard representation of data quality data indicator
  Thesaurus not defined for FDTP version 1.3

- **domaintype** EuroFIR standard representation of domain type
  Thesaurus not defined for FDTP version 1.3
- **compilationtype** EuroFIR standard representation of compilation type
  Thesaurus not defined for FDTP version 1.3

In addition, the ISO standard abbreviations for languages and countries are available in XML files

- **language** ISO 639:1988 - Code for the representation of names of languages
  URI: http://www.loc.gov/standards/iso639-2/ISO-639-2_8859-1.txt l
- **country** ISO 3166-1:1997 - Codes for the representation of names of countries and their subdivisions -- Part 1: Country codes
  ISO 3166-2:1998 - Codes for the representation of names of countries and their subdivisions -- Part 2: Country subdivision code
  URI: http://www.iso.org/iso/iso_3166-1_list_en.zip

The INFOODS tagname thesaurus will likewise be implemented

- **INFOODS** INFOODS tagname thesaurus
  Thesaurus database pt. not defined for the FDTP.

Short description of the XML template

Introduction

This short description only incorporates the EuroFIR Food Data Transfer Package XML template's elements (not the elements' individual attributes). For the full structural layout, see Annex 3 and 4.

The XML Declaration

The EuroFIR Food Data Transport Package's XML declaration currently uses ISO-8859-1 encoding:

```
<?xml version="1.0" encoding="iso-8859-1" ?>
```

UTF-8 (UTF-16) encoding is allowed and it is envisaged that future versions of the Food Data Transport Package will use UTF-8 as default encoding in the future.

The Root Element, EuroFIRFoodDataTransportPackage

The root element, EuroFIRFoodDataTransportPackage, encapsulates the specific food data information. The EuroFIR Food Data Transport Package, version 1.3, XML template has a simple layout; it contains three header elements StandardVocabularies, SenderInformation and Content, and one food data entity represented by the Foods element.

The full overview of the data model used in the EuroFIR Food Data Transport Package, version 1.3, XML template is shown schematically to the right. The single elements will be described in the following section.

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
```

The Root Element, EuroFIRFoodDataTransportPackage, needs specific attention. It defines the content of the XML packagenection with Web Services.
The start tag of the root element looks like

```
<EuroFIRFoodDataTransportPackage version="1.3" sentdate="2008-07-30">
```

which defines that the content and its structure in the XML transport package, e.g. in Web Services will be as defined in this document, which is currently the most comprehensive collecting of elements and attributes for food data interchange.

In connection with the EuroFIR web services, other XML transport packages are under development, using elements with names and meanings as defined in this document, but possibly with a different structure of elements and attributes.

The root elements currently defined are

EuroFIRFoodDataTransportPackage, the full Food Data Transport Package for the eSearch (described in this document)

EuroFIRFoodListTransportPackage, the list of food names in a dataset (under development)

EuroFIRComponentListTransportPackage, the list of component names in a dataset (under development)

The full specifications of the EuroFIR Food Data Transport Package, version 1.3, are given in Annex 1.

The header element, StandardVocabularies

The StandardVocabularies element is further divided into one or more sub entities, Standard-Vocabulary.
These contain information about (URLs, links to) standard vocabularies, thesauri, used in the food and component description of the data transported.

The standard vocabularies may be redefined as XML namespaces in a future version of the EuroFIR Food Data Transport Package.

The current positions and versions of standard vocabularies are

```
<StandardVocabularies>
      <StandardVocabulary system="LanguaL" position="http://www.langual.org/xml/langual.xml" />
<StandardVocabulary system="component" position=↵
            "http://www.eurofir.org/xml/EuroFIR_Component_Thesaurus _version_1.0.xml" />
      <StandardVocabulary system="unit" position=↵
            "http://www.eurofir.org/xml/EuroFIR_Matrix_Unit_Thesaurus_version_1.0.xml" />
      <StandardVocabulary system="matrixunit" position=↵
            "http://www.eurofir.org/xml/EuroFIR_Matrix_Unit_Thesaurus_version_1.0.xml" />
      <StandardVocabulary system="methodtype" position=↵
            "http://www.eurofir.org/xml/EuroFIR_Method_Type_Thesaurus_version_1.0.xml" />
      <StandardVocabulary system="methodindicator" position=↵
            "http://www.eurofir.org/xml/EuroFIR_Method_Indicator_Thesaurus_version_1.0.xml" />
      <StandardVocabulary system="valuetype" position=↵
            "http://www.eurofir.org/xml/EuroFIR_Value_Type_Thesaurus_version_1.0.xml" />
      <StandardVocabulary system="acquisitiontype" position=↵
            "http://www.eurofir.org/xml/EuroFIR_Acquisition_Type_Thesaurus_version_1.0.xml" />
      <StandardVocabulary system="publicationtype" position=↵
            "http://www.eurofir.org/xml/EuroFIR_Reference_Type_Thesaurus_version_1.0.xml" />
      <StandardVocabulary system="language" position=↵
            "http://www.loc.gov/standards/iso639-2/ISO-639-2_8859-1.txt" />
      <StandardVocabulary system="country" position="http://www.iso.org/iso/iso_3166-1_list_en.zip" />
</StandardVocabularies>
```

(all <StandardVocabulary> tags should occupy one line only, this is indicated with the ↵ symbol)

The header element, SenderInformation

The header element, SenderInformation, contains information about the sender of the Food Data Transport Package and information about how to contact the sender. The SenderInformation element is further divided into ten sub entities:

```
<SenderInformation />
    <Sender />
    <OrganisationName />
    <SuperOrganisationName />
    <PostalAddress />
    <Country />
    <Telephone />
    <Fax />
    <Email />
    <WWWs />
        <WWW />
    <Remarks />
```

- Sender, holding the name of the sender of the food data;
- OrganisationName, the organisation to which the sender belongs;
- SuperOrganisationName, entity to which the organisation belongs;
- PostalAddress, the postal address (street, street number, city, zip);
- Country, the country to which the sender and organisation belongs;
- Telephone, telephone number of the sender (in international format
- Fax, the fax number of the sender (in international format);
- Email, the e-mail address of the sender;
- WWWs, placeholder for URLs of the sender/sender's organisation web site or web site to which the data belong;
- WWW, single URL;
- Remarks, additional remarks concerning the sender not covered by the elements above.

The header element, Content

The Content element contains the information about the food data contained in the Foods element. The Content element is further subdivided into six elements:

```
<Content />
    <ContentName />
    <ShortContentName />
    <ResponsibleBody />
    <LegalRestrictions />
    <SummaryOfContent />
    <OriginalFoodClassification />
    <QualityAssessmentScheme />
    <BibliographicReference />
    <Remarks />
    <ReasonForCreation />
```

- ContentName, the (official) name of the data in the Foods element;
- ShortContentName; a short name – eventually abbreviation – of the (official) name;
- ResponsibleBody, the body/organisation responsible for the data contained in the Foods element;
- LegalRestrictions, any legal restrictions, e.g. copyrights, concerning the data contained in the Foods element;
- SummaryOfContent, a short description of the data contained in the Foods element;
- OriginalFoodClassification, information about the food classification used in connection with the <FoodClass system="origgpcd" /> element in the <FoodDescription /> element;
- QualityAssessmentScheme, information about the data quality assessment scheme used in the value documentation (this element is currently under development);
- BibliographicReference, the overall bibliographic reference to the source of the data held in the Foods element, e.g. a published food composition database;
- Remarks, any futher remarks about the content of the transport package;

- ReasonForCreation, a short explanation about why (or how) this specific food data transport package was created.

The food data element, Foods

The Foods element encapsulates the specific food data contained in the EuroFIR Food Data Transport Package.
Each food is represented in a Food element.
The Food element is further subdivided into two nested elements:

```
<Foods />
    <Food />
        <FoodDescription />
        <Components />
```

- Description containing the description of the food
- Components containing the information on the components in the food.

The FoodDescription element

The Description element contains four sub-entities:

- FoodIndentifiers element containing one or more local (national or regional) or international identifications of the food in sub-elements FoodIdentifier and Indentifier;
- FoodClasses element containing one or more local (national or regional) or international classifications of the food in sub-elements FoodClass;
- FoodNames element containing the name of the food in one or more languages (including scientific names) in sub-elements FoodName;
- Recipe element containing the information about ingredients, if the food data are based on a recipe, either analysed or calculated;
- Remarks element containing any information not included in the four previous elements.

```
<Foods />
    <Food />
        <FoodDescription />
            <FoodIdentifiers />
                <FoodIdentifier />
                    <Identifier />
            <FoodClasses />
                <FoodClass />
            <FoodNames />
                <FoodName />
            <Recipe />
                <OriginalRecipeCode />
                <RecipeReference />
                <RecipeProcedure />
                <Ingredients />
                    <Ingredient />
                        <IngredientName />
                        <Remarks />
            <Remarks />
```

The Components element

The Components element encapsulates the Component elements which contain the food composition data. The Component element contains the two major component elements: the ComponentIdentifiers containing one or more local (national or regional) component identifers in sub-elements ComponentIdentifier (for harmonised data, it must include an identifier from the appropriate thesaurus), and the Values element containing a Value element containing the following elements:

- SelectedValue containing the value of the food component, representing the best value (location) according to the choice of the food composition compiler;
- Mean containing the mean value of the statistic;
- Median containing the median of the statistic;
- Minimum containing the minimum value of the statistic;
- Maximum containing the maximum value of the statistic;
- StandardDeviation containing the standard deviation of the statistic;
- StandardError containing the standard error of the statistic;
- NoOfAnallyticalPortions containing the number of analyses;

```
<Foods />
  <Food />
    <FoodDescription />
    <Components />
      <Component />
        <ComponentIdentifiers />
            <ComponentIdentifier />
        <Values />
          <Value />
            <SelectedValue />
            <Mean />
            <Median />
            <Minimum />
            <Maximum />
            <StandardDeviation />
            <StandardError />
            <NumberOfAnalyticalPortions />
            <QualityIndex />
            <Remarks />
            <ContributingValues />
            <Sample />
            <MethodSpecification />
            <References />
              <ValueReference />
              <MethodReference />
```

- QualityIndex containing the quality index for the value according to the EuroFIR data quality assessment scheme (this element is currently under development);
- Remarks containing any further remarks concerning the value not included in the other Value sub-elements;
- ContributingValues containing any values contributing to the selected value above, it contains nested elements, ContributingValue, which has the same structure as Value, except for containing the ContributingValues element;
- Sample containing information about the sampling procedure and sample handling of the samples contributing to SelectedValue;
- MethodSpecification containing information about the method of analysis, analytical key steps, and laboratory performance;
- References containing two sub-elements: ValueReference containing the bibliographic reference to the source of the value, and MethodReference containing the specific reference to the analytical procedure the value is derived with.

The Full Structure of the EuroFIR Food Data Transport Package

EuroFIR XML Food Data Transport Package - Version 1.3

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
        <StandardVocabulary />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                    <FoodIdentifier />
                        <Identifier />
                <FoodClasses />
                    <FoodClass />
                <FoodNames />
                    <FoodName />
                <Recipe />
                    <OriginalRecipeCode />
                    <RecipeReference />
                    <RecipeProcedure />
                    <Ingredients />
                        <Ingredient />
                            <IngredientName />
                            <Remarks />
                <Remarks />
```

EuroFIR XML Food Data Transport Package - Version 1.3

```
<Components />
    <Component />
        <ComponentIdentifiers />
            <ComponentIdentifier />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                    <ContributingValue />
                        <SelectedValue />
                        <Mean />
                        <Median />
                        <Minimum />
                        <Maximum />
                        <StandardDeviation />
                        <StandardError />
                        <NumberOfAnalyticalPortions />
                        <QualityIndex />
                        <Sample />
                            <SamplingReference />
                            <ReasonForSampling />
                            <SamplingStrategy />
                            <PlaceOfSampling />
                            <DateOfSampling />
                            <PrimarySampleUnitSize />
                            <NoOfPrimarySampleUnits />
                            <CompositeSample />
                            <PrimarySampleHandling />
                            <DateOfArrivalAtLaboratory />
                            <LaboratoryStorage />
                        <MethodSpecification />
                            <MethodId />
                            <OfficialMethod />
                            <GeneralDescription />
                            <MethodReference />
                            <AnalyticalKeySteps />
                                <Extraction />
                                <Separation />
                                <Identification />
                                <Detection />
```

```
                    <Quantification />
                    <OtherMethodKeySteps />

                    <AdditionalDescriptors />
                <LaboratoryPerformance / >
                    <AnalyticalPerformanceDetails
                    />
                    <Accuracy />
                    <Applicability />
                    <Precision />
                    <Repeatability />
                    <Reproducibility />
                    <Selectivity />
                    <Sensivity />
                    <Specificity />
                <Remarks / >
            <Remarks / >
            <References / >
                <ValueReference / >
                <MethodReference / >
    <Sample / >
        <SamplingReference / >
        <ReasonForSampling / >
        <SamplingStrategy / >
        <PlaceOfSampling / >
        <DateOfSampling / >
        <PrimarySampleUnitSize / >
        <NoOfPrimarySampleUnits / >
        <CompositeSample / >
        <PrimarySampleHandling / >
        <DateOfArrivalAtLaboratory / >
        <LaboratoryStorage / >
    <MethodSpecification / >
        <MethodId / >
        <OfficialMethod / >
        <GeneralDescription / >
        <MethodReference / >
        <AnalyticalKeySteps / >
            <Extraction />
            <Separation />
            <Identification />
            <Detection />
            <Quantification />
            <OtherMethodKeySteps />
            <AdditionalDescriptors />
        <LaboratoryPerformance / >
            <AnalyticalPerformanceDetails />
            <Accuracy />
            <Applicability />
            <Precision />
```

```
                <Repeatability />
                <Reproducibility />
                <Selectivity />
                <Sensivity />
                <Specificity />
            <Remarks / >
        <References / >
            <ValueReference / >
            <MethodReference / >
```

The minimum requirements – date 2008-07-30.

The EuroFIR Food Data Transport Package, version 1.3, XML template has minimum requirements for the contained information.

The following list indicates the minimum requirements listed in numerical display. All the elements listed are mandatory in food data interchange and together with the corresponding attributes; they constitute the minimum requirements of the EuroFIR Food Data Transport Package (2008-07-30).

ElementId	ElementName
0001	<EuroFIRFoodDataTransportPackage />
0002	<StandardVocabularies />
0003	<StandardVocabulary />
0004	<SenderInformation />
0005	<Sender />
0006	<OrganisationName />
0016	<Content />
0017	<ContentName />
0018	<ShortContentName />
0019	<ResponsibleBody />
0024	<BibliographicReference />
0027	<Foods />
0028	<Food />
0029	<FoodDescription />
0030	<FoodIdentifiers />
0031	<FoodIdentifier />
0032	<Identifier />
0034	<FoodNames />
0035	<FoodName />
0045	<Components />
0046	<Component />
0047	<ComponentIdentifiers />
0048	<ComponentIdentifier />
0049	<Values />
0050	<Value />
0051	<SelectedValue />
0148	<References />
0149	<ValueReference />

The following requirements must be fulfilled especially for the StandardVocabularies element:

- Always one StandardVocabularies element with at least one or more StandardVocabulary elements.

- In practice, all used standard vocabularies should be included. This means that for food composition data interchange within EuroFIR, the following standard vocabularies should be represented:

    - language
    - component identifier thesaurus
    - unit
    - matrixunit
    - methodtype
    - methodindicator
    - valuetype
    - acquisitiontype

Future developments

It is envisaged that the EuroFIR Food Data Transport Package XML template will undergo several revisions during the coming years as data interchange using the template is being tested.

Further information

For further information, see the EuroFIR draft Standard for food composition data and its Technical Annex[4].

Annex I

Detailed Specifications of the EuroFIR Food Data Transport Package

The EuroFIR Food Data Transport Package is described in details in the following annex.

EuroFIRFoodDataTransportPackage root element

Description:

The root element for the EuroFIR Food Data Transport Package.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
  <StandardVocabularies />
  <SenderInformation />
  <Content />
  <Foods />
```

Restrictions:

Mandatory.

Type: n/a.

Max 1 (one) EuroFIRFoodDataTransportPackage per transport package.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
name	Name of the Food Data Transport Package XML template	string		Yes	
version	Version of the Food Data Transport Package XML template	string		Yes	
versiondate	Version date of Food Data Transport Package XML template	date		Yes	
sentdate	Date the Food Data Transport Package was sent	date		Yes	
service	Indication of which service information the Food Data Transport Package is carrying	string		Yes	Currently, the following modalities of *service* are defined: 0 the full Food Data Transport Package for eSearch 1 List of food names in a dataset 2 List of component names in a dataset

Further specifications:

StandardVocabularies element

Description:

The main element for standard vocabularies (thesauri). Encapsulates the element StandardVocabulary.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
  <StandardVocabularies />
  <SenderInformation />
  <Content />
  <Foods />
```

Restrictions:

Mandatory.

Type: n/a.

Max 1 (one) StandardVocabularies element per EuroFIRFoodDataTransportPackage.
The StandardVocabularies element must contain all standard vocabularies referred to in the succeeding sections of the XML template.

Recommendations:

It is mandatory that the EuroFIRFoodDataTransportPackage contains the StandardVocabularies element with reference to the thesauri used in the food and component descriptions

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

StandardVocabulary element

Description:

The StandardVocabulary element contains reference (link) to a thesaurus (controlled vocabulary).

Element Position:

```
<EuroFIRFoodDataTransportPackage />
   <StandardVocabularies />
      <StandardVocabulary />
   <SenderInformation />
   <Content />
   <Foods />
```

Restrictions:

Mandatory.
Type: n/a.
At least 1 (one) StandardVocabulary element per StandardVocabularies element.
Only 1 (one) StandardVocabulary per system attribute.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
system	Unique name of the thesaurus.	string		Yes	
position	URL of the thesaurus (typically at EuroFIR Technical Web Site)	anyURI		Yes	

Further specifications:

SenderInformation element

Description:

The SenderInformation element contains information about the Sender of the EuroFIR Food Data Transport Package.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
  <StandardVocabularies />
  <SenderInformation />
  <Content />
  <Foods />
```

Restrictions:

Mandatory.
Type: n/a.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The SenderInformation element corresponds to the INFOODS <Sender/> element

Sender element

Description:

The Sender element contains information about the Sender of the EuroFIR Food Data Transport Package. The Sender may be a person or a corporate entity.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email
        />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods
    />
```

Restrictions:

Mandatory.

Eurofoods data type: STR; XML Data Type: string.

It must contain at least one or more of the subsidiary child elements.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Sender element corresponds to the INFOODS <sendref/> element.
The Sender element corresponds to the Eurofoods SENDER field (Source table)

OrganisationName element

Description:

The OrganisationName element contains information about the official name of the organisation. It specifies the organisation to which a person specified in <Sender> belongs.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email
        />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods
    />
```

Restrictions:

Mandatory.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The OrganisationName element corresponds to the INFOODS <orgz/> element.
The OrganisationName element corresponds to the Eurofoods ORGNAM field (Organisation table).

SuperOrganisationName element

Description:

The SuperOrganisationName element contains information about the official name of the umbrella organisation, if applicable.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods />
```

Restrictions:

Optional.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The SuperOrganisationName element corresponds to the Eurofoods SPORGNAM field (Organisation table).

PostalAddress element

Description:

The PostalAddress element contains information the address of the organisation as would be put on a letter, i.e. PO box, address, zip code, city, country, etc.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods />
```

Restrictions:

Recommended.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The PostalAddress element corresponds to the INFOODS <addr/> element.
The PostalAddress element corresponds to the Eurofoods POSTADDR field (Organisation table).

Country element

Description:

The Country element contains the country information of the address of the organisation.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods />
```

Restrictions:

Recommended.

Eurofoods data type: THS; XML Data Type: string.

Recommendations:

Use ISO 3166-1. A country subdivision code as described in ISO 3166-2 can be added after the country code separated by a hyphen, e.g. CH-ZH.

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Country element corresponds to the INFOODS <country> element.
The Country element corresponds to the Eurofoods COUNTRY field (Organisation table).

Telephone element

Description:

The Telephone element contains the telephone number of the Sender.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods />
```

Restrictions:

Recommended.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Telephone and Fax numbers should be formatted from an international point of view. Use the form +country-code area-code sub area-code phone-number. The various blocks should be separated with a space character or hyphen.

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Telephone element corresponds to the INFOODS <phone/> element.
The Telephone element corresponds to the Eurofoods PHONE field (Organisation table).

Fax element

Description:

The Fax element contains the fax number of the Sender.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods />
```

Restrictions:

Recommended.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Telephone and Fax numbers should be formatted from an international point of view. Use the form +country-code area-code sub area-code phone-number. The various blocks should be separated with a space character or hyphen.

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Fax element corresponds to the INFOODS <Fax/> element.
The Fax element corresponds to the Eurofoods FAX field (Organisation table).

Email element

Description:

The Email element contains the Internet e-mail address of the Sender.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods />
```

Restrictions:

Recommended.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

It specifies the sender's electronic mail address. "Email" can be interpreted as an abbreviation for "electronic mail".

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Email element corresponds to the INFOODS <email/> element.
The Email element corresponds to the Eurofoods field EMAIL (Organisation table).

WWWs element

Description:

The WWWs element contains one or more URLs of serder/senderorganisations. It contains the nested WWW element.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods />
```

Restrictions:

Recommended.

Type: n/a

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

WWW element

Description:

The WWW element contains the URL of the Sender, if applicable.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods />
```

Restrictions:

Recommended. If the embedding <WWWs /> has been used. <WWW /> is mandatory.
Eurofoods data type: STR; XML Data Type: anyURI.

Recommendations:

Always give complete URLs. Example: http://www.fao.org/infoods/.

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The WWW element corresponds to the Eurofoods WWW field (Organisation table).

Remarks element

Description:

The Remarks element subsidiary to the SenderInformation contains any further remarks to the SenderInformation not included in the other subsidiary SenderInformation elements, if applicable.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
        <Sender />
        <OrganisationName />
        <SuperOrganisationName />
        <PostalAddress />
        <Country />
        <Telephone />
        <Fax />
        <Email />
        <WWWs />
            <WWW />
        <Remarks />
    <Content />
    <Foods />
```

Restrictions:

Optional.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Any further remarks.

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Remarks element corresponds to the INFOODS <cmt/ element subsidiary to the INFOODS <sender/> element.
The PRemarks element corresponds to the Eurofoods REMARKS field (Organisation table).

Content element

Description:

The Content element contains information on the food data contained in the Food Element. It includes the information about the data base from which the data in the interchange file was obtained, what restrictions apply to the use or publication of the data, and who is responsible for the data.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
  <StandardVocabularies />
  <SenderInformation />
  <Content />
  <Foods />
```

Restrictions:

Mandatory.

Type: n/a.

It must contain at least one or more of the subsidiary child elements.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
language	The language in which the food name is given. Eurofoods Data Type: THS.	string		Yes	According to ISO 639: a 2 character standard ISO language code plus an optional 2 character standard ISO country code sepa-ated by a blank character, e.g. “en” for English or “en UK” for British English. For scientific names, use lan-guage=”tx”.
acquisitiontype	Acquisition Type, is used to record the status of the information reported, such as peer-reviewed scientific publication, evaluated food table data, 'own' data or food manufacturer data. Eurofoods Data Type: THS.	string		Yes	
coverage	Eurofoods Data Type: THS.	string		No	To be defined.
compilationtype	Eurofoods Data Type: THS.	string		No	To be defined.

Further specifications:
The Content element corresponds to (parts of) the INFOODS <source> element.
The Content element corresponds to (parts of) the Eurofoods Source table.

ContentName element

Description:

The ContentName element contains the full name of the interchange dataset.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Mandatory.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Content element corresponds to the INFOODS element.
The ContentName element corresponds to the Eurofoods SRCENAME field (Source table)

ShortContentName element

Description:

The ShortContentName element contains a short version of the full name of the interchange dataset.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Mandatory.

Eurofoods Data Type: STR20; XML Data Type: string; maxlength=20.

This element is used as internal identification of the dataset in the EuroFIR prototyping system.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

ResponsibleBody element

Description:

The ResponsibleBody element contains information on the organisation that is responsible for the content of the data source.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Mandatory.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The ResponsibleBody element corresponds to the Eurofoods RSPONSIB field (Source table).

LegalRestrictions element

Description:

The LegalRestrictions element is an optional immediate subsidiary element of the Content element.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Optional.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

It is used to list any restrictions on the distribution or use of the food data set or other distributed material.

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The LegalRestrictions element corresponds to the INFOODS <restrict/> element.
The LegalRestrictions element corresponds to the Eurofoods LEGLREST field (Source table)

SummaryOfContent element

Description:

The SummaryOfContent element contains a description of the content of an interchange package.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Recommended.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The SummaryOfContent element corresponds to the Eurofoods CONTSUMM field (Source table).

BibliographicReference element

Description:

The BibliographicReference element identifies the data set included in the transport package.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Mandatory.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The BibliographicReference element corresponds to the INFOODS <ref/> element subsidiary to the <source> element
The BibliographicReference element corresponds to the Eurofoods BIBREF field (Source table).

OriginalFoodClassification element

Description:

Description of the original food classification scheme, if used in food description (<FoodClass system="origgpcd").

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Optional.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

QualityAssessmentScheme element

Description:

Description of the quality assessment procedure.

Decision on whether Quality assessment is done on a global level, on value level, or on both levels (e.g. one for scientific literature and one for manufacturers data) is needed.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Optional.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

Remarks element

Description:

The Remarks element subsidiary to the Content element contains any further remarks to the Content not included in the other subsidiary Content elements, if applicable.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Optional.

Eurofoods Data Type: MEM; XML Data Type: string

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Remarks element corresponds to the Eurofoods Remarks field (Organisation table).

ReasonForCreation element

Description:

The ReasonForCreation element subsidiary to the Content element contains further information about why the Food Data Transport Package was created, if applicable.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
        <ContentName />
        <ShortContentName />
        <ResponsibleBody />
        <LegalRestrictions />
        <SummaryOfContent />
        <OriginalFoodClassification />
        <QualityAssessmentScheme />
        <BibliographicReference />
        <Remarks />
        <ReasonForCreation />
    <Foods />
```

Restrictions:

Optional.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Remarks element corresponds to the Eurofoods Remarks field (Organisation table).

Foods element

Description:

The Foods element encapsulates the food specific information in the EuroFIR Food Data Transport Package.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
  <StandardVocabularies />
  <SenderInformation />
  <Content />
  <Foods />
```

Restrictions:

Mandatory.

Type: n/a.

Only one Foods element is allowed in a transport package.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

Food element

Description:

The Food element encapsulates the information (food and component description) for a single food.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
            <Components />
```

Restrictions:

Mandatory.

Type: n/a.

Only one Food element is allowed per food.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Food element corresponds to the INFOODS <food> element.

FoodDescription element

Description:

The Description element encapsulates the subsidiary elements identifying and describing the single food.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
            <Components />
```

Restrictions:

Mandatory.
Type: n/a.
Only one Description element is allowed in each Food element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

FoodIdentifiers element

Description:

The FoodIdentifications element encapsulates the FoodIdentifiers elements.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                    <FoodIdentifier />
                        <Identifier />
                <FoodClasses />
                <FoodNames />
                <Recipe />
                <Remarks />
            <Components />
```

Restrictions:

Mandatory.

Type: n/a.

Only one FoodIdentifiers element is allowed in each Food element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

FoodIdentifier element

Description:

The FoodIdentifier element contains information that by the system attribute identifies the system in which the food identifier is given.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                    <FoodIdentifier />
                        <Identifier />
                <FoodClasses />
                <FoodNames />
                <Recipe />
                <Remarks />
            <Components />
```

Restrictions:

Mandatory.

Type: n/a.

The FoodIdentifiers element must contain one FoodIdentifier element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
system	The system attribute contains information about the system with which the food is identified. To be redefined to include XML names spaces in future version.	string	255	Yes	In most cases the system attribute refers to a thesaurus (GRIN, LanguaL, etc.), which must be declared in a StandardVocabulary element in the StandardVocabularies element. Only one value of the system attribute, “origfdcd”, is allowed without declaring a corresponding thesaurus in the StandardVocabularies element, see Further specifications below.

Further specifications:
The FoodIdentifier and Identifier elements correspond to several of subsidiary elements of the INFOODS <food> element.
The FoodIdentifier and Identifier elements correspond to several of the food identification and description fields (Eurofoods Food table). The system attribute, “origfdcd”, corresponds to the Eurofoods ORIGFDCD field (Food table).

Identifier element

Description:

The Identifier element contains the information that identifies the food according to the directions given by the system attribute.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                    <FoodIdentifier />
                        <Identifier />
                <FoodClasses />
                <FoodNames />
                <Recipe />
                <Remarks />
            <Components />
```

Restrictions:

Mandatory.

Eurofoods data type: THS; XML Data Type: string. If system attribute is “origfdcd” then STR.

The FoodIdentifiers element must contain one FoodIdentifier element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The FoodIdentifier and Identifier elements correspond to several of subsidiary elements of the INFOODS <food> element.
The FoodIdentifier and Identifier elements correspond to several of the food identification and description fields (Eurofoods Food table). The system attribute, “origfdcd”, corresponds to the Eurofoods ORIGFDCD field (Food table).

FoodClasses element

Description:

The FoodClasses element encapsulates the FoodClass elements.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                <FoodClasses />
                    <FoodClass />
                <FoodNames />
                <Recipe />
                <Remarks />
            <Components />
```

Restrictions:

Recommended.
Type: n/a.

Only one FoodClasses element is allowed in each Food element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

FoodClass element

Description:

The FoodClass element contains the information that identifies the food classification according to the directions given by the system attribute.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                <FoodClasses />
                    <FoodClass />
                <FoodNames />
                <Recipe />
                <Remarks />
            <Components />
```

Restrictions:

Recommended.
Type: THS (STR)

The FoodClasses element must contain at least one FoodClass element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
system	The system attribute contains information about the system with which the food is described. To be redefined to include XML names spaces in future version.	string	255	R	In most cases the system attribute refers to a thesaurus (EuroFIR, Codex, etc.), which must be declared in a StandardVocabulary element in the StandardVocabularies element. Only one value of the system attribute, “origgpcd”, is allowed without declaring a corresponding thesaurus in the StandardVocabularies element, see Further specifications below.

Further specifications:
T he FoodClass element corresponds to the specific food classification declared in the INFOODS <specific classification> element.
The FoodClass element corresponds to the Eurofoods fields under the Specific classifications heading (Food table). The system attribute, “origgpcd”, corresponds to the Eurofoods ORIGGPCD field (Food table). If “origcpcd” is used, it is recommended to give a reference to/explain the food classification system in the <OriginalFoodClassification /> in the <Content /> section.

FoodNames element

Description:

The FoodNames element encapsulates the FoodName elements.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                <FoodClasses />
                <FoodNames />
                    <FoodName />
                <Recipe />
                <Remarks />
            <Components />
```

Restrictions:

Mandatory.
Type: n/a.
Only one FoodNames element is allowed in each Food element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

FoodName element

Description:

The FoodName element contains the name of the food in the language given by the language attribute.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                <FoodClasses />
                <FoodNames />
                    <FoodName />
                <Recipe />
                <Remarks />
            <Components />
```

Restrictions:

Mandatory.

Eurofoods data type: STR; XML Data Type: string.

At least one FoodName element per food.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
language	The language in which the food name is given. Eurofoods Data Type: THS.	string		Yes	According to ISO 639: a 2 character standard ISO language code plus an optional 2 character standard ISO country code separated by a blank character, e.g. “en” for English or “en UK” for British English. For scientific names, use language=”tx”.
kind	Indicates whether the food name is a preferred name or a synonym. Eurofoods Data Type: STR.	string		No	The kind attribute has two values, “preferred” or “synonym”. If this attribute is omitted, *kind* is interpreted as “preferred”.

Further specifications:
The FoodName element corresponds to the INFOODS <bvname>, <exname>, etc. elements, subsidiaries of the INFOODS <food> element.
The FoodName element corresponds to the Eurofoods FOODNAME field (Food table).

Recipe element

Description:

The Recipe entity is optional and can be used to record information about a recipe in connection with a food item in the data set.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                <FoodClasses />
                <FoodNames />
                <Recipe />
                <Remarks />
            <Components />
```

Restrictions:

Optional.

Type: n/a.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The recipe element and its subsidiaries are currently included for tests. The retention entity corresponding to preparation of recipe and/or ingredient is still unresolved.

OriginalRecipeCode

Description:

Recipe ID in database, if different from food identifier.

Element Position:

```
<FoodDescription />
    <FoodIdentifiers />
    <FoodClasses />
    <FoodNames />
    <Recipe />
        <OriginalRecipeCode />
        <RecipeReference />
        <RecipeProcedure />
        <Ingredients />
            <Ingredient />
                <IngredientName />
                <Remarks />
    <Remarks />
```

Restrictions:

Optional.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

RecipeReference

Description:

Describes the publication(s) on which the recipe was based.

Element Position:

```
<FoodDescription />
    <FoodIdentifiers />
    <FoodClasses />
    <FoodNames />
    <Recipe />
        <OriginalRecipeCode />
        <RecipeReference />
        <RecipeProcedure />
        <Ingredients />
            <Ingredient />
                <IngredientName />
                <Remarks />
    <Remarks />
```

Restrictions:

Mandatory.
Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

RecipeProcedure

Description:

Description of recipe in text format. Ingredient list and quantities are stored in the Ingredients entity.

Element Position:

```
<FoodDescription />
    <FoodIdentifiers />
    <FoodClasses />
    <FoodNames />
    <Recipe />
        <OriginalRecipeCode />
        <RecipeReference />
        <RecipeProcedure />
        <Ingredients />
            <Ingredient />
                <IngredientName />
                <Remarks />
    <Remarks />
```

Restrictions:

Optional.
Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

Ingredients

Description:

The Ingredients element is optional and can be used to link a derived or aggregated food, food label information, a recipe dish or a composite (pooled) sample to all its contributing foods and their description.

Element Position:

```
<FoodDescription />
    <FoodIdentifiers />
    <FoodClasses />
    <FoodNames />
    <Recipe />
        <OriginalRecipeCode />
        <RecipeReference />
        <RecipeProcedure />
        <Ingredients />
            <Ingredient />
                <IngredientName />
                <Remarks />
    <Remarks />
```

Restrictions:

Optional.

Type: n/a.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
yieldwater	Yield factor describes proportion of the total weight retained after water loss or gain after preparation. Eurofoods Data Type: NUM.	decimal		No	Also used for total yield, i.e. no information on the type of yield (water, fat, etc.)is available, if only this is recorded.
yieldfat	The proportion of the total weight retained after fat loss or gain during preparation. Eurofoods Data Type: NUM.	decimal		No	
yieldalcohol	The proportion of the total weight retained after alcohol loss during preparation. Eurofoods Data Type: NUM.	decimal		No	

Further specifications:

Ingredient

Description:

The Ingredient element holds the information of subsidiary ingredient information (name, amounts, etc.) of the recipe.

Element Position:

```
<FoodDescription />
    <FoodIdentifiers />
    <FoodClasses />
    <FoodNames />
    <Recipe />
        <OriginalRecipeCode />
        <RecipeReference />
        <RecipeProcedure />
        <Ingredients />
            <Ingredient />
                <IngredientName />
                <Remarks />
    <Remarks />
<Components />
```

Restrictions:

Optional.
Type: n/a.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

IngredientName

Description:

Name of the contributing food or ingredient, e.g. on product package. Ingredient Name is mandatory if Food ID is not given.

Element Position:

```
<FoodDescription />
    <FoodIdentifiers />
    <FoodClasses />
    <FoodNames />
    <Recipe />
        <OriginalRecipeCode />
        <RecipeReference />
        <RecipeProcedure />
        <Ingredients />
            <Ingredient />
                <IngredientName />
                <Remarks />
    <Remarks />
```

Restrictions:

Optional.

Eurofoods data type: STR; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
foodid	FoodIdentifiers for food record corresponding to the ingredient. Eurofoods Data Type: STR.	string		No	The food must be in the same EuroFIR Food Data Transport Package.
amount	The amount of an ingredient (contributing food) given in weight, or as a fraction or percentage of total recipe weight. Eurofoods Data Type: NUM.	decimal		No	
unit	Unit amount is given in. Eurofoods Data Type: THS.	string		No	Mandatory, if amount is given.
rank	The rank in which the ingredient appears in the food, when ingredients are listed in descending order according to their amounts in the food. Eurofoods Data Type: INT.	integer		No	Often, the amount of ingredients is not known, only their order (e.g. ingredient lists on packaged foods). In this case, the rank of each ingredient could be given according to the order in the label information (i.e. 1,2,3,...).

Further specifications:

Remarks

Description:

Any further remarks concerning the single ingredient in the recipe element, if applicable.

Element Position:

```
<FoodDescription />
    <FoodIdentifiers />
    <FoodClasses />
    <FoodNames />
    <Recipe />
        <OriginalRecipeCode />
        <RecipeReference />
        <RecipeProcedure />
        <Ingredients />
            <Ingredient />
                <IngredientName />
                <Remarks />
    <Remarks />
```

Restrictions:

Optional.
Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

Remarks element

Description:

The Remarks element subsidiary to <FoodDescription> element contains any further remarks to the description of the food not included in the other subsidiary FoodDescription elements, if applicable.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
                <FoodIdentifiers />
                <FoodClasses />
                <FoodNames />
                <Recipe />
                <Remarks />
            <Components />
```

Restrictions:

Optional.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Remarks element corresponds to the Eurofoods REMARKS field (Food table).

Components element

Description:

The Components element encapsulates all the component and value elements.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
            <Components />
```

Restrictions:

Mandatory.

Type: n/a.

Only one Components element is allowed in each Food element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Components element corresponds to the Eurofoods Component table.

Component element

Description:

The Component element is subsidiary to the Components element and encapsulates all the component identification and value elements.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Mandatory.

Type: n/a.

At least one Component element must appear in the Components element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Component element corresponds to a record in the Eurofoods Component table.

ComponentIdentifiers element

Description:

The ComponentIdentifiers element is subsidiary to the Component element and encapsulates the ComponentIderfier elements.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Mandatory.

Type: n/a.

Only one ComponentIdentifiers element subsidiary to the Component element is allowed.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

ComponentIdentifier element

Description:

The ComponentIdentifier element contains the information that identifies the component according to the settings given by the system attribute.

Element Position:

```
<EuroFIRFoodDataTransportPackage />
    <StandardVocabularies />
    <SenderInformation />
    <Content />
    <Foods />
        <Food />
            <FoodDescription />
            <Components />
                <Component />
                    <ComponentIdentifiers />
                        <ComponentIdentifier />
                    <Values />
```

Restrictions:

Mandatory.

Eurofoods data type: STR; XML Data Type: string.

The ComponentIdentifiers element must contain at least one ComponentIdentifier element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
system	The system attribute contains information about the system with which the component is described. Eurofoods Data Type: THS, unless specific system attributes then STR, see Remarks.	string	255	Yes	In most cases, the system attribute refers to a thesaurus (EuroFIR, INFOODS, CAS, etc.), which must be declared in a StandardVocabulary element in the StandardVocabularies element. Only two values of the system attributes, “origcpcd” and “origcpnm”, are allowed without declaring a corresponding thesaurus in the StandardVocabularies element, see Further specifications below. Attribute value “ecompid” indicates the use of the EuroFIR component identifier thesaurus, which is mandatory.

Further specifications:
The ComponentIdentifier element corresponds to the INFOODS food component identifiers or tagged elements.
The ComponentIdentifier element corresponds to several of the component identification fields (Eurofoods Component table). The system attributes, “origcpcd” and “origcpnm”, correspond to the Eurofoods ORIGCPCD and ORIGCPNM fields (Component table).

Values element

Description:

The Values element encapsulates the subsidiary value information for the component in question.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Mandatory.

Type: n/a.

Only one Values element is allowed for a specific component.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Values element corresponds to the Eurofoods Value table.

Value element

Description:

The Value element contains the component value and associated information in subsidiary elements.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Mandatory.
Type: n/a.
The Values element must contain at least one Value element.

Recommendations:

Value element, continued

Attributes:					
Name	Description	Type	Max length	Mandatory	Remarks
unit	The unit attribute contains information about the unit for the value information in subsidiary elements. Eurofoods Data Type: THS.	THS		Yes	The unit attribute modalities are defined in the unit thesaurus defined as StandardVocabulary.
matrixunit	The matrixunit attribute contains information about the mode of expression the value is given with. Eurofoods Data Type: THS.	THS		Yes	The matrixunit attribute modalities are defined in the matrixunit thesaurus defined as StandardVocabulary.
dategenerated	The date when this particular value was generated, e.g. date of analysis or compilation Eurofoods Data Type: DAT.	string		No	The date format must follow the ISO 8601 format: extended format: CCYY-MM-DD, CCYY-MM or CCYY. The term “Before “ is allowed before the date, e.g. “Before 1992”.
dataevaluated	The most recent date the value in question was evaluated or validated. Eurofoods Data Type: DAT.	string		No	See attribute datagenerated above.
methodtype	The kind of method used to derive the value. Eurofoods Data Type: THS.	string		Yes	The methodtype attribute modalities are defined in the methodtype thesaurus defined as StandardVocabulary.
methodindicator	The method with which the value is derived. Eurofoods Data Type: THS.	string		Yes	The methodidentifier attribute modalities are defined in the methodidentifier thesaurus defined as StandardVocabulary.
methodparameter	Further method information for calculation methods, e.g. NCF and FACF. Eurofoods Data Type: NUM.	decimal		Yes/No	Mandatory only for calculated protein and fatty acid values.

Further specifications:
The Value element corresponds to a record in the Eurofoods Value table. The attributes unit and matrixunit correspond to Eurofoods field names, UNIT and MOEX (Component table), dateanalysed and methodindicator correspond to fields DATEANAL and METHID (Value table), and methodtype corresponds to field METHTYPE (Method table).

SelectedValue element

Description:

The value that is considered the best representative according to the decision of the data compiler.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                ...
```

Restrictions:

Generally mandatory.

Type: NUM.

Recommendations:

In some cases, it might not be possible to assign a SelectedValue (e.g. the distribution shows to cluster of values). In this case SelectedValue may be left empty and the reader is referred to the raw data itself. Another possibility is to separate the two (or more) clusters as separate entries in the value table but with the same food and component reference. A third possibility is to consider extra food definitions of the various clusters.

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
valuetype	The Value Type is designed to further describe the figure in Best Location or to give a qualitative description of the value when no SelectedValue can be given. Eurofoods Data Type: THS.	string		Yes	The valuetype attribute modalities are defined in the EuroFIRvalue type thesaurus defined as StandardVocabulary.
acquisitiontype	Gives categories for the origin of a value, e.g. an evaluated food composition database or table, a scientific publication, analytical results commissioned by the compiler or results calculated by the compiler. Eurofoods Data Type: THS.	string		Yes	Some Acquisition Types usually relate to the Reference associated with the value. From the list given in EuroFIR Acquisition Type thesaurus.

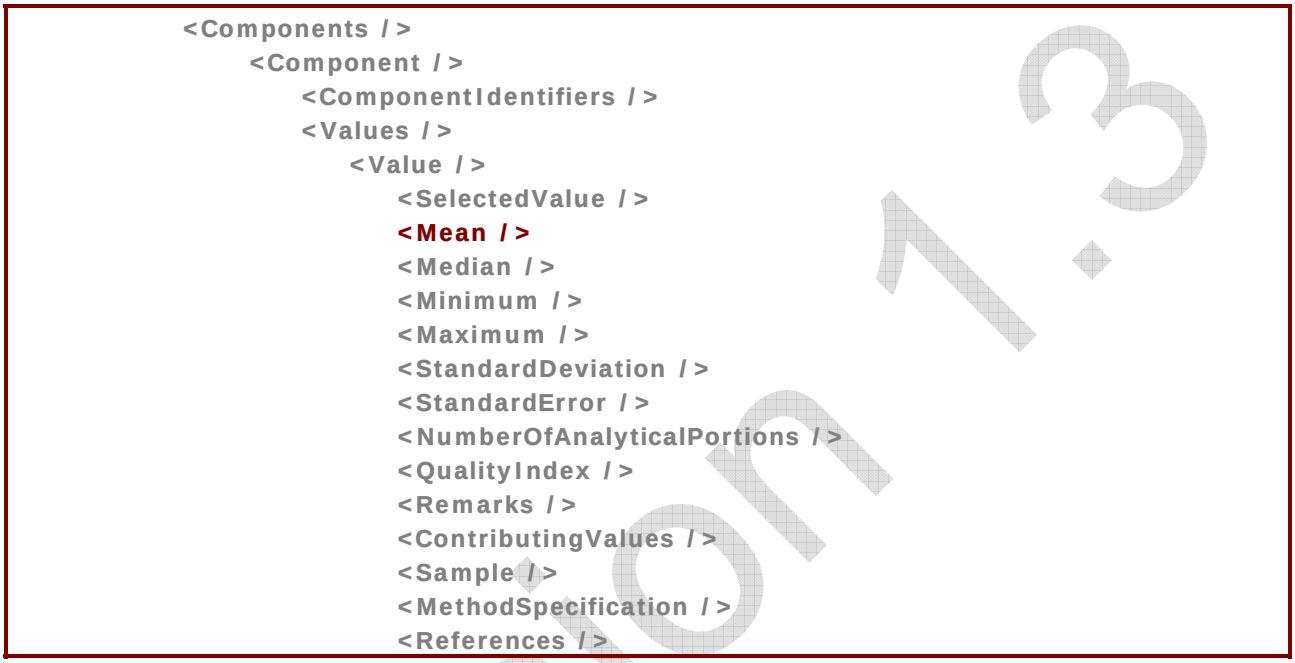
Further specifications:

Mean element

Description:

The mean value of the statistic.

Element Position:



Restrictions:

Recommended.

Eurofoods Data Type: NUM; XML Data Type: decimal.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Mean element corresponds to the Eurofoods MEAN field (Value table)

Median element

Description:

The median value of the statistic.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Recommended.
Eurofoods Data Type: NUM; XML Data Type: decimal.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Median element corresponds to the Eurofoods MEDIAN field (Value table).

Minimum element

Description:

The minimum value within the statistic.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Recommended.

Eurofoods Data Type: NUM; XML Data Type: decimal.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Minimum element corresponds to the Eurofoods MIN field (Value table)

Maximum element

Description:

The maximum value within the statistic.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Recommended.

T Eurofoods Data Type: NUM; XML Data Type: decimal.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

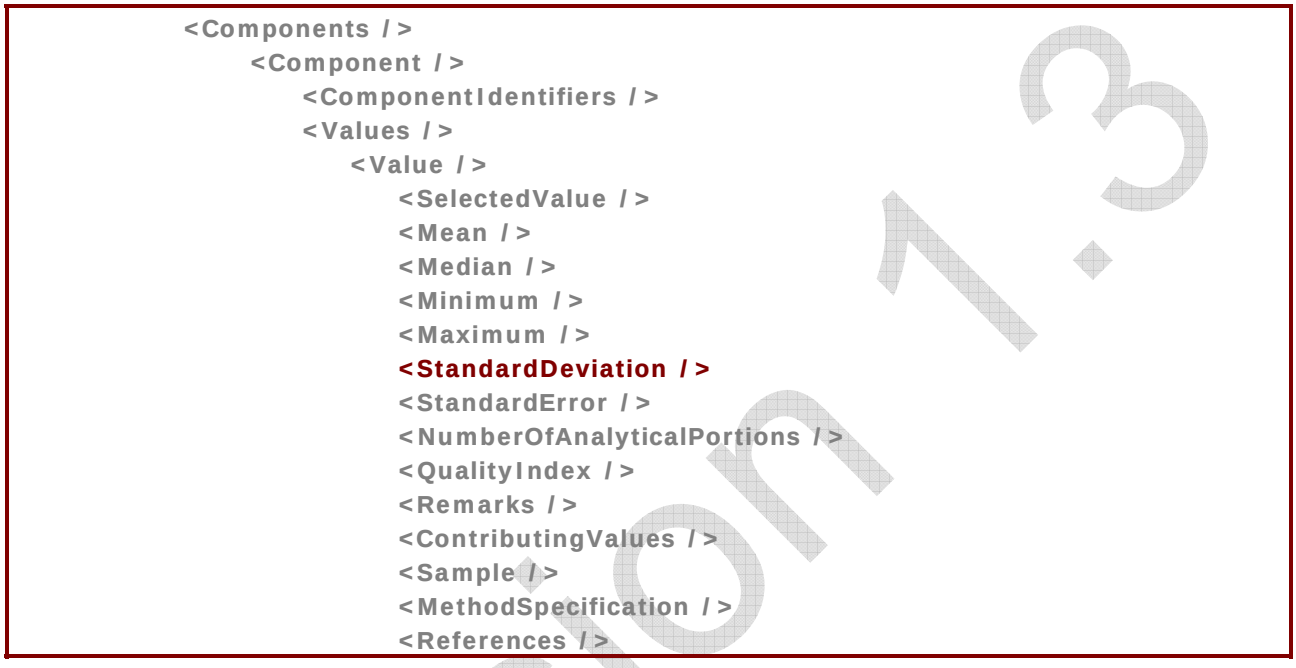
Further specifications:

Standardeviation element

Description:

The standard deviation of the statistic.

Element Position:



Restrictions:

Recommended.

Eurofoods Data Type: NUM; XML Data Type: decimal.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Maximum element corresponds to the Eurofoods STDV field (Value table).

StandardError element

Description:

The standard error of the statistic.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Recommended.
Eurofoods Data Type: NUM; XML Data Type: decimal.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Maximum element corresponds to the Eurofoods STERR field (Value table).

NoOfAnalyticalPortions element

Description:

The NoOfAnalyticalPortions element contains the number of values contributing to the value given as Selected Value. Defined as the number of analytical portions of the food or the number of contributing values (e.g. values taken from food composition tables).

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Recommended.

Eurofoods Data Type: NUM; XML Data Type: decimal.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
portionsize	The size of the sample, prepared from the laboratory sample, from which test portions are removed for testing or for analysis.	STR		No	
replicates	The number of times (sub-) samples of a specific analytical sample is being analysed.	NUM		No	

Further specifications:

QualityIndex element

Description:

Result of any systematic quality assessment applied by the data provider. A description of the quality assessment procedure should be given under primary source description.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Recommended.

Eurofoods Data Type: STR; XML Data Type: string.

Recommendations:

The EuroFIR project has an ongoing development of quality indices, and the approval of a common system for quality assessment of food composition data awaits the conclusion from this work.

Attributes:					
Name	Description	Type	Max length	Mandatory	Remarks
foodidentification	Quality score for food description Eurofoods Data Type: NUM.	string		No	
componentidentification	Quality score for component identification. Eurofoods Data Type: NUM.	string		No	
samplingplan	Quality score for food sampling. Eurofoods Data Type: NUM.	string		No	
samplenumber	Quality score for number of analytical samples. Eurofoods Data Type: NUM.	string		No	
samplehandling	Quality score for sample handling. Eurofoods Data Type: NUM.	string		No	
method	Quality score for method (analytical or calculation). Eurofoods Data Type: NUM.	string		No	
performance	Quality score for Analytical performance/Quality control. Eurofoods Data Type: NUM.	string		No	

Further specifications:

Remarks element

Description:

The Remarks element contains any further remarks concerning the value information.

Element Position:

```
<Components />
    <Component />
        <ComponentIdentifiers />
        <Values />
            <Value />
                <SelectedValue />
                <Mean />
                <Median />
                <Minimum />
                <Maximum />
                <StandardDeviation />
                <StandardError />
                <NumberOfAnalyticalPortions />
                <QualityIndex />
                <Remarks />
                <ContributingValues />
                <Sample />
                <MethodSpecification />
                <References />
```

Restrictions:

Optional.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:
The Remarks element corresponds to the Eurofoods field REMARKS (Value table).

ContributingValues/ContributingValue elements

Description:

The ContributingValues/ContributingValue elements contains informations of the values that the SelectedValue is constructed from.

The layout of ContributingValues/ContributingValue elements is similr to the structure of the Values element, except for the embedded elements ContributingValues/ContributingValue.

Element Position:

```
<ContributingValues />
    <ContributingValue />
        <SelectedValue />
        <Mean />
        <Median />
        <Minimum />
        <Maximum />
        <StandardDeviation />
        <StandardError />
        <NumberOfAnalyticalPortions />
        <QualityIndex />
        <Sample />
        <MethodSpecification />
        <Remarks />
        <References />
            <ValueReference />
            <MethodReference />
```

Restrictions:

Optional.

Type: n/a.

If ContributingValues is used, it must contain at least one ContributingValue element.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

References element

Description:

The References element encapsulates the subsidiary bibliographic information on the original data source and/or analytical method.

Element Position:

<Values />
<Value />
<SelectedValue />
<Mean />
<Median />
<Minimum />
<Maximum />
<StandardDeviation />
<StandardError />
<NumberOfAnalyticalPortions />
<QualityIndex />
<Remarks />
<ContributingValues />
<Sample />
<MethodSpecification />
<References />
<ValueReference />
<MethodReference />

Restrictions:

Recommended.
Type: n/a.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

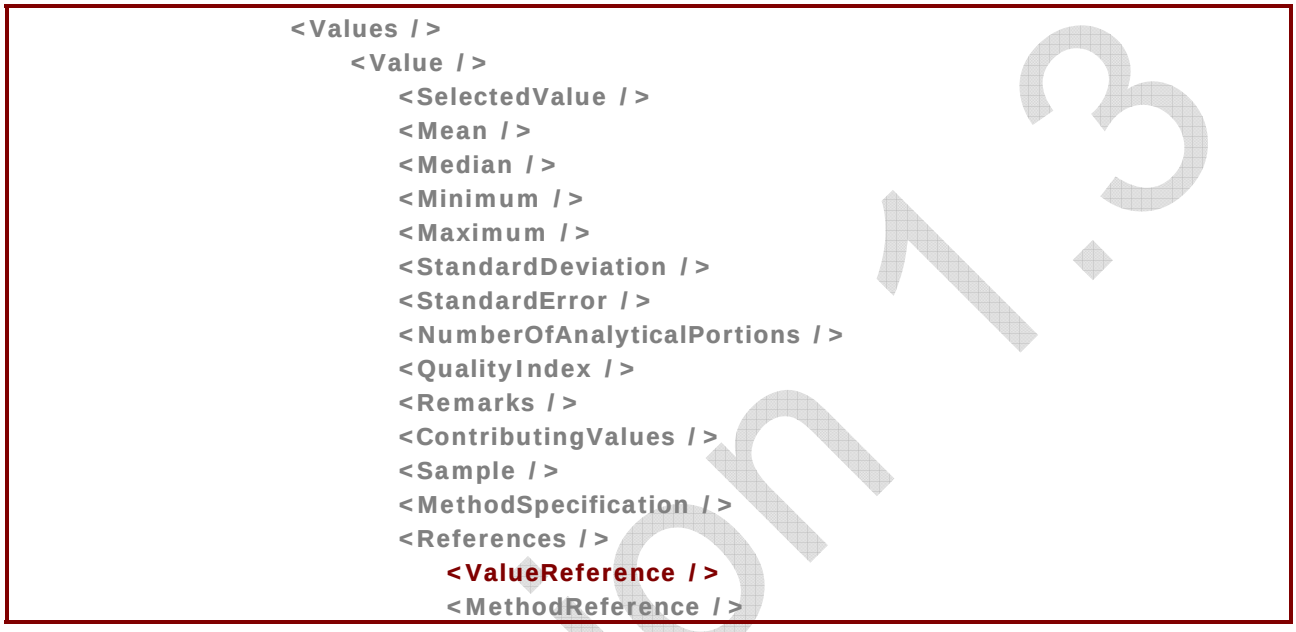
Further specifications:
The References element corresponds partly to the Eurofoods SOURCEID field (Value table).

ValueReference element

Description:

The ValueReference element contains bibliographic reference to the original source of a value.

Element Position:



Restrictions:

Recommended.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
link	URI of bibliographic reference for data. Eurofoods Data Type: STR.	anyURI		No	

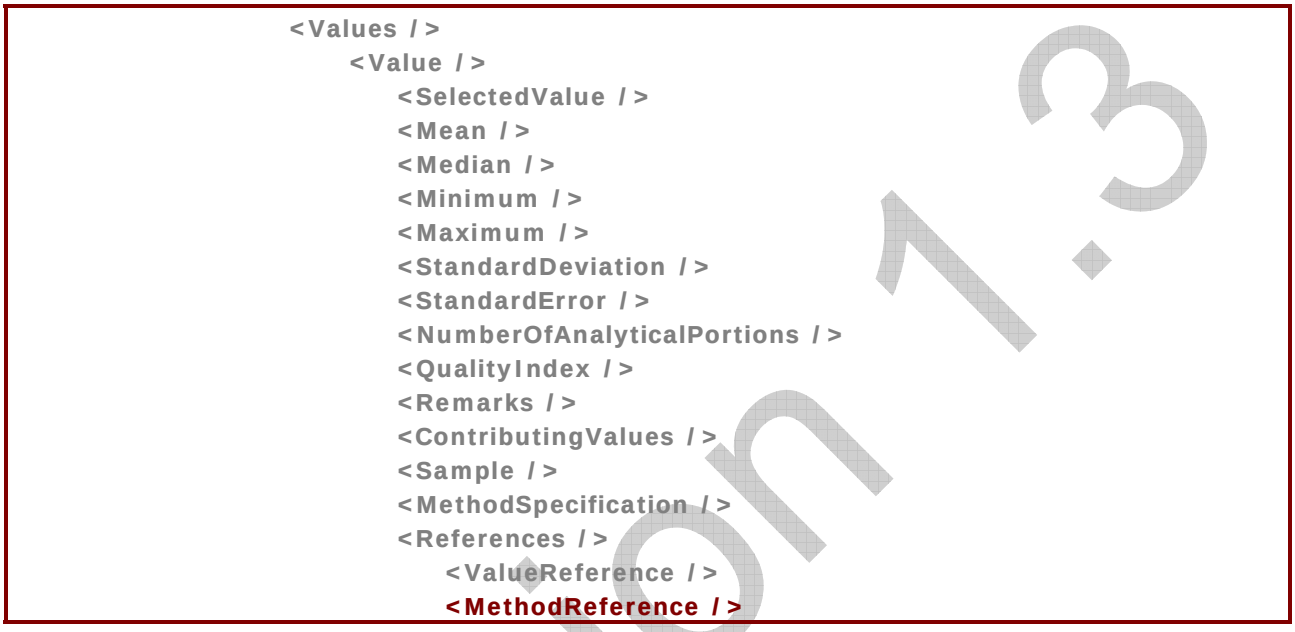
Further specifications:
The ValueReference element corresponds partly to the Eurofoods SOURCEID (Value table).

MethodReference element

Description:

The MethodReference element contains the bibliographic reference to the method of analysis used to produce the value.

Element Position:



Restrictions:

Recommended.

Eurofoods data type: MEM; XML Data Type: string.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks
link	URI of bibliographic reference for analytical method for data. Eurofoods Data Type: STR.	anyURI		No	

Further specifications:
The MethodReference element should not be confused with the method reference indicated in the method specification.

Sample element

Description:

The Sample element is optional and can be used to record information about primary samples, sampling plan and sample handling.
Each element in the Sample substructure will be futher described in the next version of these specifications.

Element Position:

<ContributingValues />
<Sample />
<SamplingReference />
<ReasonForSampling />
<SamplingStrategy />
<PlaceOfSampling />
<DateOfSampling />
<PrimarySampleUnitSize />
<NoOfPrimarySampleUnits />
<CompositeSample />
<PrimarySampleHandling />
<DateOfArrivalAtLaboratory />
<LaboratoryStorage />
<MethodSpecification />

Restrictions:

Optional.
Type: n/a.
All subsidiary elements in the Sample element are optional.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

MethodSpecification element

Description:

The MethodSpecification entity represents an optional, but preferred, approach to the handling of detailed method description and assessment.

Each element in the MethodSepcification substructure will be futher described in the next version of these specifications.

Element Position:

<MethodSpecification />
<MethodId />
<OfficialMethod />
<GeneralDescription />
<MethodReference />
<AnalyticalKeySteps />
<Extraction />
<Separation />
<Identification />
<Detection />
<Quantification />
<OtherMethodKeySteps />
<AdditionalDescriptors />
<LaboratoryPerformance />
<AnalyticalPerformanceDetails />
<Accuracy />
<Applicability />
<Precision />
<Repeatability />
<Reproducibility />
<Selectivity />
<Sensivity />
<Specificity />
<Remarks />
<References />

Restrictions:

Optional.

Type: n/a.

All subsidiary elements in the MethodSpecification element are optional.

Recommendations:

Attributes:

Name	Description	Type	Max length	Mandatory	Remarks

Further specifications:

Annex II

Numerical Display of Elements

The EuroFIR Food Data Transport Package is described as numerical display on the following pages. The element list is given with element status and XML Schema data types. The data type, n/a, signifies that no data type is applicable (n/a: not applicable).

ElementId	ElementName	Status	XML Data Type
0001	<EuroFIRFoodDataTransportPackage />	Mandatory	n/a
0002	<StandardVocabularies />	Mandatory	n/a
0003	<StandardVocabulary />	Mandatory	n/a
0004	<SenderInformation />	Mandatory	n/a
0005	<Sender />	Mandatory	string
0006	<OrganisationName />	Mandatory	string
0007	<SuperOrganisationName />	Optional	string
0008	<PostalAddress />	Optional	string
0009	<Country />	Optional	string
0010	<Telephone />	Optional	string
0011	<Fax />	Optional	string
0012	<Email />	Optional	string
0013	<WWWs />	Optional	n/a
0014	<WWW />	Optional	anyURI
0015	<Remarks />	Optional	string
0016	<Content />	Mandatory	n/a
0017	<ContentName />	Mandatory	string
0018	<ShortContentName />	Mandatory	string
0019	<ResponsibleBody />	Mandatory	string
0020	<LegalRestrictions />	Optional	string
0021	<SummaryOfContent />	Optional	string
0022	<OriginalFoodClassification />	Optional	string
0023	<QualityAssessmentScheme />	Optional	string
0024	<BibliographicReference />	Mandatory	string
0025	<Remarks />	Optional	string
0026	<ReasonForCreation />	Optional	string
0027	<Foods />	Mandatory	n/a
0028	<Food />	Mandatory	n/a
0029	<FoodDescription />	Mandatory	n/a
0030	<FoodIdentifiers />	Mandatory	n/a
0031	<FoodIdentifier />	Mandatory	string
0150	<Identifier />	Mandatory	string
0032	<FoodClasses />	Optional	n/a
0033	<FoodClass />	Optional	string
0034	<FoodNames />	Mandatory	n/a
0035	<FoodName />	Mandatory	string
0036	<Recipe />	Optional	n/a
0037	<OriginalRecipeCode />	Optional	string
0038	<RecipeReference />	Optional	string
0039	<RecipeProcedure />	Optional	string
0040	<Ingredients />	Optional	n/a
0041	<Ingredient />	Optional	string
0042	<IngredientName />	Optional	string
0043	<Remarks />	Optional	string
0044	<Remarks />	Optional	string
0045	<Components />	Mandatory	n/a
0046	<Component />	Mandatory	n/a
0047	<ComponentIdentifiers />	Mandatory	n/a
0048	<ComponentIdentifier />	Mandatory	string
0049	<Values />	Mandatory	n/a

ElementId	ElementName	Status	XML Data Type
0050	<Value />	Mandatory	n/a
0051	<SelectedValue />	Mandatory	decimal
0052	<Mean />	Optional	decimal
0053	<Median />	Optional	decimal
0054	<Minimum />	Optional	decimal
0055	<Maximum />	Optional	decimal
0056	<StandardDeviation />	Optional	decimal
0057	<StandardError />	Optional	decimal
0058	<NumberOfAnalyticalPortions />	Optional	integer
0059	<QualityIndex />	Optional	string
0060	<Remarks />	Optional	string
0061	<ContributingValues />	Optional	n/a
0062	<ContributingValue />	Optional	n/a
0063	<SelectedValue />	Optional	decimal
0064	<Mean />	Optional	decimal
0065	<Median />	Optional	decimal
0066	<Minimum />	Optional	decimal
0067	<Maximum />	Optional	decimal
0068	<StandardDeviation />	Optional	decimal
0069	<StandardError />	Optional	decimal
0070	<NumberOfAnalyticalPortions />	Optional	integer
0071	<QualityIndex />	Optional	string
0072	<Sample />	Optional	n/a
0073	<SamplingReference />	Optional	string
0074	<ReasonForSampling />	Optional	string
0075	<SamplingStrategy />	Optional	string
0076	<PlaceOfSampling />	Optional	string
0077	<DateOfSampling />	Optional	date[6]
0078	<PrimarySampleUnitSize />	Optional	string
0079	<NoOfPrimarySampleUnits />	Optional	integer
0080	<CompositeSample />	Optional	boolean
0081	<PrimarySampleHandling />	Optional	string
0082	<DateOfArrivalAtLaboratory />	Optional	date[6]
0083	<LaboratoryStorage />	Optional	string
0084	<MethodSpecification />	Optional	n/a
0085	<MethodId />	Optional	string
0086	<OfficialMethod />	Optional	string
0087	<GeneralDescription />	Optional	string
0088	<MethodReference />	Optional	string
0089	<AnalyticalKeySteps />	Optional	n/a
0090	<Extraction />	Optional	string
0091	<Separation />	Optional	string
0092	<Identification />	Optional	string
0093	<Detection />	Optional	string
0094	<Quantification />	Optional	string
0095	<OtherMethodKeySteps />	Optional	string
0096	<AdditionalDescriptors />	Optional	string

[6] The basic XML data type is *date*; however, the Eurofoods definition of this element is broader: “The date format must follow the ISO 8601 format: extended format: CCYY-MM-DD, CCYY-MM or CCYY. The term “Before“ is allowed before the date, e.g. “Before 1992””. This means that in many cases the XML data type is *string*.

ElementId	ElementName	Status	XML Data Type
0097	<LaboratoryPerformance />	Optional	string
0098	<AnalyticalPerformanceDetails />	Optional	string
0099	<Accuracy />	Optional	string
0100	<Applicability />	Optional	string
0101	<Precision />	Optional	string
0102	<Repeatability />	Optional	string
0103	<Reproducibility />	Optional	string
0104	<Selectivity />	Optional	string
0105	<Sensivity />	Optional	string
0106	<Specificity />	Optional	string
0107	<Remarks />	Optional	string
0108	<Remarks />	Optional	string
0109	<References />	Optional	n/a
0110	<ValueReference />	Optional	string
0111	<MethodReference />	Optional	string
0112	<Sample />	Optional	n/a
0113	<SamplingReference />	Optional	string
0114	<ReasonForSampling />	Optional	string
0115	<SamplingStrategy />	Optional	string
0116	<PlaceOfSampling />	Optional	string
0117	<DateOfSampling />	Optional	date
0118	<PrimarySampleUnitSize />	Optional	string
0119	<NoOfPrimarySampleUnits />	Optional	integer
0120	<CompositeSample />	Optional	boolean
0121	<PrimarySampleHandling />	Optional	string
0122	<DateOfArrivalAtLaboratory />	Optional	date[6]
0123	<LaboratoryStorage />	Optional	string
0124	<MethodSpecification />	Optional	n/a
0125	<MethodId />	Optional	string
0126	<OfficialMethod />	Optional	string
0127	<GeneralDescription />	Optional	string
0128	<MethodReference />	Optional	string
0129	<AnalyticalKeySteps />	Optional	n/a
0130	<Extraction />	Optional	string
0131	<Separation />	Optional	string
0132	<Identification />	Optional	string
0133	<Detection />	Optional	string
0134	<Quantification />	Optional	string
0135	<OtherMethodKeySteps />	Optional	string
0136	<AdditionalDescriptors />	Optional	string
0137	<LaboratoryPerformance />	Optional	n/a
0138	<AnalyticalPerformanceDetails />	Optional	string
0139	<Accuracy />	Optional	string
0140	<Applicability />	Optional	string
0141	<Precision />	Optional	string
0142	<Repeatability />	Optional	string
0143	<Reproducibility />	Optional	string
0144	<Selectivity />	Optional	string
0145	<Sensivity />	Optional	string
0146	<Specificity />	Optional	string
0147	<Remarks />	Optional	string

ElementId	ElementName	Status	XML Data Type
0148	<References />	Mandatory	string
0149	<ValueReference />	Mandatory	string
0150	<MethodReference />	Optional	string

The EuroFIR Web Services are created to facilitate food data interchange between food composition data compilers in the EuroFIR network.

The objective of the EuroFIR Food Data Transport Package for food data interchange is to ensure the receiver, e.g. the food data compilers, a simple and comprehensive access to relevant and up-to-date food (product) information in national food composition databases.
The EuroFIR Food Data Transport Package's intended use is data transport between the food data compilers in EuroFIR and transport of food data from compilers to the EuroFIR eSeach facility. It is the first XML transport package to be defined for information interchange via Web Services in EuroFIR.

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