

Documentation openLCA format converter V2

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ILCD to EcoSpold02

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1 Introduction

This documentation describes the conversion from the ILCD format to the EcoSpold02 format, as implemented in the openLCA format converter V2 [1-2], by “mapping” (i.e. assigning) fields from one format to the other.

The following versions of the formats are considered:

ILCD 1.1

EcoSpold V2, beta 4

The mapping is facing several challenges, which cannot always be overcome. Both formats use different approaches, for example regarding process / activity scale, linking between different data sets, uncertainty, etc.

However, the practical consequences will keep within limits, because many fields are not in use and many problems can be got around.

The converter uses the following main approaches, also in combination:

- **field transformation:** Entering content into the target format based on content of one or several corresponding fields in the source format, modifying the original content.
- **master data creation:** Sometimes entering a content into a field of the target format is not possible without creation of one or several master data fields that the to-be-filled field refers to.

For example, “@location” in ILCD fits well to “activityDescription/geography/locationShortname” in EcoSpold; however, if the location in EcoSpold does not exist in validLocations, a new location has to be listed.

- **n:1 mapping/field concatenation:** different occurrence of elements, only one can be transferred or the fields are lumped together into the target field
- **reasonable default entries:** mandatory fields that cannot be mapped are filled with reasonable default entries where possible.

All the assignments / mappings, and the implemented workarounds, are described in the following. This text focuses on converting ILCD 1.1 to EcoSpold02. Other documents [##] deal with further conversion “directions” and formats.

Starting from the fields in ILCD 1.1, suitable EcoSpold02 fields are listed, and the mapping is commented and motivated. However, not every ILCD dataset is considered. The flow property dataset and the unit group dataset are not cited, because the majority of the fields cannot be mapped. For that reason the conversion is considered from the EcoSpold perspective for these two datasets to reduce complexity.

Note that in order to generate a valid EcoSpold data set, several fields with specific contents are mandatory in EcoSpold. To not overlook these requirements when dealing with the direction “from ILCD to EcoSpold02”, as this text does primarily, a special section for each element in EcoSpold considers the mandatory other fields, including where and if these are available.

The explanations will be given in tables. In the first column of the “explanation tables”, the ILCD fields are listed, in the second column the corresponding fields in EcoSpold02. The comment field

explains any conversion challenges and illustrates them based on a colour system (red means = no mapping possible, yellow = mapping is problematic, green = mapping works without problems).

The structure of the data format will be illustrated by help of images created from the ILCD schema. The images show the definition of the respective data types in the XML schema with existing elements and attributes. Figure 1 gives an example, together with an explanation of the elements shown in any of these figures.

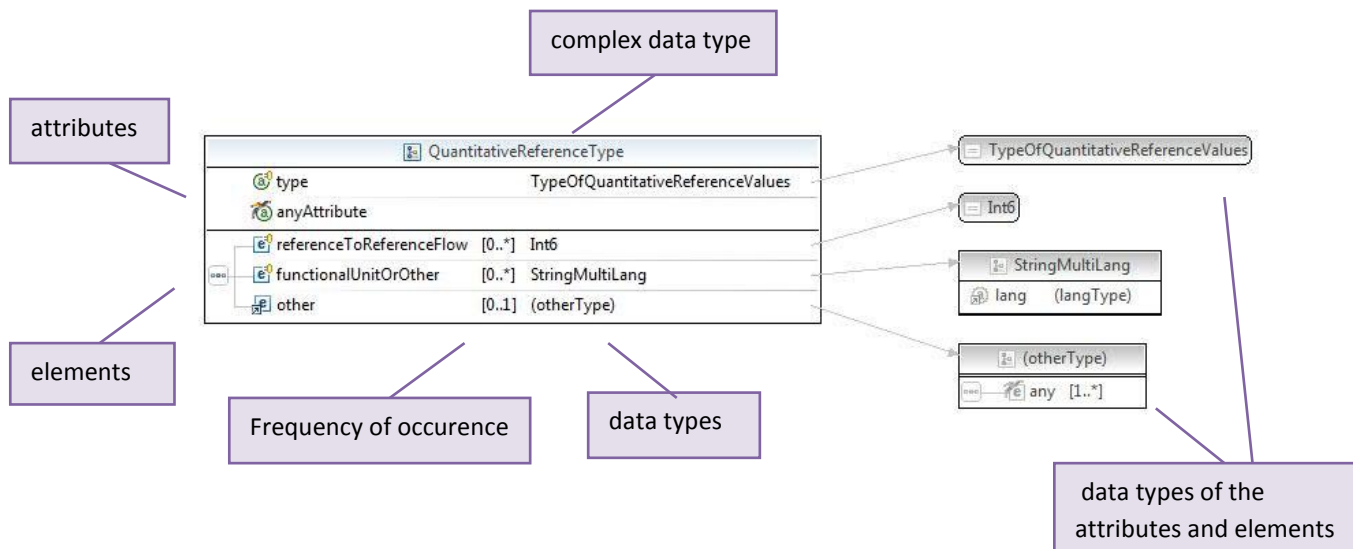


Figure 1: definition of the DataSetInformation type in ILCD, example of an image of an XML schema type with explanations

2 Mapping description

2.1 Process dataset

The XML schema type of the process dataset contains three attributes and five complex elements, which are defined by the following schema types (see also figure 2):

- **ProcessInformationType:** describes the process
- **ModellingAndValidationType:** covers information about the LCI modeling and data treatment aspects etc.
- **AdministrativeInformationType:** contains information about the dataset management and administration
- **ExchangesType:** contains the Input/Output list of exchanges with the quantitative inventory data
- **LCIAResultsType:** comprises list with pre-calculated LCIA results of the Input/Output list of the dataset

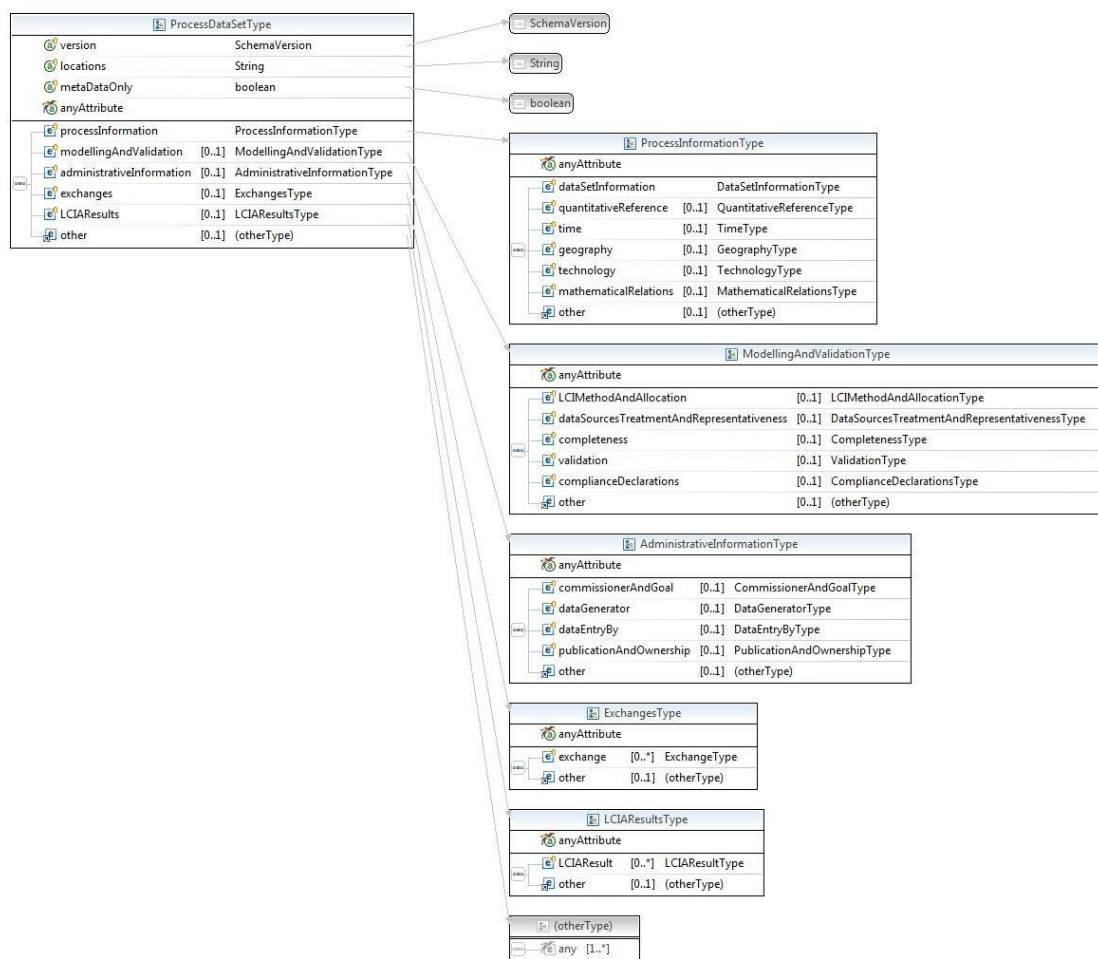


Figure 2: definition of the ILCD ProcessDataSet type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
@version		no corresponding field ILCD schema version; no relevance for conversion semantic	no	
@locations	MetaInformation/fileAttributes /validLocations	field transformation: transform as link to a list of valid locations (see location mapping)	no	
@metaDataOnly		no corresponding field	no	

No mandatory fields in EcoSpold.

2.1.1 Type: processInformation

The XML schema definition of the process information type comprises also several complex elements. The elements are defined by the following schema types (see also figure 3):

- **DataSetInformationType**: contains general data set information
- **QuantitativeReferenceType**: comprises the quantitative reference used for the dataset
- **TimeType**: provides information about the time representativeness of the dataset
- **GeographyType**: provides information about the geographical representativeness of the dataset
- **TechnologyType**: provides information about the technological representativeness of the dataset
- **MathematicalRelationType**: contains information about used parameters



Figure 3: definition of the ILCD ProcessInformation type

2.1.1.1 Type: processInformation/dataSetInformation

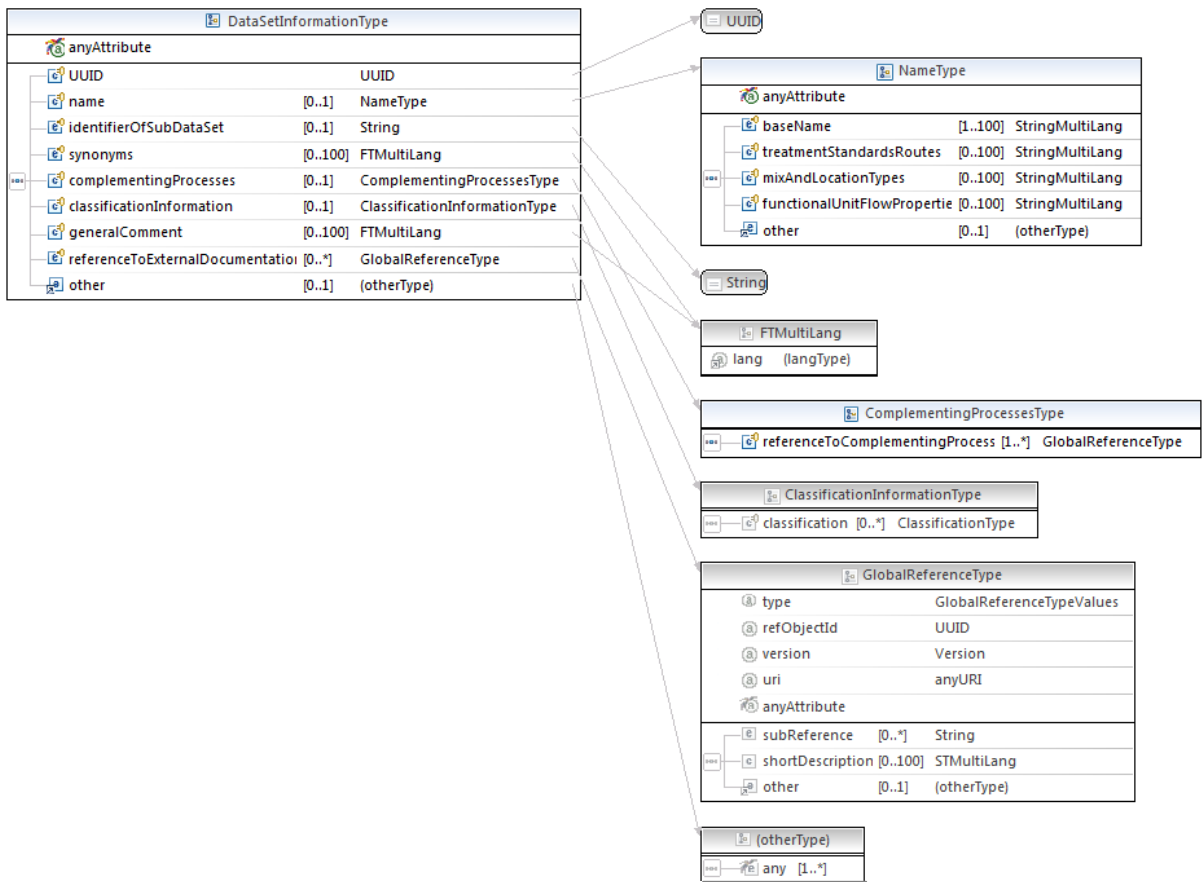


Figure 4: definition of the ILCD DataSetInformation type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
UUID	activityDescription/activity/@activityNameId	o.k. The UUID from ILCD is mapped to the list of valid activities in ES2	no	
name				
baseName	activityDescription/activity/activityName	field concatenation The EcoSpold name is the concatenation of four ILCD name fields: <baseName>, <treatmentStandardsRoutes>, <mixAndLocationTypes>, <functionalUnitFlowProperties>	no	
treatmentStandardsRoutes	activityDescription/activity/activityName	field concatenation The EcoSpold name is the concatenation of four ILCD name fields: <baseName>, <treatmentStandardsRoutes>, <mixAndLocationTypes>, <functionalUnitFlowProperties>	no	
mixAndLocationTypes	activityDescription/activity/activityName	field concatenation The EcoSpold name is the concatenation of four ILCD name	no	

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
UUID	activityDescription/activity/@activityNameId	o.k. The UUID from ILCD is mapped to the list of valid activities in ES2	no	
		fields: <baseName>, <treatmentStandardsRoutes>, <mixAndLocationTypes>, <functionalUnitFlowProperties>		
functionalUnitFlowProperties	activityDescription/activity/activityName	field concatenation The EcoSpold name is the concatenation of four ILCD name fields: <baseName>, <treatmentStandardsRoutes>, <mixAndLocationTypes>, <functionalUnitFlowProperties>	no	
identifierOfSubDataSet		no corresponding field		
synonyms	activityDescription/activity/synonym	field transformation ILCD: <i>Synonyms / alternative names / brands of the good, service, or process. Separated by semicolon.</i> ES2: List of synonyms for the name. <i>Contrary to normal multi language strings, synonyms may contain more than one element with the same xml:lang attribute value.</i> ⇒ Splitted synonym list		
ReferenceToComplementingProcess		no corresponding field		
classificationInformation/classification				
@name	activityDescription/classification/classificationSystem	field transformation The classification system name is mapped to a multiple language field. If no name is given the default value is "ILCD" (see definition of the classification type in ILCD_Common_Groups.xsd)		
@classes	fileAttributes/validClassifications	master data look up If the classes in ILCD do not exist in the master data of ES2, new classes have to be generated.		
classificationInformation/class				
@level	activityDescription/classification/classificationValue	field concatenation Concatenated class names; mapped classification information to multiple language field example: <common:classification> <common:class level="0">Transport services		

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
UUID	activityDescription/activity/@activityNameId	o.k. The UUID from ILCD is mapped to the list of valid activities in ES2	no	
		<pre> </common:class> <common:class level="1">Air</common:class> </common: classification> </pre> is mapped to: Transport services/ Air		
@classId		no corresponding field		
generalComment	activityDescription/activity/generalComment	field concatenation n:1 mapping		
referenceToExternalDocumentation	metaInformation/source/@id	o.k. Sources in ILCD are mapped onto the list of valid sources in ES2.		

Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Activity description	activityName	yes	no (r)	default value default value for required field 'activityName': "no activity name"
	@activityId	no		A new ID is generated.
	@activityNameId	yes	yes	
	@type	partly	no (r)	default value default value for required field '@type': "2" (= System terminated)
	@specialActivityType	no		default value default value for required field '@specialActivityType': "0" (=ordinary activity)

If a new classification is built, following field is also mandatory:

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Activity description/ Classification	@classificationId	no		A new Id has to be generated.

2.1.1.2 Type: processInformation/quantitativeReference

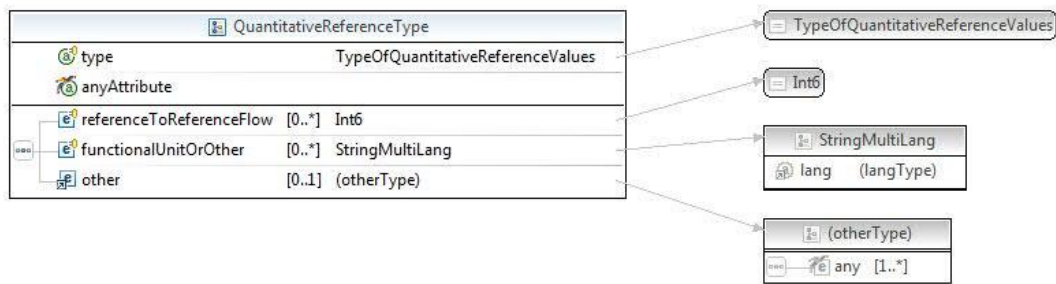


Figure 5: definition of the ILCD QuantitativeReference type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
@type		no corresponding field But, if this field has the entry "Reference flow(s)", an intermediate exchange with the output group 0 (= reference) is generated. Problematic are reference flows as input. In this case no valid ES2 data set can be generated.	no	
referenceToReferenceFlow	flowData/exchanges/intermediateExchanges/@intermediateExchangeId	o.k. The new intermediate exchange, which is the reference flow of the process, is generated with this ID.	no	
FunctionalUnitOrOther		no corresponding field	no	

No mandatory fields in EcoSpold.

2.1.1.3 Type: processInformation/time

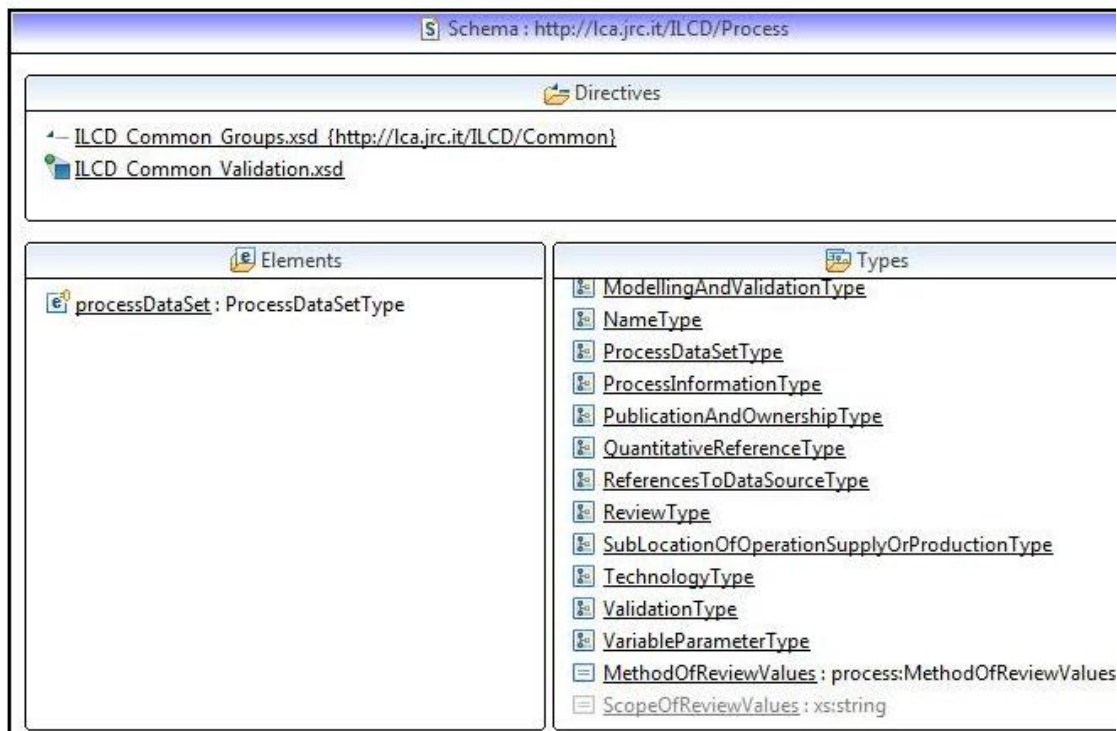


Figure 6: definition of the ILCD Time type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
referenceYear	timePeriod/@startDate	<p>field transformation, different field meaning:</p> <p>the EcoSpold field has the format YYYY-MM-DD, thus this field is converted to <referenceYear>-01-01</p> <p>Note that the ILCD field is optional but in EcoSpold required. So if there is no reference year given, a default value has to be set.</p> <p>The meaning of the field names is different but the documentation is similar:</p> <p>ILCD: Start year of the time period for which the data set is valid (until year of "Data set valid until:"). For data sets that combine data from different years, the most representative year is given regarding the overall environmental impact. In that case, the reference year is derived by expert judgement.</p> <p>EcoSpold: Start date of the time period for which the dataset is valid, presented as a complete date (year-month-day).</p>	no	
dataSetValidUntil	timePeriod/@endDate	field transformation:	no	

		the EcoSpold field has the format YYYY-MM-DD, thus this field is converted to <dataSetValidUntil>-12-31 Note that the ILCD field is optional but in EcoSpold required. So if there is no dataSetValidUntil-field given, a default value has to be set.		
timeRepresentativenessDescription	timePeriod/comment	o.k.	no	

Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Time period	@startDate	yes	no (r)	default value default value for required field '@startDate': "0001-01-01"
	@endDate	yes	no (r)	default value default value for required field '@endDate': "0001-12-31"
	@isDataValidForEntirePeriod	no		default value default value for required field '@isDataValidForEntirePeriod': true

2.1.1.4 Type: processInformation/geography

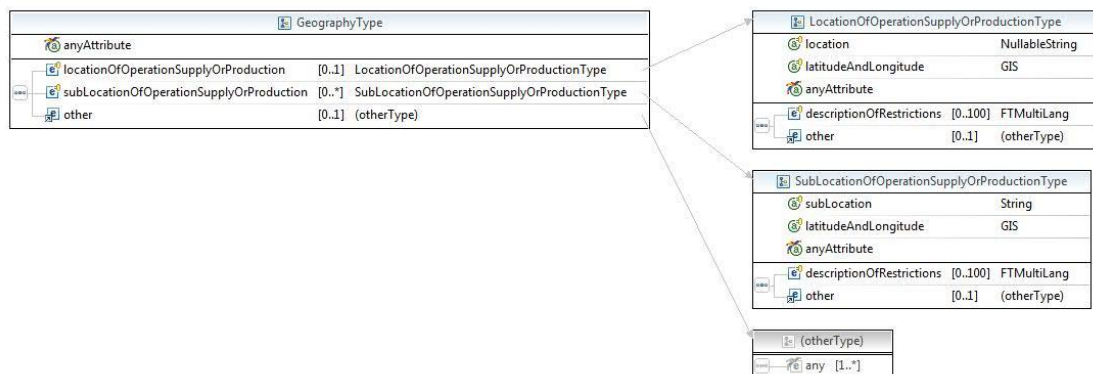


Figure 7: definition of the ILCD Geography type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
location				
@location	geography/locationShort name	field transformation: Location string mapped to multiple language field;	no	

		If the ILCD location exists in the ES2 master data, the location ID of the ES2 master data is taken. If not, a new entry with a new ID etc. in the ES2 master data must be generated.		
@latitudeAndLongitude	validGeographies/geography/@latitude and validGeographies/geography/@longitude	master data lookup: If location names correspond, latitude and longitude can be transferred.	no	
descriptionOfRestrictions	geography/comment	o.k.	no	
sublocation		no corresponding field	no	
@subLocation		no corresponding field	no	
@latitudeAndLongitude		no corresponding field	no	
descriptionOfRestrictions		no corresponding field	no	

Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Geography	@geographyId	no		master data look up: If a location in the ES2 master data with the same name exists, the ID is taken. If not, a new location with a new Id etc. has to be generated.

2.1.1.5 Type: processInformation/technology

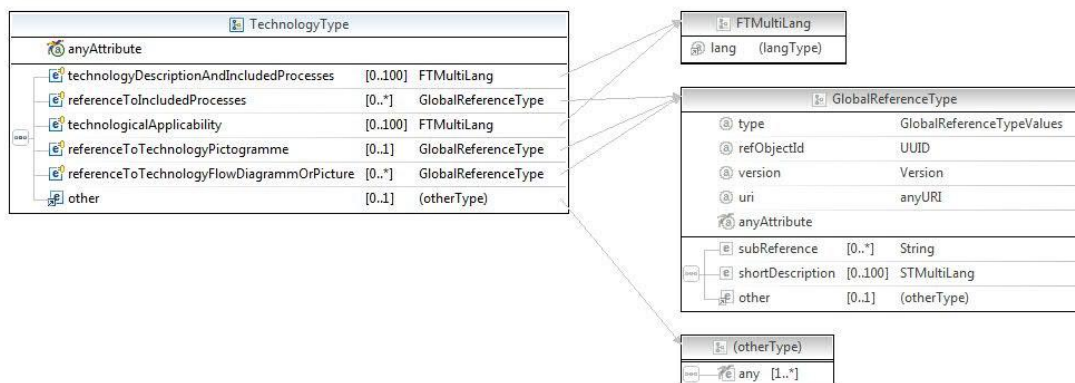


Figure 8: definition of the ILCD Technology type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
technologyDescriptionAndIncludedProcesses	technology/comment	field concatenation different data types; free text is mapped to text and image	no	

		type		
referenceToIncludedProcesses		no corresponding field	no	
technologicalApplicability	activityDescription/activity/generalComment	field concatenation n:1 mapping	no	
referenceToTechnologyPictogramme	technology/comment	field concatenation different data types; reference to source data set with reference to image is mapped to text and image type	no	
referenceToTechnologyFlowDiagrammOrPicture	technology/comment	field concatenation different data types; reference to source data set with reference to image is mapped to text and image type	no	

Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Technology	@technologyLevel	no		default value default value for required field 'technologyLevel': "0" (= undefined)
Macro-economic Scenario	@scenariold	no		?
	name	no		?

2.1.1.6 Type: processInformation/mathematicalRelations

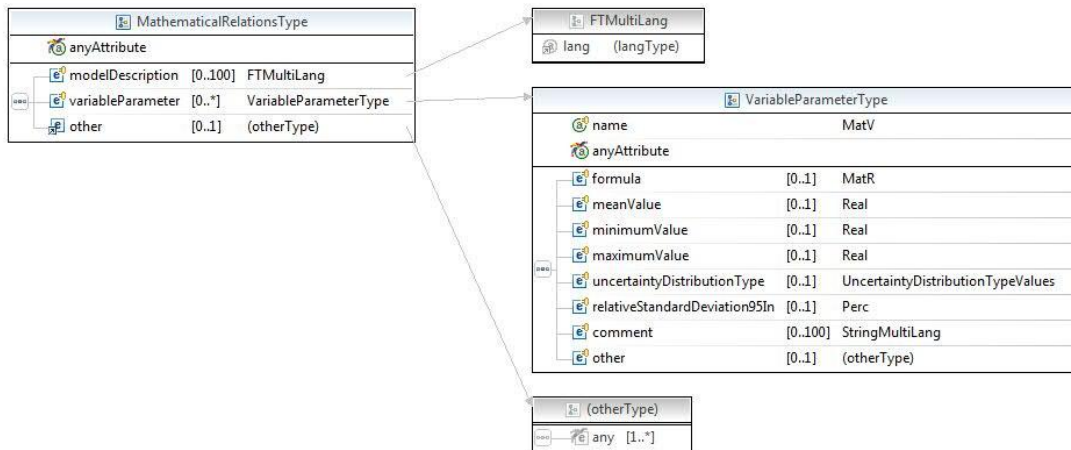


Figure 9: definition of the ILCD MathematicalRelation type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
modelDescription		no corresponding field	no	
variableParameter				

@name	parameter/@variableName or parameter/name	o.k.	no	
formula	parameter/@mathematicalRelation	o.k.	no	
meanValue	parameter/@amount and parameter/uncertainty/lognormal/@meanValue or parameter/uncertainty/normal/@meanValue	o.k. If uncertainty distribution type in ILCD is <ul style="list-style-type: none"> log-normal => parameter/uncertainty/lognormal/@meanValue normal => parameters/uncertainty/normal/@meanValue 	no	
minimumValue	parameter/uncertainty/triangular/@minValue or parameter/uncertainty/uniform/@minValue or Parameter/Uncertainty/undefined/@minValue	o.k. If uncertainty distribution type in ILCD is <ul style="list-style-type: none"> triangular = > Parameters/Uncertainty/triangular/@minValue uniform = > Parameters/Uncertainty/uniform/@minValue undefined = > Parameters/Uncertainty/undefined/@minValue 	no	
maximumValue	parameter/uncertainty/triangular/@maxValue or parameter/uncertainty/uniform/@maxValue or parameter/uncertainty/undefined/@maxValue	o.k. If uncertainty distribution type in ILCD is <ul style="list-style-type: none"> triangular = > parameters/uncertainty/triangular/@maxValue uniform = > parameters/uncertainty/uniform/@maxValue undefined = > parameters/uncertainty/undefined/@maxValue 	no	
uncertaintyDistributionType		no corresponding field	no	
relativeStandardDeviation95In	parameter/uncertainty/lognormal/@standardDeviation95 or parameter/uncertainty/normal/@standardDeviation95 or parameter/uncertainty/undefined/@standardDeviation95	o.k. If uncertainty distribution type is <ul style="list-style-type: none"> log-normal = > parameter/uncertainty/lognormal/@standardDeviation95 normal = > parameter/uncertainty/normal/@standardDeviation95 undefined = > parameter/uncertainty/undefined/@standardDeviation95 	no	
comment	parameter/comment	o.k.	no	

Mandatory fields in EcoSpold02

If a parameter is used, following fields are mandatory:

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
---------	-------	------------	-----------------------	---------------

Activity Description/ Flow data/ Parameter	@parameterId	no		A new ID is generated.
	@amount	yes	no (o)	
	@variableName	yes?	no (o)	default value default value for required field '@variableName': "no name"

2.1.2 Modelling and Validation

The XML schema type of the modelling and validation section contains five complex elements, which are defined by the following schema types (see also figure 10):

- **LCIMethodAndAllocationType**: contains information about LCI methodological modelling aspects including allocation
- **DataSourcesTreatmentAndRepresentativenessType**: provides information about data selection, completeness, and treatment principles and procedures, data sources and market coverage information
- **CompletenessType**: contains information about the data completeness aspects for the dataset
- **ValidationType**: provides information about the validation of the dataset
- **ComplianceDeclarationsType**: comprises statements on compliance of several dataset aspects with compliance requirements as defined by the referenced compliance system

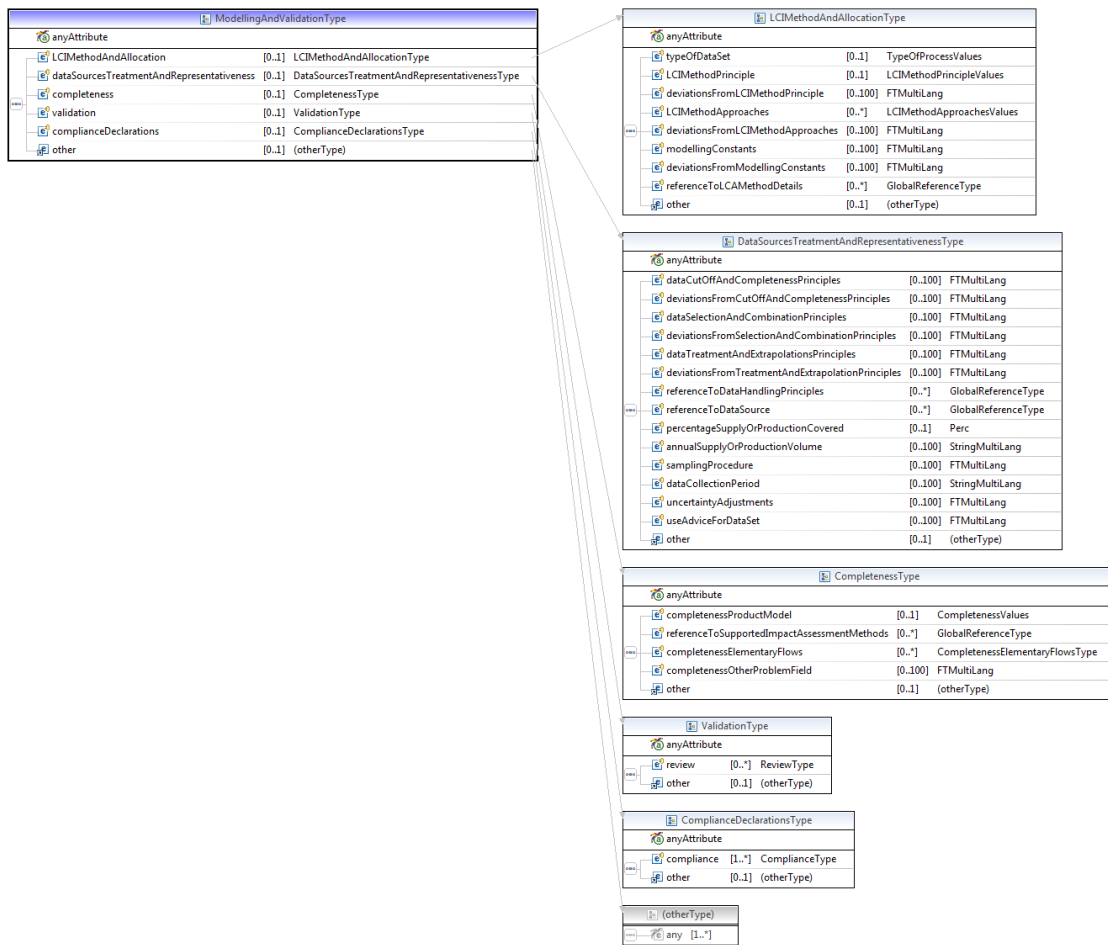


Figure 10: definition of the ILCD ModellingAndValidation type

2.1.2.1 Type: ModellingAndValidation/LCIMethodAndAllocation

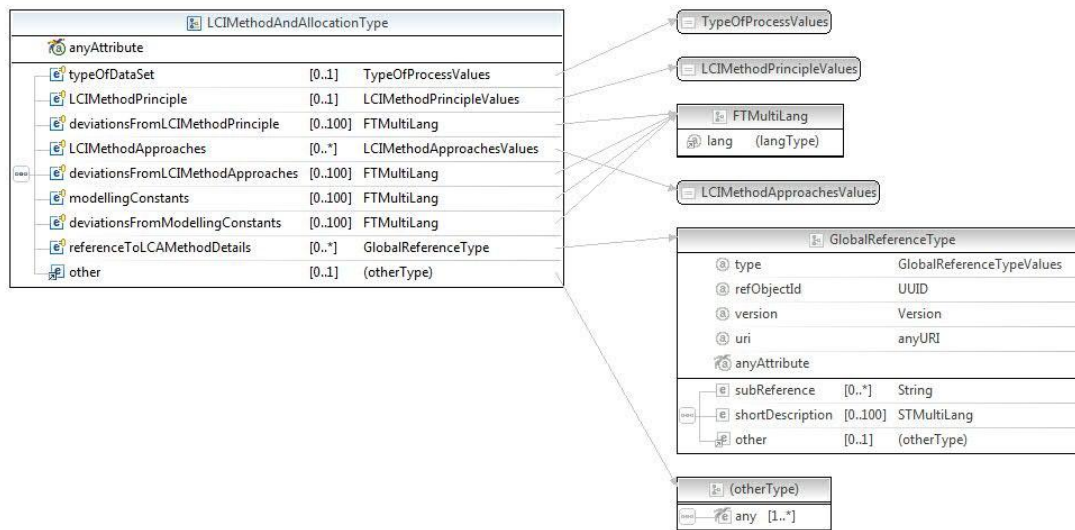


Figure 11: definition of the ILCD LCIMethodAndAllocation type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
TypeOfDataSet	activityDescription/activity/@type	field transformation different enumerations <ul style="list-style-type: none"> “Unit process, single operation” => “1” (= Unit process) “Unit process, black box” => “1” (= Unit process) “LCI result => “2” (= System terminated) “Partly terminated system” => “2” (= System terminated) “Avoided product system” => “2” (= System terminated) 	yes	
LCIMethodPrinciple		no corresponding field	no	
deviationsFromLCIMethodPrinciple		no corresponding field	no	
LCIMethodApproaches	masterData/validProperties/name	master data look up If the name of the LCI method approach does not exist in the ES2 master data, a new property has to be generated.	no	
deviationsFromLCIMethodApproaches	activityDescription/activity/allocationComment	o.k.	no	
modellingConstants		no corresponding field	no	
deviationFromModellingConstants		no corresponding field	no	
referenceToLCAMethodDetails		no corresponding field	no	

No mandatory fields in EcoSpold.

2.1.2.2 Type: ModellingAndValidation/dataSourcesTreatmentAndRepresentation

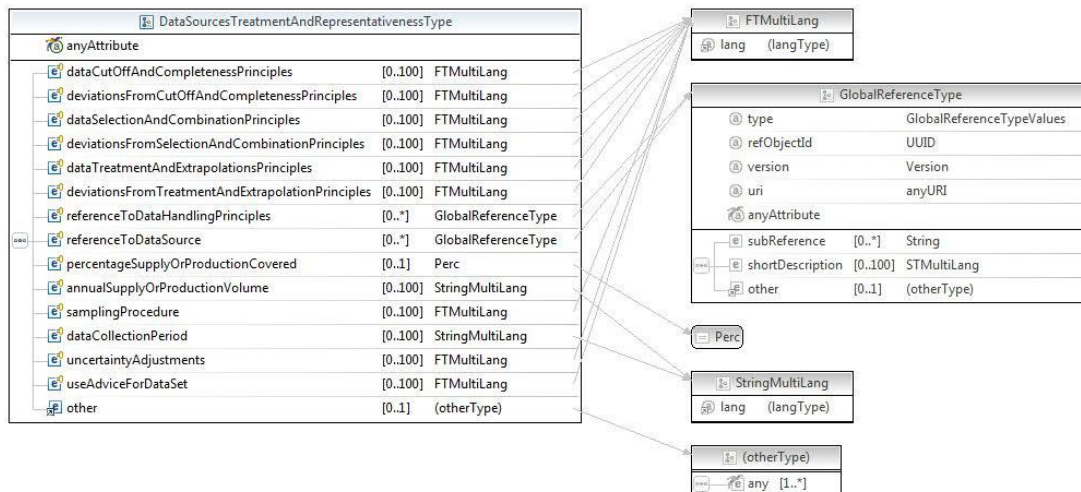


Figure 12: definition of the ILCD DataSourcesTreatmentAndREpresentativeness type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
dataCutOffAndCompletenessPrinciples		no corresponding field		
deviationsFromCutOffAndCompletenessPrinciples		no corresponding field		
dataSelectionAndCombinationPrinciples	modellingAndValidation/representativeness/samplingProcedure	field concatenation n:1 mapping		
deviationsFromSelectionAndCombinationPrinciples		no corresponding field		
dataTreatmentAndExtrapolationsPrinciples	modellingAndValidation/representativeness/extrapolations	field concatenation n:1 mapping		
deviationsFromTreatmentAndExtrapolationPrinciples	modellingAndValidation/representativeness/extrapolations	field concatenation n:1 mapping		
referenceToDataHandlingPrinciples		no corresponding field		
referenceToDataSource	metaInformation/Source/@id	field transformation Sources in ILCD are mapped onto the list of valid sources in ES2.		
percentageSupplyOrProductionCovered	modellingAndValidation/representativeness/@percent	o.k.		
annualSupplyOrProduction	Exchanges/onlyValidForI	o.k.		

nVolume	ntermediateExchanges/ roductionVolumeComm ent			
samplingProcedure	modellingAndValidation/ representativeness/sam plingProcedure	field concatenation: n:1 mapping		
dataCollectionPeriod		no corresponding field		
uncertaintyAdjustments		no corresponding field		
useAdviceForDataSet		no corresponding field		

Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Modelling and Validation/Representativeness	@marketModelId	no		Default value Default value for required field ' <i>@marketModelId</i> ': "8b738ea0-f89e-4627-8679-433616064e82"
	marketModelName	no		Default value Default value for required field ' <i>marketModelName</i> ': "undefined"

2.1.2.3 Type: ModellingAndValidation/completeness

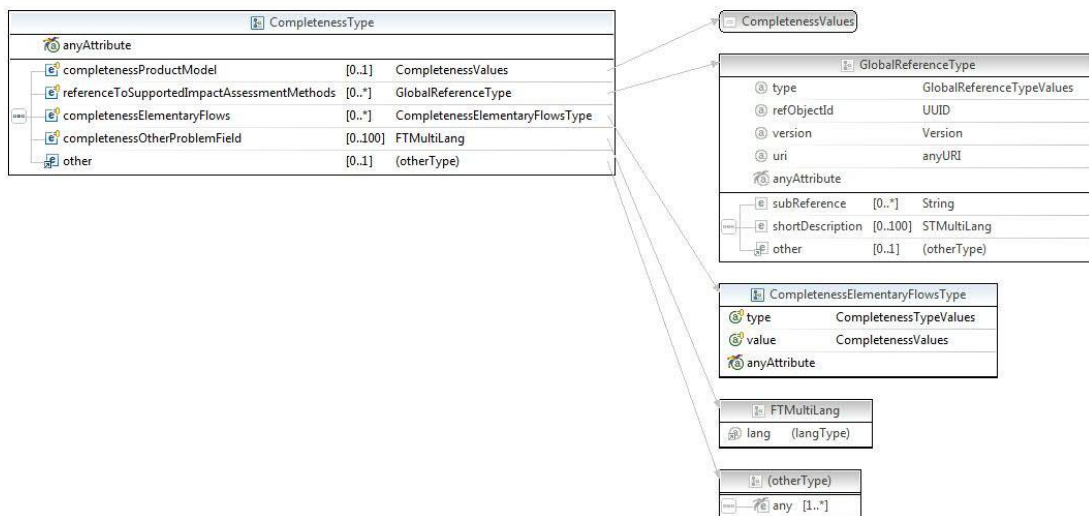


Figure 13: definition of the ILCD Completeness type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
completenessProductModel		no corresponding field	no	
referenceToSupportedImpactAssessmentMethods		no corresponding field	no	

completenessElementaryFields		no corresponding field	no	
@type		no corresponding field	no	
@value		no corresponding field	no	
completenessOtherProblemField		no corresponding field	no	

No mandatory fields in EcoSpold.

2.1.2.4 Type: ModellingAndValidation/validation

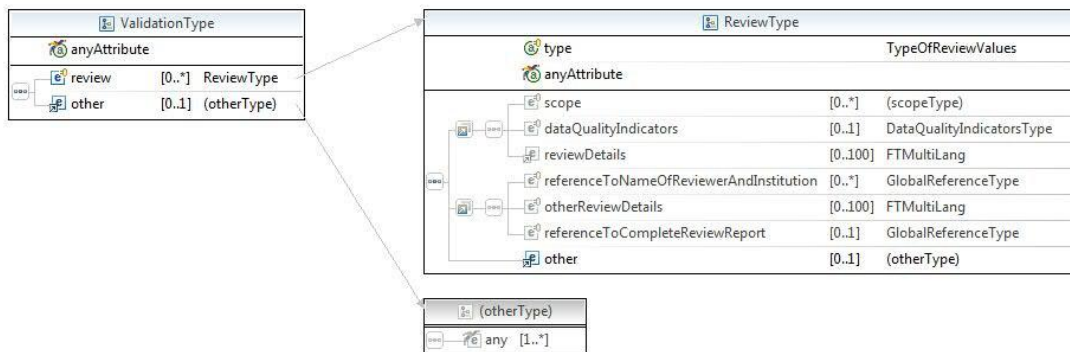


Figure 14: definition of the ILCD Validation type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
review		no corresponding field	no	
@type		no corresponding field	no	
scope		no corresponding field	no	
@name		no corresponding field	no	
method		no corresponding field	no	
@name		no corresponding field	no	
dataQualityIndicators		no corresponding field	no	
dataQualityIndicator		no corresponding field	no	
@name	pedigreeMatrix/@temporalCorrelation or pedigreeMatrix/@geographicalCorrelation or pedigreeMatrix/@com	field transformation: <ul style="list-style-type: none"> “Time representativeness” => pedigreeMatrix/@temporalCorrelation “Geographical representativeness” => 	no	

	pletteness or pedigreeMatrix/@reliability	<p>pedigreeMatrix/@geographicalCorrelation</p> <ul style="list-style-type: none"> “Completeness” => pedigreeMatrix/@completeness “Overall quality” => pedigreeMatrix/@reliability <p>All other entries cannot be mapped.</p>		
@value	pedigreeMatrix/@temporalCorrelation or pedigreeMatrix/@geographicalCorrelation or pedigreeMatrix/@completeness or pedigreeMatrix/@reliability	<p>Enumeration mapping</p> <p>different enumerations with different field meanings:</p> <ul style="list-style-type: none"> “Very good” => “1” “Good” => “1” “Fair” => “2” “Poor” => “3” “Very Poor” => “4” “Not evaluated/unknown” => “5” “Not applicable” => “5” 	yes	
reviewDetails	review/details	o.k.	no	
referenceToNameOfReviewerAndInstitution	review/@reviewerId	o.k.	no	
otherReviewDetails	review/otherDetails	o.k.	no	
referenceToCompleteReviewReport	modellingAndValidation/source/@id	o.k.	no	

If a review is mapped, following fields are mandatory in ES2:

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
review	@reviewerId	yes	no (r)	A new ID is generated.
	@reviewDate	no		default value default value for required field '@reviewDate': 0001-01-01
	@reviewedMajorRelease	no		default value default value for required field '@reviewedMajorRelease': 0001-12-31
	@reviewedMinorRelease	no		default value default value for required field '@reviewedMinorRelease': 0001-01-01
	@reviewedMajorRevision	no		default value default value for required field '@reviewedMajorRevision': 0001-12-31
	@reviewedMinorRevision	no		default value default value for required field '@reviewedMinorRevision': 0001-01-01

2.1.2.5 Type: ModellingAndValidation/complianceDeclarations

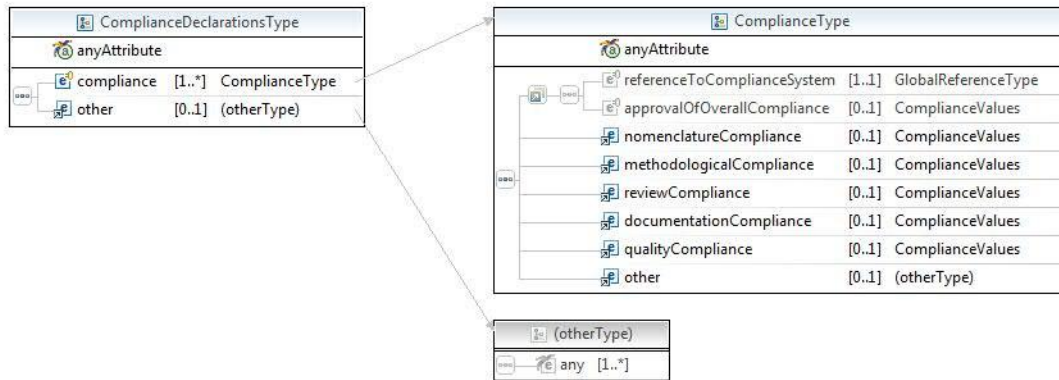


Figure 15: definition of the ILCD ComplianceDeclarations type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
compliance		no corresponding field	no	
referenceToComplianceSystem		no corresponding field	no	
approvalOfOverallCompliance		no corresponding field	no	
nomenclatureCompliance		no corresponding field	no	
methodologicalCompliance		no corresponding field	no	
reviewCompliance		no corresponding field	no	
documentationCompliance		no corresponding field	no	
qualityCompliance		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.1.3 Administrative Information

The XML schema of the AdministrativeInformationType comprises four complex elements. It concerns the following data types (see also figure 16):

- **CommissionerAndGoalType:** provides basic information about goal and scope of the dataset
- **DataGeneratorType:** contains information about the person that compiled and modeled the dataset

- **DataEntryByType:** provides information about the staff or entity that documented the generated dataset, entering the information into the database
- **PublicationAndOwnershipType:** contains information related to publication and version management of the dataset including copyright and access restrictions

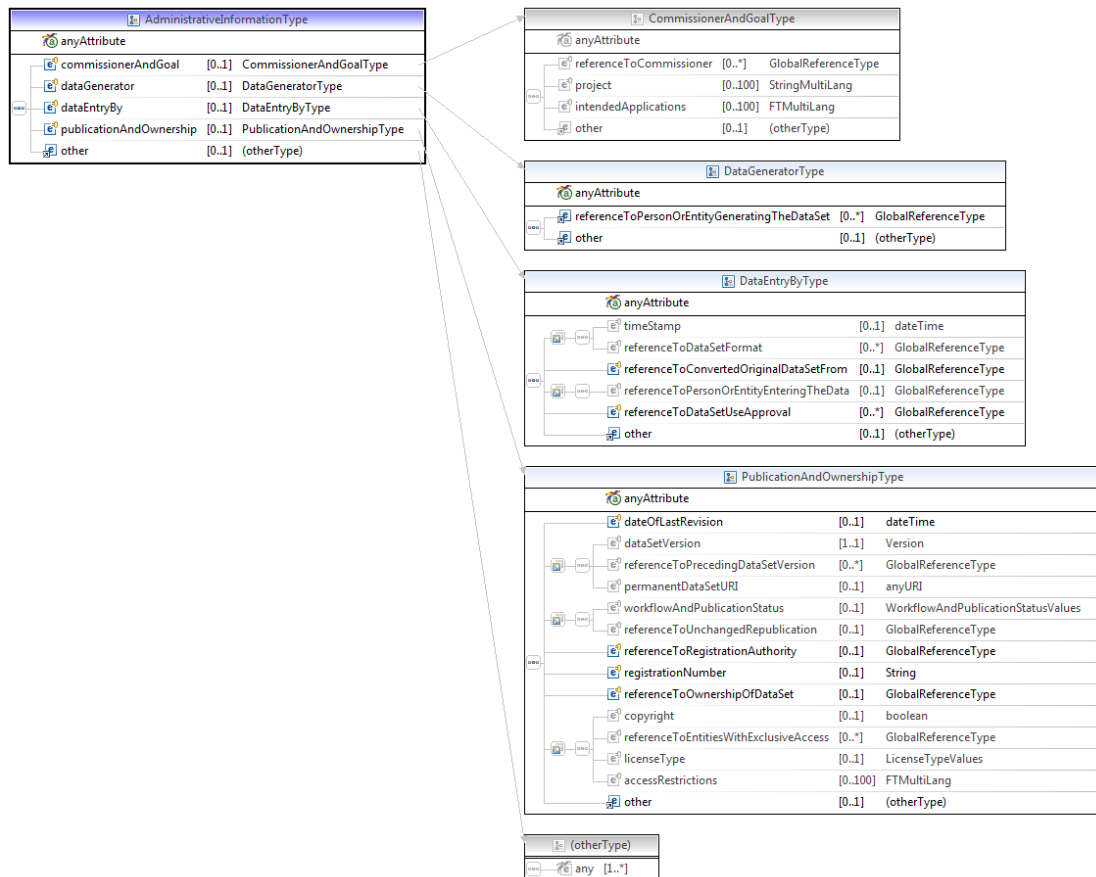


Figure 16: definition of the ILCD DataSourcesTreatmentAndREpresentativeness type

2.1.3.1 Type: administrativeInformation/commissionerAndGoal

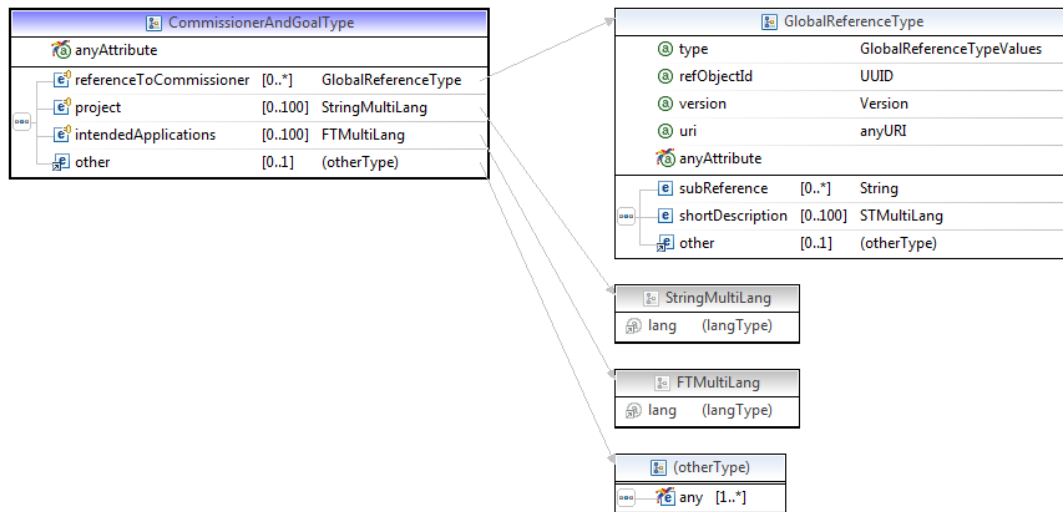


Figure 17: definition of the ILCD CommissionerAndGoal type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
referenceToCommissioner		no corresponding field	no	
project		no corresponding field	no	
intendedApplications		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.1.3.2 Type: administrativeInformation/dataGenerator

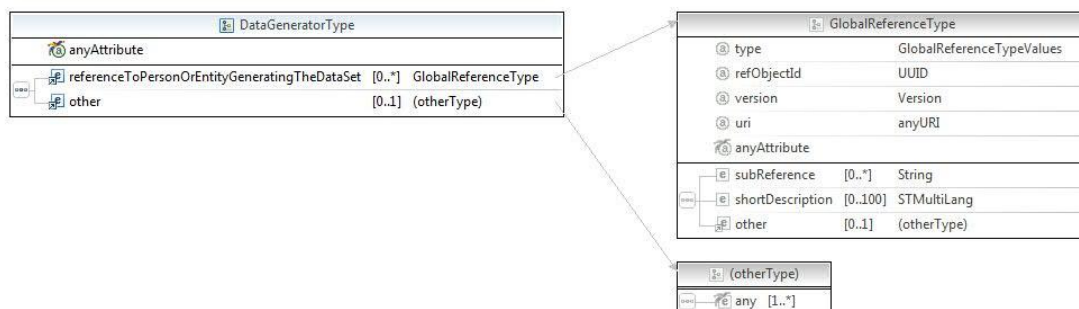


Figure 18: definition of the ILCD DataGenerator type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
referenceToPersonOrEntityGeneratingTheDataSet	metaInformation/dataGeneratorAndPublication/@personId	o.k. The reference ID in ILCD can be mapped to a person ID in ES2, but new contact data for this person have to be generated.	no	

Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Administrative information/ Data generator and publication	@personId	yes	no (r)	A new ID is generated.
	@isCopyrightProtected	yes	no (r)	default value default value for required field 'isCopyrightProtected': true

2.1.3.3 Type: administrativeInformation/dataEntryBy

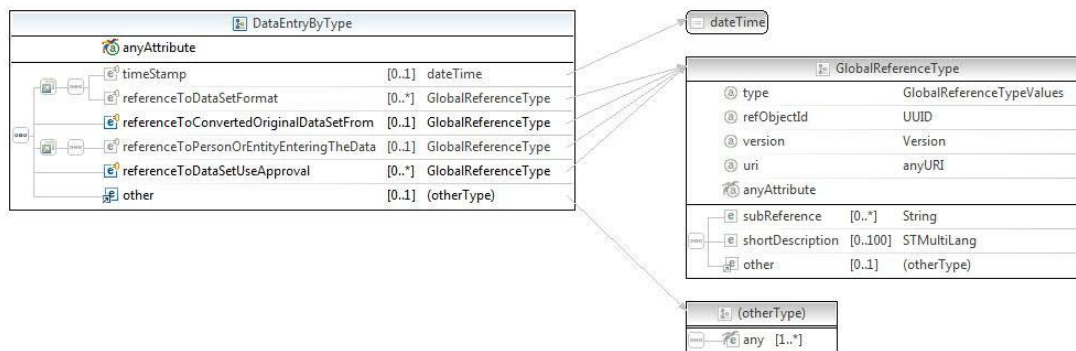


Figure 19: definition of the ILCD DataEntryBy type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
timeStamp	metaInformation/fileAttributes/@fileTimestamp		no	
referenceToDataSetFormat		no corresponding field	no	
referenceToConvertedOriginalDataSetFrom		no corresponding field	no	
referenceToPersonOrEntityEnteringTheData	metaInformation/dataEntryBy/@personId	o.k. The reference ID in ILCD can be mapped to a person ID in ES2, but new contact data for this person have to be generated.	no	

Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Administrative information/Data entry by	@personId	yes	no (o)	A new ID is generated.

2.1.3.4 Type: administrativeInformation/publicationAndOwnership

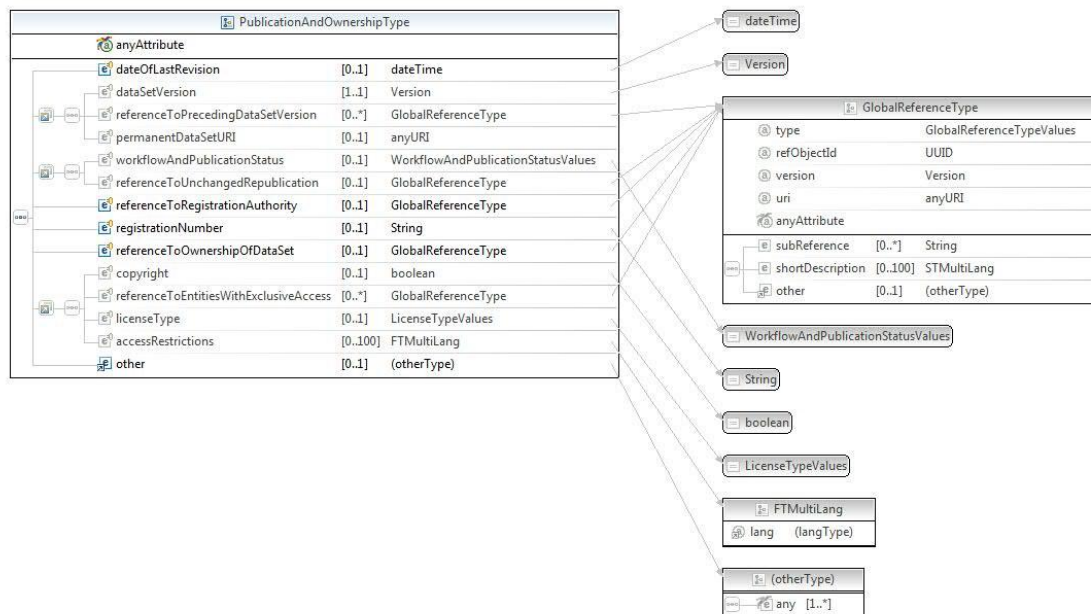


Figure 20: definition of the ILCD PublicationAndOwnership type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
dateOfLastRevision	metaInformation/fileAttributes/lastEditDate	o.k.	no	
dataSetVersion	metaInformation/fileAttributes/@version	o.k.	no	
referenceToPrecedingDataSetVersion		no corresponding field	no	
permanentDataSetURI		no corresponding field	no	
workflowAndPublicationStatus	metaInformation/dataGeneratorAndPublication/@dataPublishedIn	Enumeration mapping different enumerations: <ul style="list-style-type: none"> “Working draft” => “0” “Final draft for external review” => “0” “Data set finalised; unpublished” => “0” “Under revision” => “0” “Withdrawn” => “0” 	yes	

		<ul style="list-style-type: none"> “Data set finalised; subsystem published” => “1” “Data set finalised; entirely” => “2” 		
referenceToUnchangedRe publication	metaInformation/data GeneratorAndPublication /@publishedSourceId	different field meaning In ILCD this field is a reference to an unchanged publication of the data set, in ES2 it is the reference to a documentation of the data set	no	
referenceToRegistrationA uthority		no corresponding field	no	
registrationNumber		no corresponding field	no	
referenceToOwnershipOfD ataSet		no corresponding field	no	
copyright	metaInformation/data GeneratorAndPublication /@isCopyrightProtecte d	o.k.	no	
referenceToEntitiesWithEx clusiveAccess	metaInformation/data GeneratorAndPublication /@companyId	o.k.	no	
licenseType	metaInformation/data GeneratorAndPublication /@accessRestrictedTo	Enumeration mapping different enumerations: <ul style="list-style-type: none"> “free of charge for all users and uses” => “0” default entry for all other items: “3” 	yes	
accessRestrictions	metaInformation/data GeneratorAndPublication /@accessRestrictedTo	field transformation not possible: different data types	no	

Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Person	@name	yes	no (r)	default value default value for required field '@name': “no name”
	@id	yes	yes	
	@email	yes	no (o)	default value default value for required field '@email': “no email”

If a source is defined, following field is also mandatory:

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Source	@id	yes	no (r)	master data look up: If the source exists already in the ES2 master data, the ID is taken. If not, a new source with a new ID is generated.

2.1.4 Exchanges

The XML schema type of the exchanges contains only one complex element that is defined by the **ExchangeType**. This complex element can occur any numbers of times and contains information about an exchange of the process.

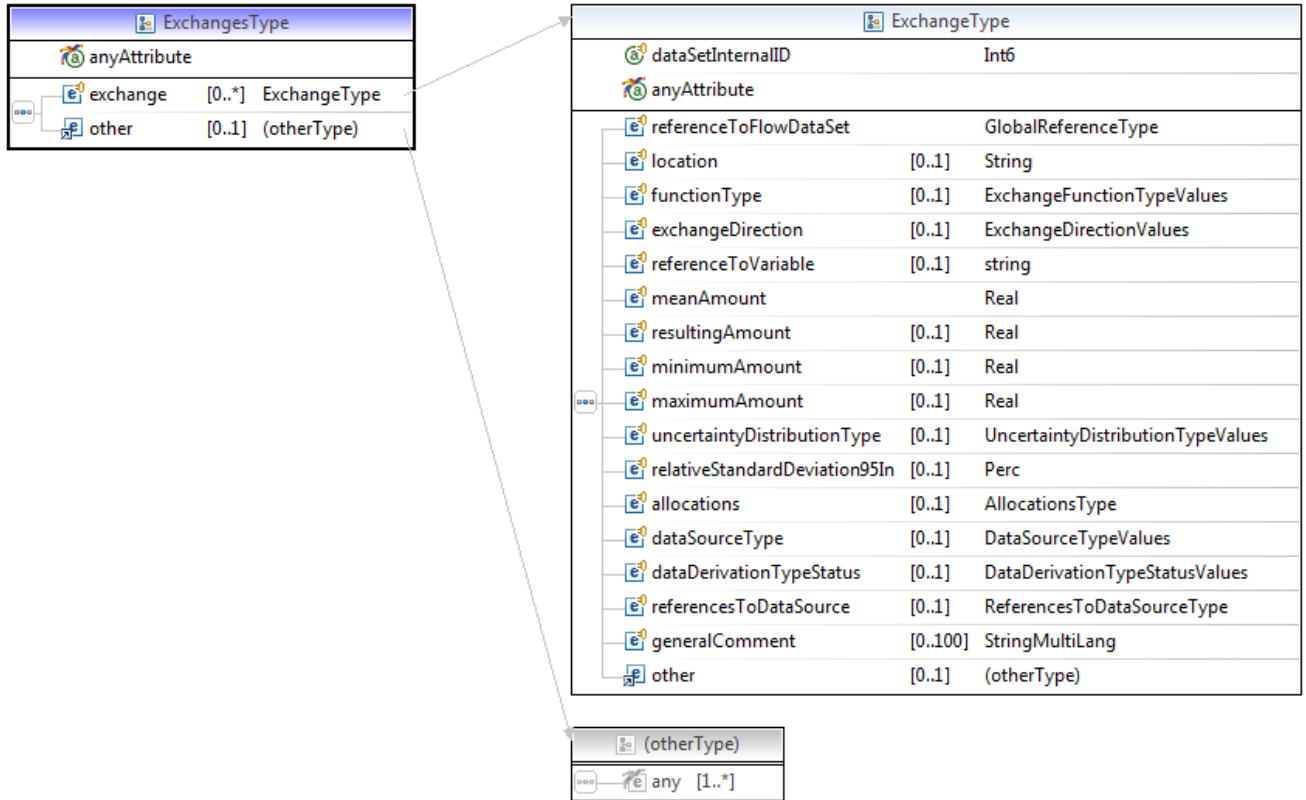


Figure 21: definition of the ILCD Exchanges type

2.1.4.1 Type: exchanges/exchange

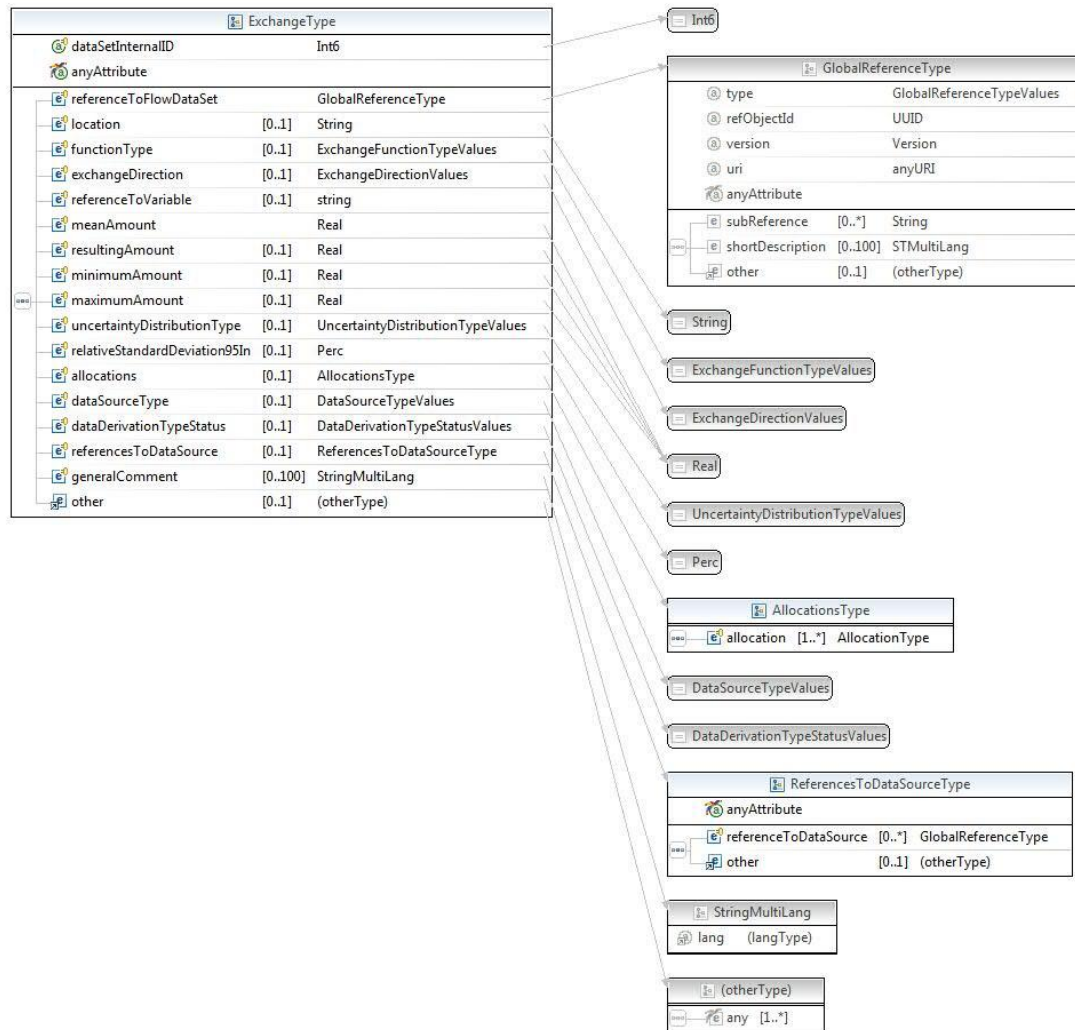


Figure 22: definition of the ILCD Exchange type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
@dataSetInternalID		no corresponding field	no	
referenceToFlowDataSet	flowData/exchanges/ @intermediateExchangeId or flowData/exchanges/ @elementaryExchangeId		no	
location		no corresponding field	no	
functionType		no corresponding field	no	
exchangeDirection	flowData/Exchanges/in	Enumerations mapping	yes	

	intermediateExchanges/inputGroup or flowData/Exchanges/intermediateExchanges/outputGroup or flowData/Exchanges/elementaryExchanges/inputGroup or flowData/Exchanges/elementaryExchanges/outputGroup	The flow type in combination with the direction of the flow allows a mapping to the enumeration in ES2: <ul style="list-style-type: none"> ILCD elementary exchange: "Input" => elementaryExchanges/inputGroup: "4" (= from environment) ILCD elementary exchange: "Output" => elementaryExchanges/outputGroup: "4" (= to environment) ILCD product flow: "Input" => intermediateExchanges/inputGroup: "5" (= from technosphere (unspecified)) ILCD product flow: "Output" => intermediateExchanges/outputGroup: "0" (= reference product), if reference flow; "3" (= waste to treatment), if waste flow; otherwise default value "2" (= by-product) 		
referenceToVariable	flowData/parameter/variableName	no corresponding field	no	
meanAmount	flowData/parameter/uncertainty/lognormal/@meanValue or flowData/parameter/uncertainty/normal/@meanValue	If uncertainty distribution type in ILCD is <ul style="list-style-type: none"> log-normal = flowData/parameter/uncertainty/lognormal/@meanValue normal = flowData/parameter/uncertainty/normal/@meanValue 	no	
resultingAmount	flowData/intermediateExchange/@amount or flowData/elementaryExchange/@amount	field transformation different data types	no	
minimumAmount	flowData/exchanges/uncertainty/triangular/@minValue or flowData/exchanges/uncertainty/uniform/@minValue or flowData/exchanges/uncertainty/undefined/@minValue	If uncertainty distribution type in ILCD is <ul style="list-style-type: none"> triangular = flowData/exchanges/uncertainty/triangular/@minValue uniform = flowData/exchanges/uncertainty/uniform/@minValue undefined = flowData/exchanges/uncertainty/undefined/@minValue 	no	
maximumAmount	flowData/exchanges/uncertainty/triangular/@maxValue or flowData/exchanges/uncertainty/uniform/@maxValue or flowData/exchanges/uncertainty/undefined/@maxValue	If uncertainty distribution type in ILCD is <ul style="list-style-type: none"> triangular = flowData/exchanges/uncertainty/triangular/@maxValue uniform = flowData/exchanges/uncertainty/uniform/@maxValue undefined = flowData/exchanges/uncertainty/undefined/@maxValue 	no	
uncertaintyDistributionType		no corresponding field	no	
relativeStandardDeviation95In	flowData/exchanges/uncertainty/lognormal/	If uncertainty distribution type is <ul style="list-style-type: none"> log-normal = 	no	

	@standardDeviation95 or flowData/exchanges/uncertainty/normal/@standardDeviation95 or flowData/exchanges/uncertainty/undefined/@standardDeviation95	flowData/parameter/uncertainty/log normal/@standardDeviation95 <ul style="list-style-type: none"> normal = flowData/exchanges/uncertainty/normal/@standardDeviation95 undefined = flowData/exchanges/uncertainty/undefined/@standardDeviation95 		
allocations		no corresponding field	no	
allocation		no corresponding field	no	
@internalReferenceToCoProduct		no corresponding field	no	
@allocatedFraction		no corresponding field	no	
dataSourceType		no corresponding field	no	
dataDerivationTypeStatus		no corresponding field	no	
referenceToDataSource		no corresponding field	no	
generalComment	flowData/exchanges/comment	o.k.	no	

Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Exchanges	name	yes	no (r)	default value default value for required field 'name' : "no name"
	@id	no		A new ID is generated.
	@amount	yes	no (r)	If the field 'resultingAmount' in ILCD is not given, the field 'meanAmount', which is mandatory, can be used as alternative.
	@unitId	yes	no (r)	master data look up: If the unit exists in the ES2 master data, the ID is taken. If not, a new unit has to be generated.
Exchanges/Only valid for Intermediate Exchanges	@intermediateExchangeId	yes	no (r)	master data look up: If the product flow exists already in the ES2 master data, the ID is taken. If not, a new intermediate exchange with a new ID has to be generated.
	inputGroup	partly	no (r)	default value default value for required field 'inputGroup' : "5" (= from technosphere (unspecified))
	outputGroup	partly	no (r)	default value default value for required field 'outputGroup' : "2" (= by-product)

If an elementary exchange is mapped, following fields are also mandatory:

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Exchanges/Only valid for elementary Exchanges	@elementaryExchangeId	yes	no (r)	master data look up: If the product flow exists already in the ES2 master data, the ID is taken. If not, a new intermediate exchange with a new ID has to be generated.
	inputGroup	no		default value default value for required field 'inputGroup' : "4" (= from environment) (The field 'exchangeDirection' gives information about the direction of the flow.)
	outputGroup	no		default value default value for required field 'outputGroup' : "4" (= to environment) (The field 'exchangeDirection' gives information about the direction of the flow.)

2.1.5 LCIA results

The XML schema of the LCIA results type contains one complex element that is defined by the **LCIAResultType**. This complex element can occur any numbers of times and describes a LCIA result.

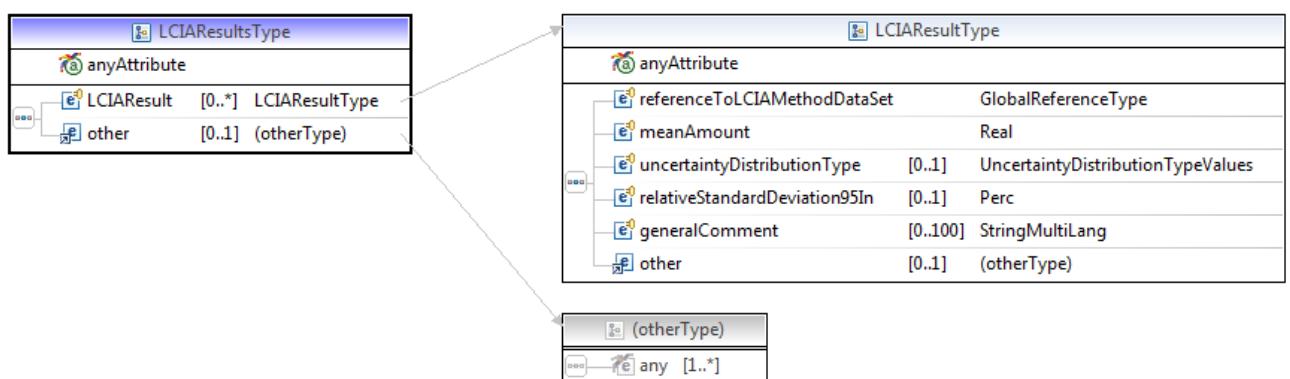


Figure 23: definition of the ILCD LCIAResults type

2.1.5.1 Type: LCIAResults/LCIAResult

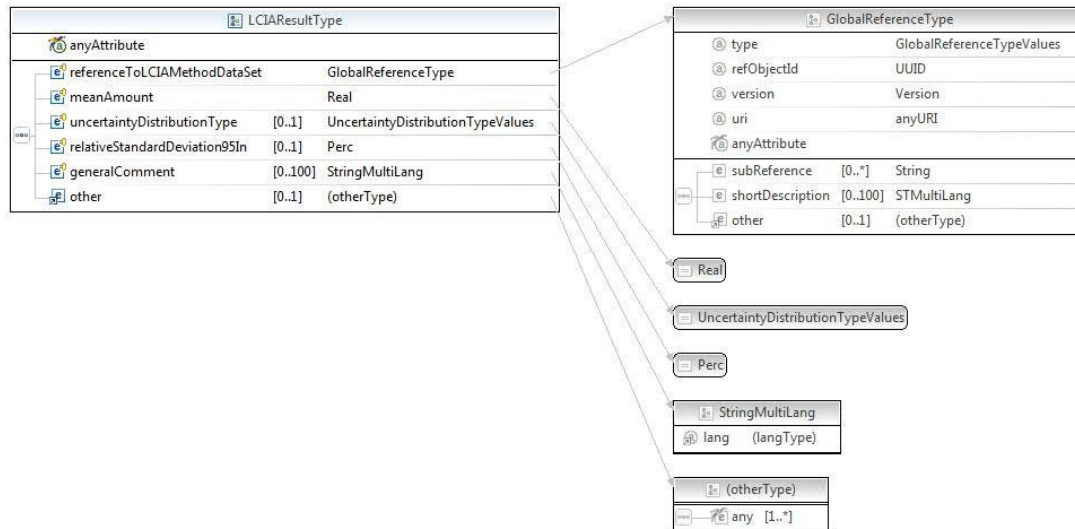


Figure 24: definition of the ILCD LCIAResult type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
referenceToLCIAMethodDataSet		no corresponding field	no	
meanAmount		no corresponding field	no	
uncertaintyDistributionType		no corresponding field	no	
relativeStandardDeviation95In		no corresponding field	no	
generalComment		no corresponding field	no	

No mandatory fields in EcoSpold.

2.2 Flow dataset

The XML schema of the flow dataset comprises two attributes and four complex elements. The complex elements are defined by the following data types (see also figure 25):

- **FlowInformationType**: contains information about the flow
- **ModellingAndValidationType**: contains information about the modelling and validation of the flow dataset

- **AdministrativeInformationType**: comprises administrative information regarding the flow dataset
- **FlowPropertiesType**: contains a list of flow properties

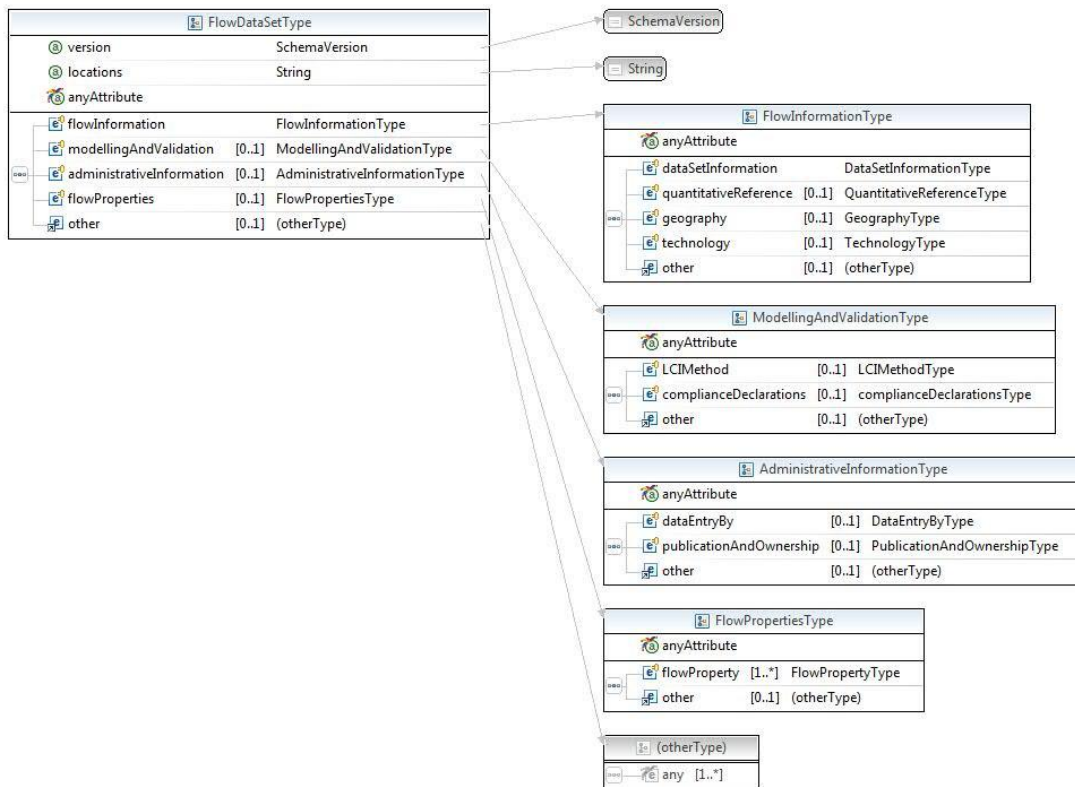


Figure 25: definition of the ILCD flowDataSet type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
@version		no corresponding field	no	
@locations		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.2.1 Flow information

The XML schema of the flow information type contains four complex elements with the following data types (see also figure 26):

- **DataSetInformationType**: contains general dataset information of the flow dataset

- **QuantitativeReferenceType**: names the type of quantitative references used for the flow dataset
- **GeographyType**: provides information about the geographical representativeness of the flow data set
- **TechnologyType**: provides information about the technological representativeness of the flow data set

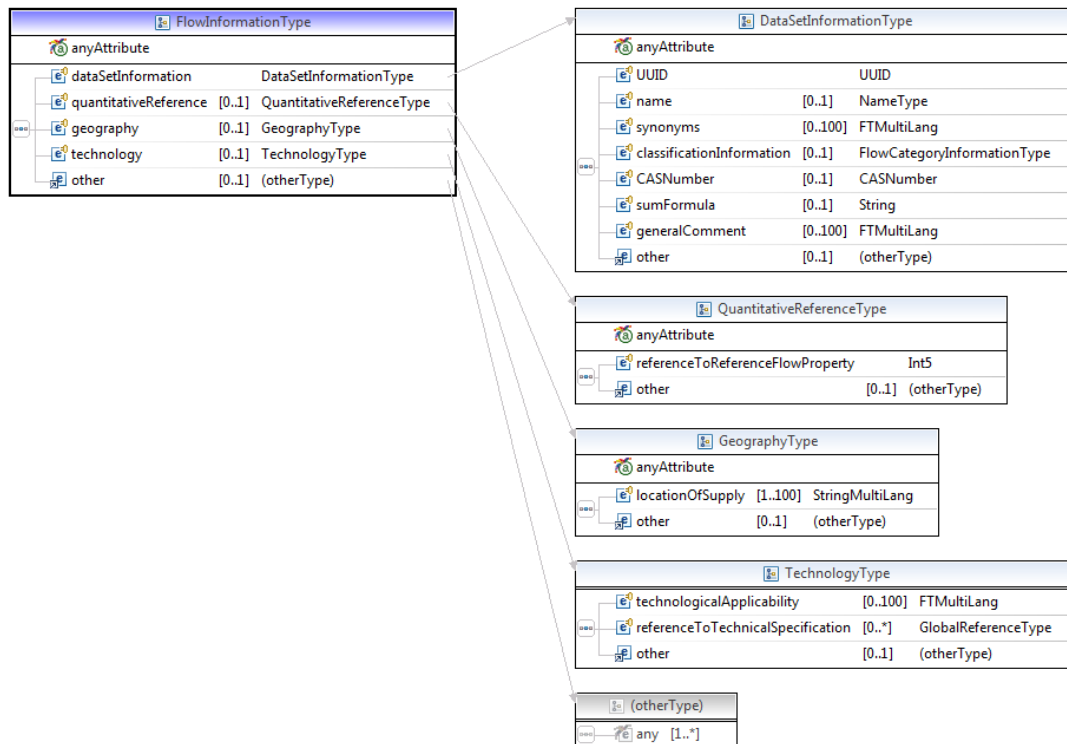


Figure 26: definition of ILCD FlowInformation type

2.2.1.1 Type: flowInformation/dataSetInformation

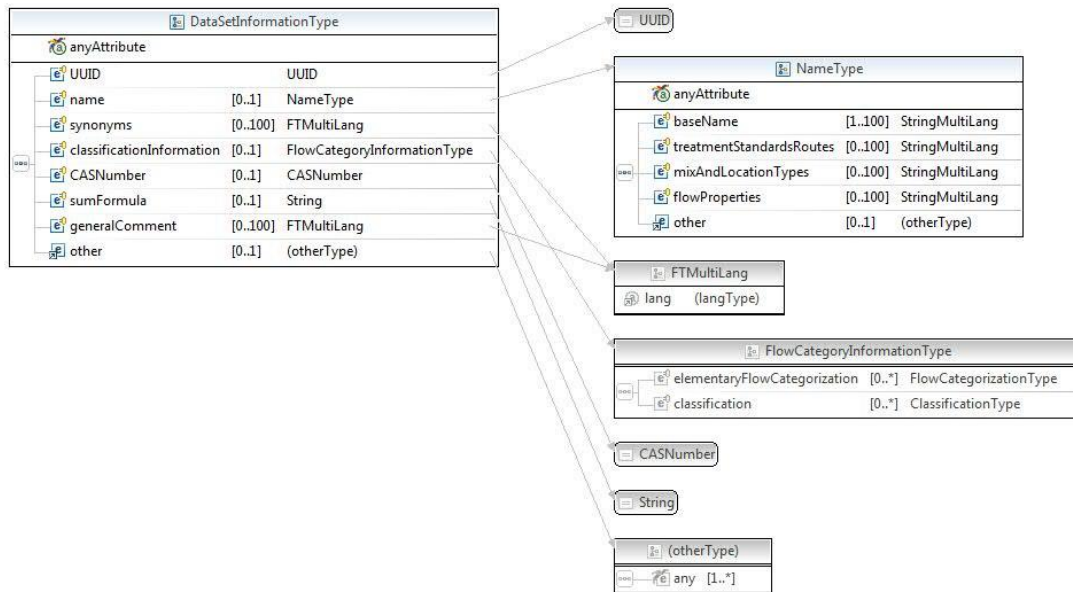


Figure 27: definition of ILCD DataSetInformation type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
UUID	flowData/exchanges/ @intermediateExchangeId or flowData/exchanges/ @elementaryExchangeId	o.k.	no	
name				
baseName	flowData/exchanges/name	field concatenation: The EcoSpold name is the concatenation of three ILCD name fields: <baseName>, <treatmentStandardsRoutes>, <mixAndLocationTypes>	no	
treatmentStandardsRoutes	flowData/exchanges/name	field concatenation: The EcoSpold name is the concatenation of three ILCD name fields: <baseName>, <treatmentStandardsRoutes>, <mixAndLocationTypes>	no	
mixAndLocationTypes	flowData/exchanges/name	field concatenation: The EcoSpold name is the concatenation of three ILCD name fields: <baseName>, <treatmentStandardsRoutes>, <mixAndLocationTypes>	no	
flowProperties		??	no	

synonyms	flowData/exchanges/synonym	o.k.	no	
classificationInformation		no corresponding field	no	
elementaryFlowCategorization				
@name	masterData/elementaryExchanges/generalComment	default entry: „Name of categorization system: ##@name##“	no	
@categories		no corresponding field	no	
category				
@level	flowData/exchanges/elementaryExchanges/compartment and flowData/exchanges/elementaryExchanges/subcompartment	field transformation: mapping of different classification systems with different compartments: <ul style="list-style-type: none"> • Emissions/Emissions to air/Emissions to air, unspecified => air/unspecified • Emissions/Emissions to air/Emissions to air, unspecified (long-term) => new compartment • Emissions/Emissions to air/Emissions to lower stratosphere and upper troposphere => air/lower stratosphere + upper troposphere • Emissions/Emissions to air/Emissions to non-urban air or from high stacks => air/low population density • Emissions/Emissions to air/Emissions to urban air close to ground => air/high population density • Emissions/Emissions to soil/Emissions to agricultural soil => soil/agricultural • Emissions/Emissions to soil/Emissions to non-agricultural soil => new subcompartment must be generated • Emissions/Emissions to soil/Emissions to soil, unspecified => soil/unspecified • Emissions/Emissions to water/Emissions to fresh water => new subcompartment must be generated • Emissions/Emissions to water/Emissions to sea water => water/ocean • Emissions/Emissions to water/Emissions to water, unspecified => water/unspecified • Emissions/Emissions to water/Emissions to water, unspecified (long-term) => new subcompartment must be generated • Resources/Resources from air/Renewable element resources from air => resource/in air • Resources/Resources from air/Renewable energy resources from air => resource/in air 		

		<ul style="list-style-type: none"> Resources/Resources from air/Renewable material resources from air => resource/in air Resources/Resources from biosphere => resource/biotic Resources/Resources from biosphere/Renewable energy resources from biosphere => resource/biotic Resources/Resources from ground/Non-renewable element resources from ground => resource/in ground Resources/Resources from ground/Non-renewable energy resources from ground => resource/in ground Resources/Resources from ground/Non-renewable material resources from ground => resource/in ground Resources/Resources from ground/Renewable energy resources from ground => resource/in ground Resources/Resources from ground/Renewable material resources from ground => resource/in ground Resources/Resources from water/Non-renewable element resources from water => resource/in water Resources/Resources from water/Non-renewable material resources from water => resource/in water Resources/Resources from water/Renewable energy resources from water => resource/in water Resources/Resources from water/Renewable material resources from water => resource/in water 		
@catId		no corresponding field	no	
classificationInformation/classification				
@name	masterData/intermediateExchanges/classification/@classificationSystem	field transformation: The classification system name is mapped to a multiple language field. If no name is given the default value is "ILCD" (see definition of the classification type in ILCD_Common_Groups.xsd)	no	
@classes	fileAttributes/validClassifications	master data look up If the classes in ILCD do not exist in the master data of ES2, new classes have to be generated.	no	
class				
@level	masterData/intermediateExchanges/@classification	o.k.	no	

	cationValue			
@classId		no corresponding field	no	
CASNumber	flowData/exchanges/ @casNumber	o.k.	no	
sumFormula	flowData/exchanges/el ementaryExchanges/@ formula	o.k.	no	
generalComment	flowData/exchanges/c omment	o.k.	no	

No mandatory fields in EcoSpold in the corresponding section.

2.2.1.2 Type: flowInformation/quantitativeReference

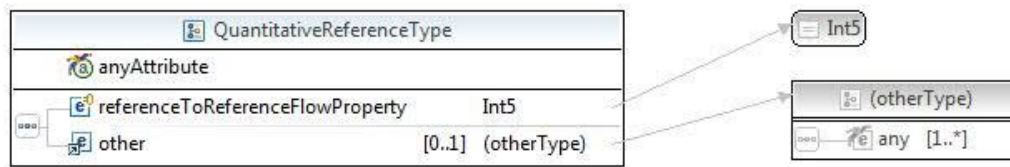


Figure 28: definition of ILCD QuantitativeReference type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
referenceToReferenceFlowProperty	flowData/exchanges/ unitId	o.k.	no	

No mandatory fields in EcoSpold in the corresponding section.

2.2.1.3 Type: flowInformation/geography

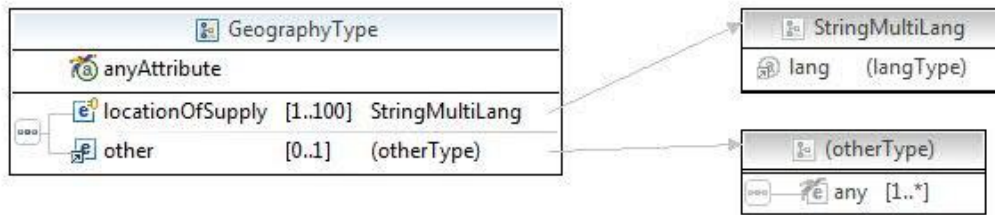


Figure 29: definition of ILCD Geography type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
locationOfSupply		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.2.1.4 Type: flowInformation/technology

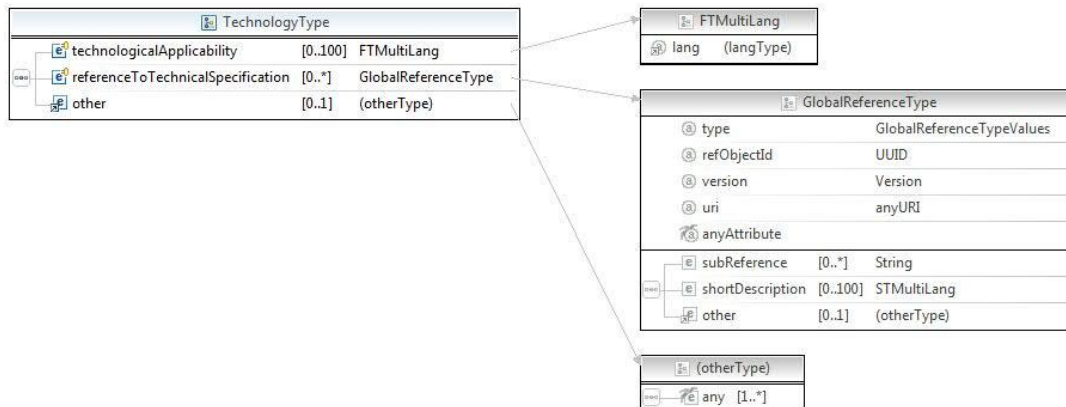


Figure 30: definition of ILCD Technology type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
technologicalApplicability		no corresponding field	no	

referenceToTechnicalSpecification		no corresponding field	no	
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No mandatory fields in EcoSpold in the corresponding section.

2.2.2 Modelling and validation

The ModellingAndValidationType comprises two complex elements. These complex elements are defined by the following XML schema types (see also figure 31):

- **LCIMethodType**: contains LCI methodological modelling aspects
- **ComplianceDeclarationsType**: provides statements on compliance of several data set aspects with compliance requirements as defined by the referenced compliance system

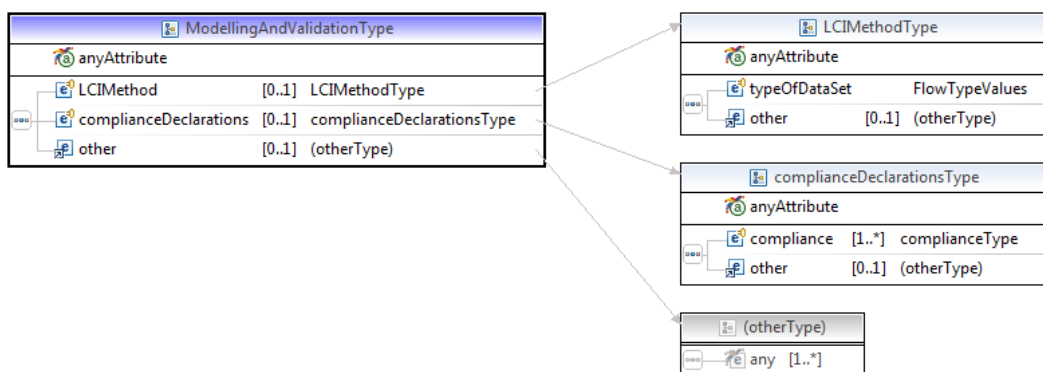


Figure 31: definition of ILCD ModellingAndValidation type

2.2.2.1 Type: ModellingAndValidation/LCIMethod

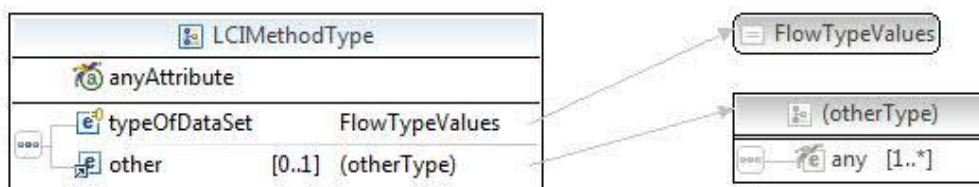


Figure 32: definition of ILCD LCIMethod type

ILCD field	EcoSpold field	Comment	Nomen-	Assess-
------------	----------------	---------	--------	---------

			clature mapping?	ment
typeOfDataSet	<p>flowData/exchanges/intermediateExchanges/inputGroup or flowData/exchanges/intermediateExchanges/outputGroup or flowData/exchanges/elementaryExchanges/inputGroup or flowData/exchanges/elementaryExchanges/outputGroup</p>	<p>field transformation: This field in combination with the classification level and the exchange direction gives information about the exchange properties:</p> <ul style="list-style-type: none"> • “Elementary flow” and exchange direction “Output” => flowData/exchanges/elementaryExchanges/outputGroup = “4” (= to environment) • “Elementary flow” and exchange direction “Input” => flowData/exchanges/elementaryExchanges/inputGroup = “4” (= from environment) • “Product flow”, exchange direction “Input”, and level “Electricity” or “Heat” => flowData/exchanges/intermediateExchanges/inputGroup = “2” (= electricity/heat) • “Product flow”, exchange direction “Input” and all other levels => flowData/exchanges/intermediateExchanges/inputGroup = “5” (= from technosphere (unspecified)) • “Product flow”, exchange direction “Output” => flowData/exchanges/intermediateExchanges/outputGroup = “2” (= by-product), if flow is not reference • “Product flow”, exchange direction “Output” => flowData/exchanges/intermediateExchanges/outputGroup = “0” (= reference product), if flow is reference • “Waste flow”, exchange direction “Output” => flowData/exchanges/intermediateExchanges/outputGroup = “3” (= waste to treatment) 	yes	

No mandatory fields in EcoSpold in the corresponding section.

2.2.2.2 Type: ModellingAndValidation/complianceDeclarations

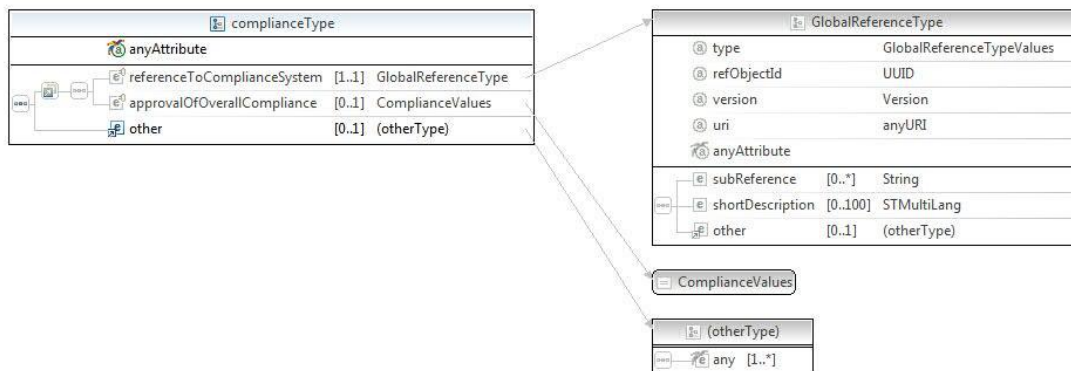


Figure 33: definition of ILCD ComplianceDeclarations type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
compliance		no corresponding field	no	
referenceToComplianceSystem		no corresponding field	no	
approvalOfOverallCompliance		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.2.3 Administrative information

The XML schema of the AdministrativeInformationType has two complex elements, that are defined by the following types (see also figure 34):

- **DataEntryByType:** contains information about the staff or entity that documented the generated flow dataset, entering the information into the database
- **PublicationAndOwnershipType:** covers information related to publication and version management of the dataset including copyright and access restrictions

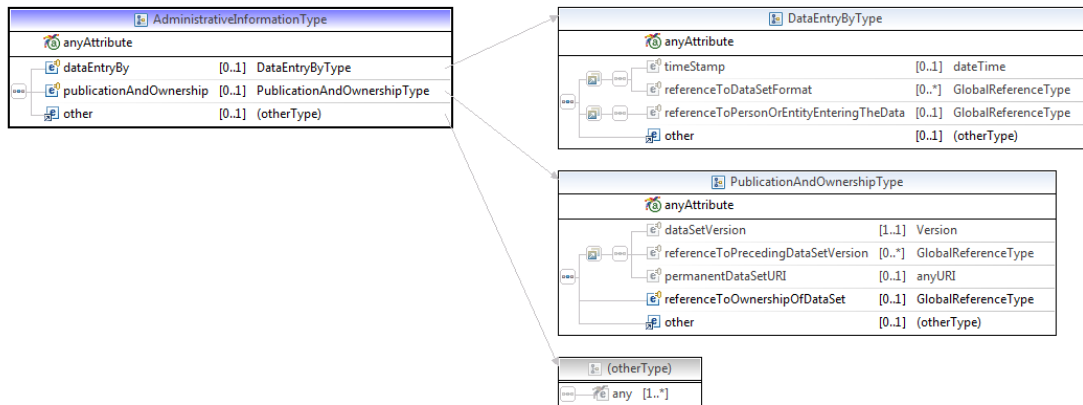


Figure 34: definition of ILCD AdministrativeInformation type

2.2.3.1 Type: administrativeInformation/dataEntryBy

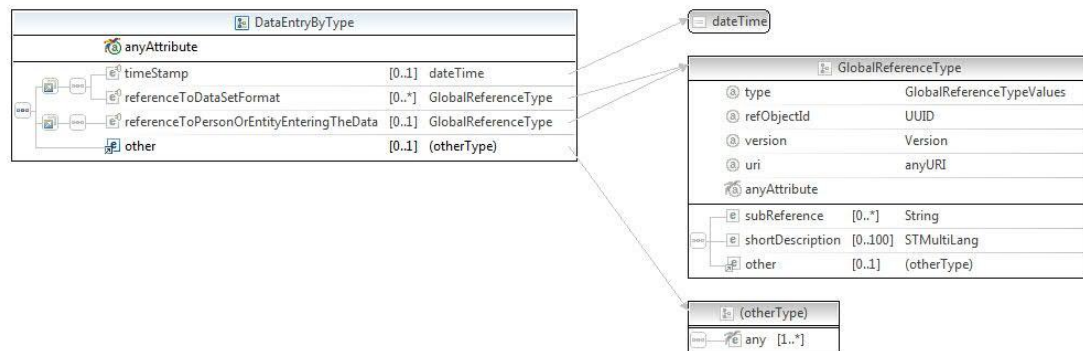


Figure 35: definition of ILCD DataEntryBy type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
timeStamp	masterData/elementaryExchanges/@creationTimeStamp or masterData/intermediateExchanges/@creationTimeStamp	Field transformation: <ul style="list-style-type: none"> for elementary Exchanges => masterData/elementaryExchanges/@creationTimeStamp for product flows or waste flows => masterData/intermediateExchanges/@creationTimeStamp 	no	
referenceToDataSetFormat		no corresponding field	no	
referenceToPersonOrEntityEnteringTheData		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.2.3.2 Type: administrativeInformation/publicationAndOwnership

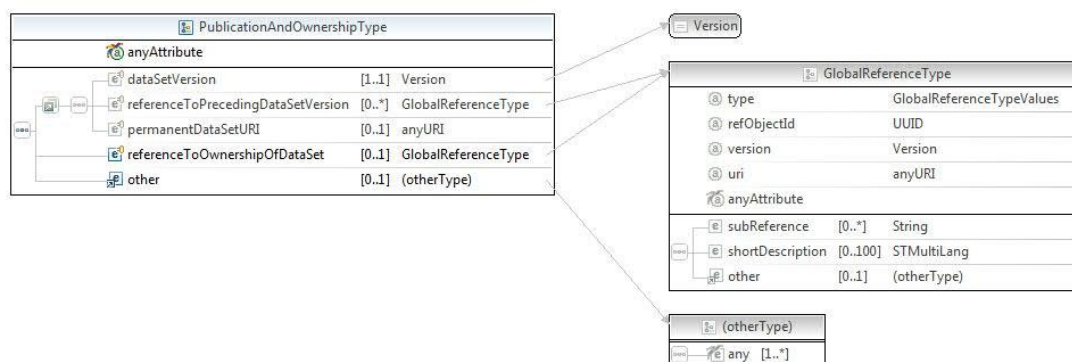


Figure 36: definition of PublicationAndOwnership type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
dataSetVersion		no corresponding field	no	
referenceToPrecedingDataSetVersion		no corresponding field	no	
permanentDataSetURI		no corresponding field	no	
referenceToOwnershipOfDataSet		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.2.4 Flow properties

The XML schema of the flow properties type contains one complex element that is defined by the **FlowPropertyType**. This complex element can occur any numbers of times and describes the used flow properties.

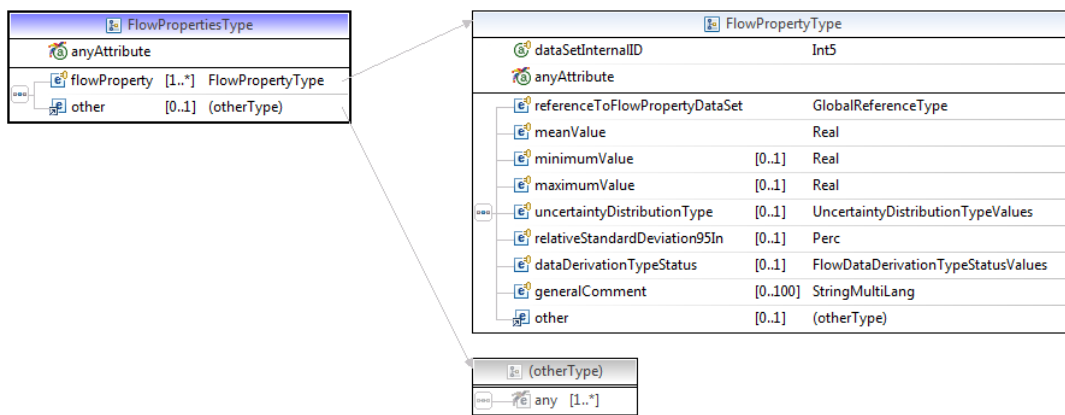


Figure 37: definition of ILCD FlowProperties type

2.2.4.1 Type: flowProperties/flowProperty

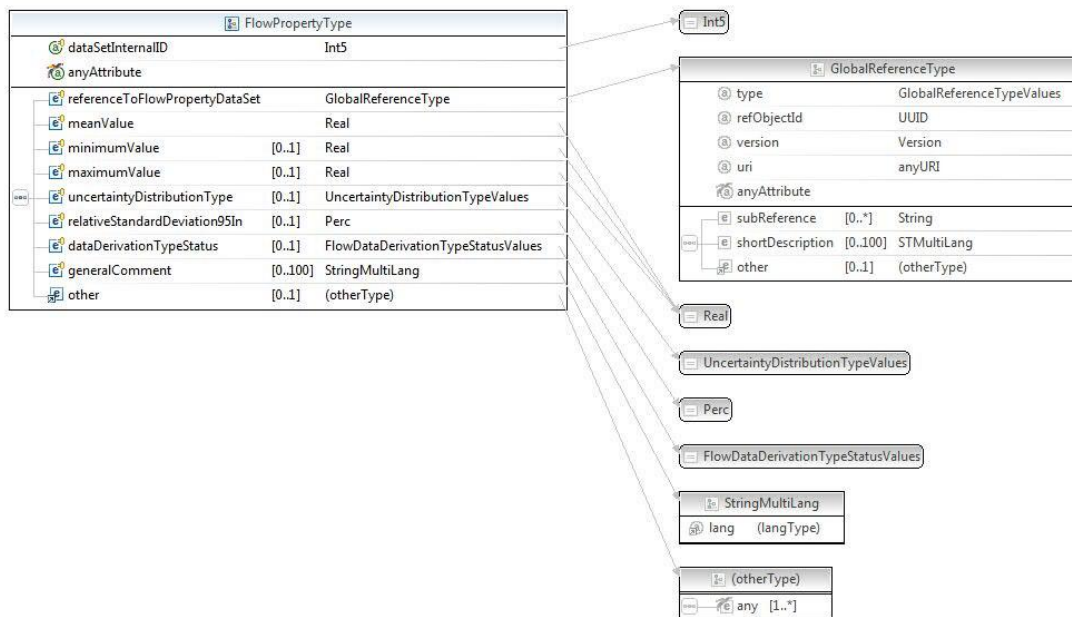


Figure 38: definition of ILCD FlowProperty type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
@dataSetInternalID		no corresponding field	no	
referenceToFlowPropertyDataSet	masterData/validIntermediateExchanges/@propertyId or	master data look up If the flow property exists in the ES2 master data, the ID is taken. If not a new	no	

	masterData/validElementaryExchanges/@propertyId	flow property with a new ID etc. has to be generated.		
meanValue		no corresponding field	no	
minimumValue		no corresponding field	no	
maximumValue		no corresponding field	no	
uncertaintyDistributionType		no corresponding field	no	
relativeStandardDeviation95In		no corresponding field	no	
dataDerivationTypeStatus		no corresponding field	no	
generalComment		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.3 Contact data set

The XML schema type of the contact dataset comprises one attribute and two complex elements. The complex elements are defined by the following data types (see figure 39);

- **ContactInformationType**: contains information about the dataset
- **AdministrativeInformationType**: contains information about the administrative informations about the contact dataset

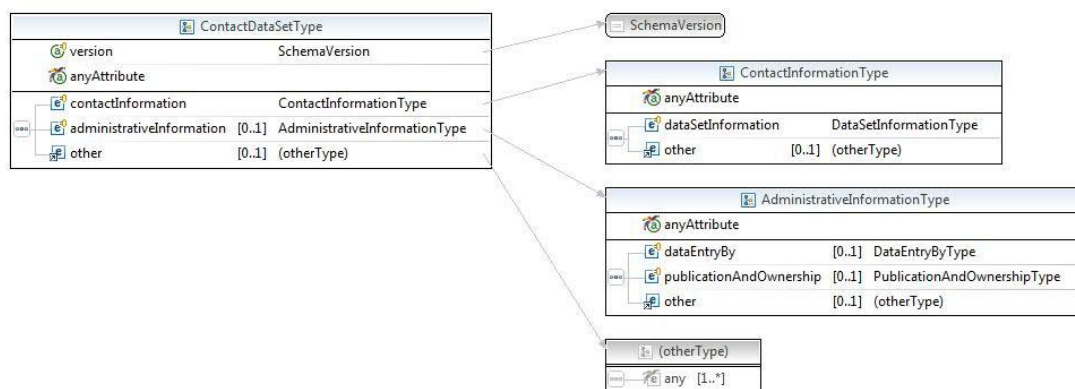


Figure 39: definition of ILCD ContactDataSet type

ILCD field	EcoSpold field	Comment	Nomenclature	Assessment
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			mapping?	
@version		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.3.1 Contact information

The XML schema type ContactInformationType contains one complex element that is defined by the **DataSetInformationType**. This data type contains information about the contact as name and address.

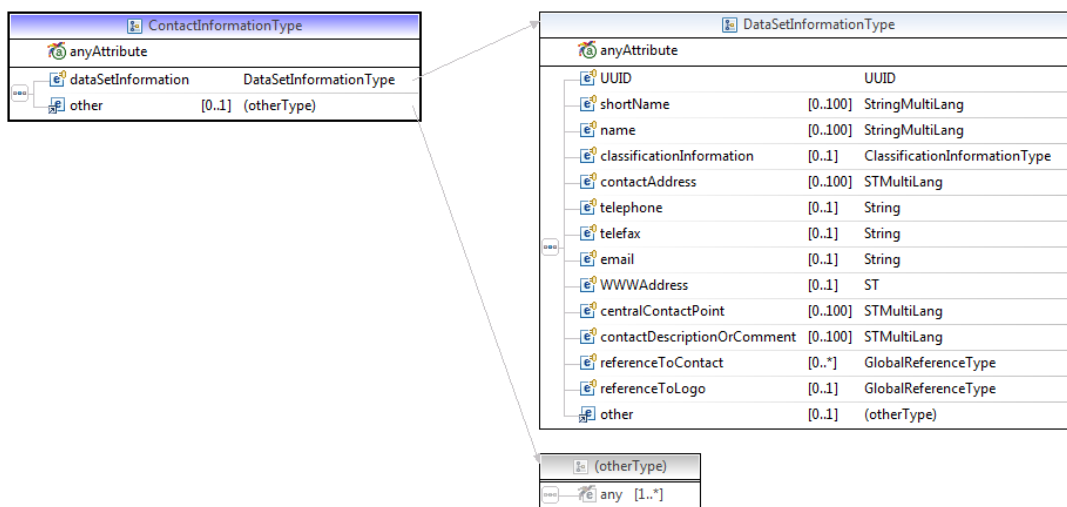


Figure 40: definition of ILCD ContactInformation type

2.3.1.1 Type: contactInformation/dataSetInformation

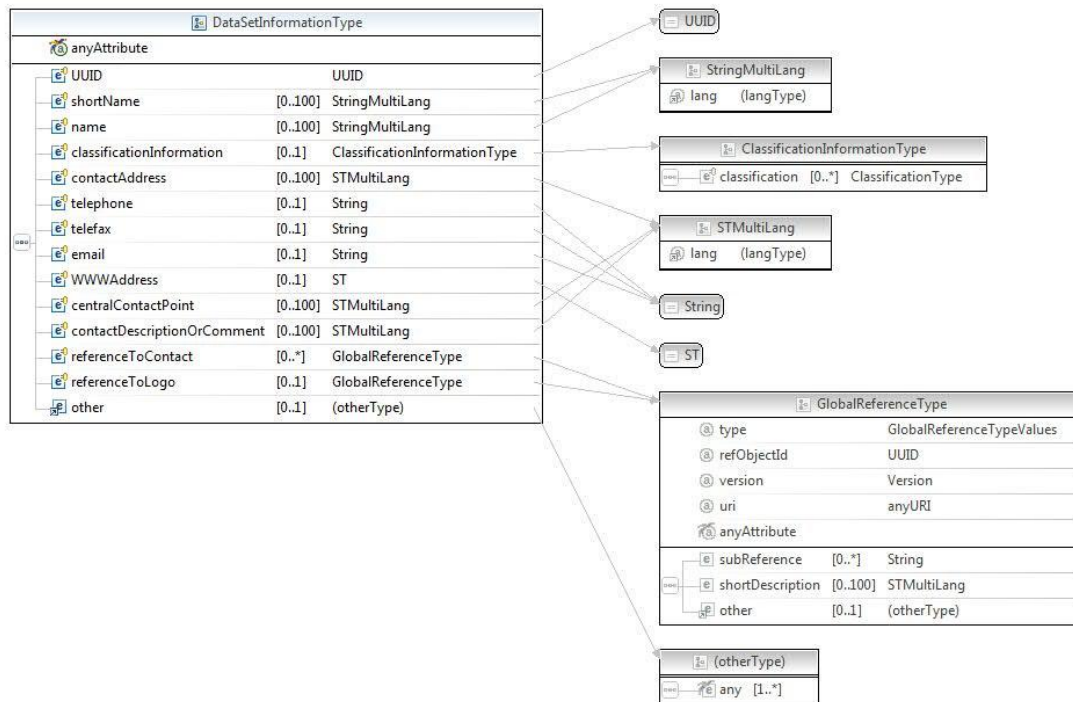


Figure 41: definition of ILCD DataSetInformation type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
UUID		no corresponding field	no	
shortName		no corresponding field	no	
name	Person/@name or Person/@organization Name	field transformation: There are two separate fields in ES2 for person name and organization name, in ILCD there is only one field for name, but the classification gives information about the kind of contact.	no	
classificationInformation		no corresponding field	no	
classification		no corresponding field	no	
@name		no corresponding field	no	
@classes		no corresponding field	no	
class		no corresponding field	no	
@level		no corresponding field But it is used to determine whether the name of the contact is a person or an organization.	no	

@classId		no corresponding field	no	
contactAddress	person/@address	o.k.	no	
telephone	person/@telephone	o.k.	no	
telefax	person/@telefax	o.k.	no	
email	person/@email	o.k.	no	
WWWAddress	person/@organization Website	o.k.	no	
centralContactPoint	person/@address	no corresponding field But this field can be used as alternative if the field 'contactAddress' is blank.	no	
contactDescriptionOrCom ment		no corresponding field	no	
referenceToContact		no corresponding field	no	
referenceToLogo		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.3.2 AdministrativeInformation

The AdministrativeInformationType of the contact dataset comprises two complex elements which are defined by the following data types (see also figure 42):

- **DataEntryBy:** contains information about the staff or entity that documented the generated dataset, entering the information into the database
- **PublicationAndOwnership:** provides information related to publication and version management of the dataset including copyright and access restrictions

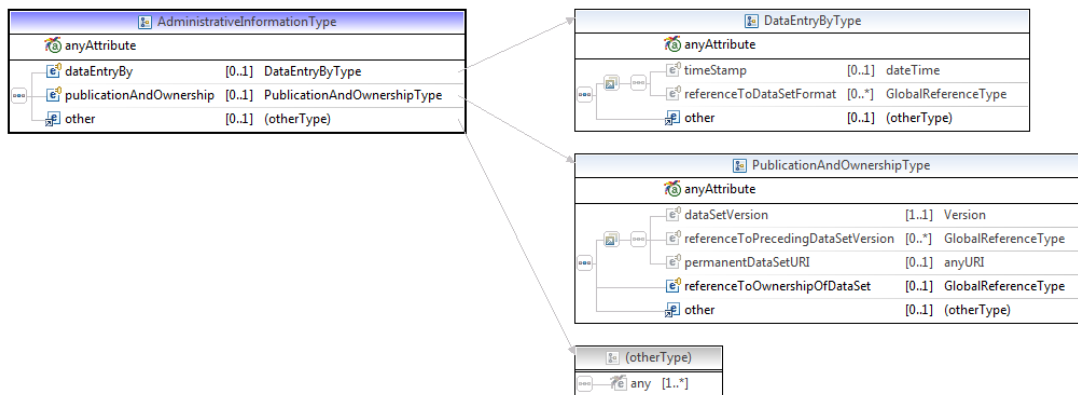


Figure 42: definition of ILCD AdministrativeInformation type

2.3.2.1 Type: administrativeInformation/dataEntryBy

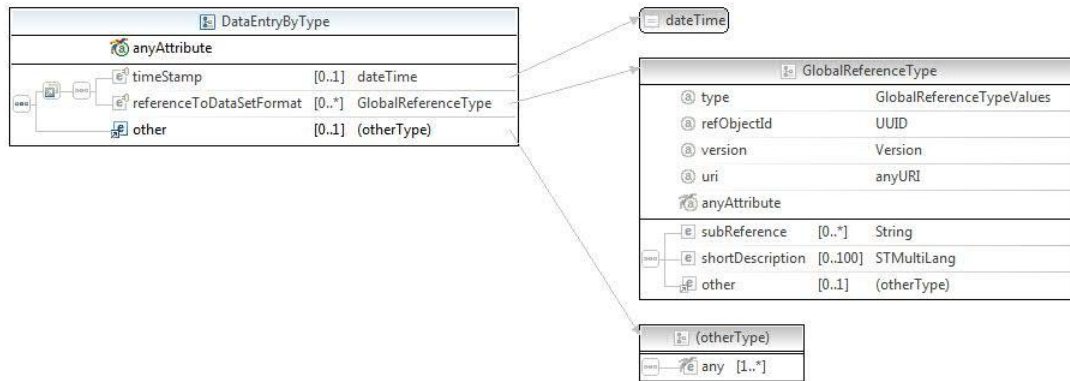


Figure 43: definition of ILCD DataEntryBy

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
timeStamp		no corresponding field	no	
referenceToDataSetFormat		no corresponding field	no	

2.3.2.2 Type: administrativeInformation/publicationAndOwnership

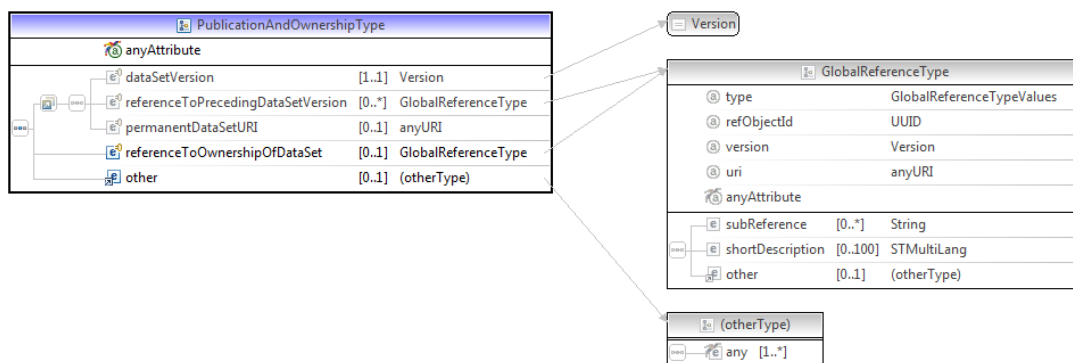


Figure 44: definition of ILCD PublicationAndOwnership type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
dataSetVersion		no corresponding field	no	

referenceToPrecedingDataSetVersion		no corresponding field	no	
permanentDataSetURI		no corresponding field	no	
referenceToOwnershipOfDataSet		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.4 Source data set

The XML schema type of the source data set contains one attribute and two complex elements. The elements are described by the following data types (see figure 45):

- **SourceInformationType**: contains information about the source dataset
- **AdministrativeInformationType**: provides information about the dataset management and administration

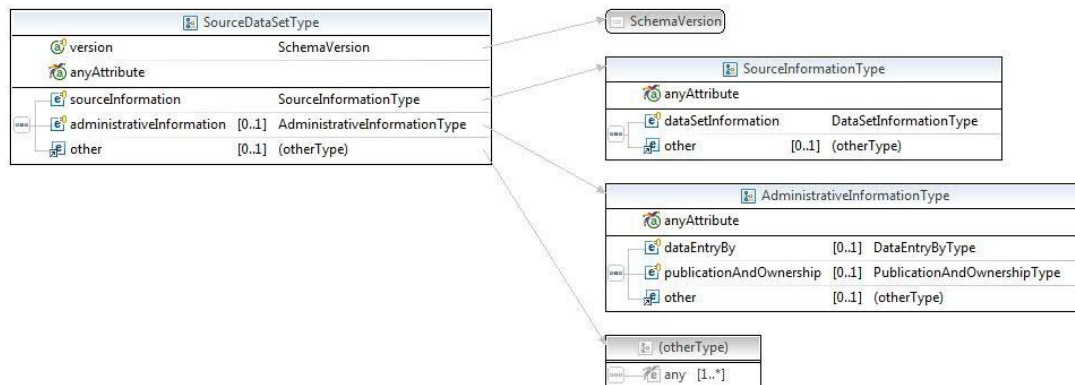


Figure 45: definition of ILCD SourceDataSet type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
@version		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.4.1 Source information

The SourceInformationType contains one complex element with the data type

DataSetInformationType. This element provides information about the source as name, citation and type.

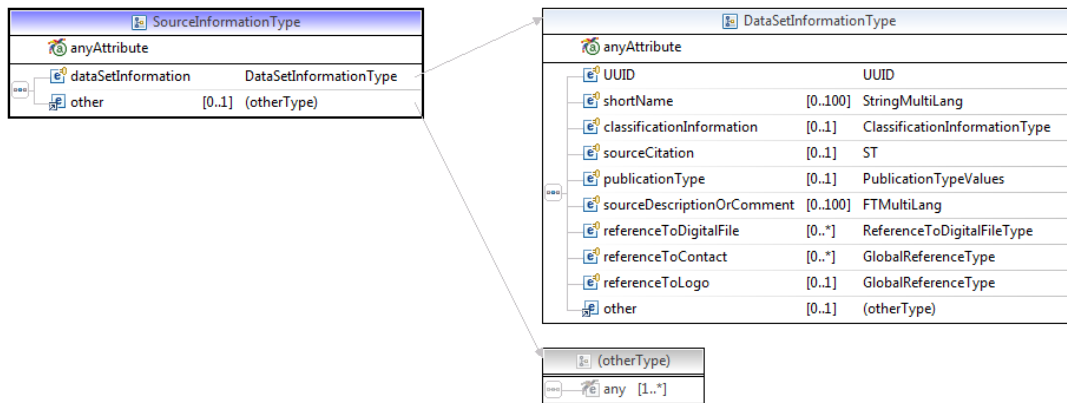


Figure 46: definition of ILCD SourceInformation type

2.4.1.1 Type: sourceInformation/dataSetInformation

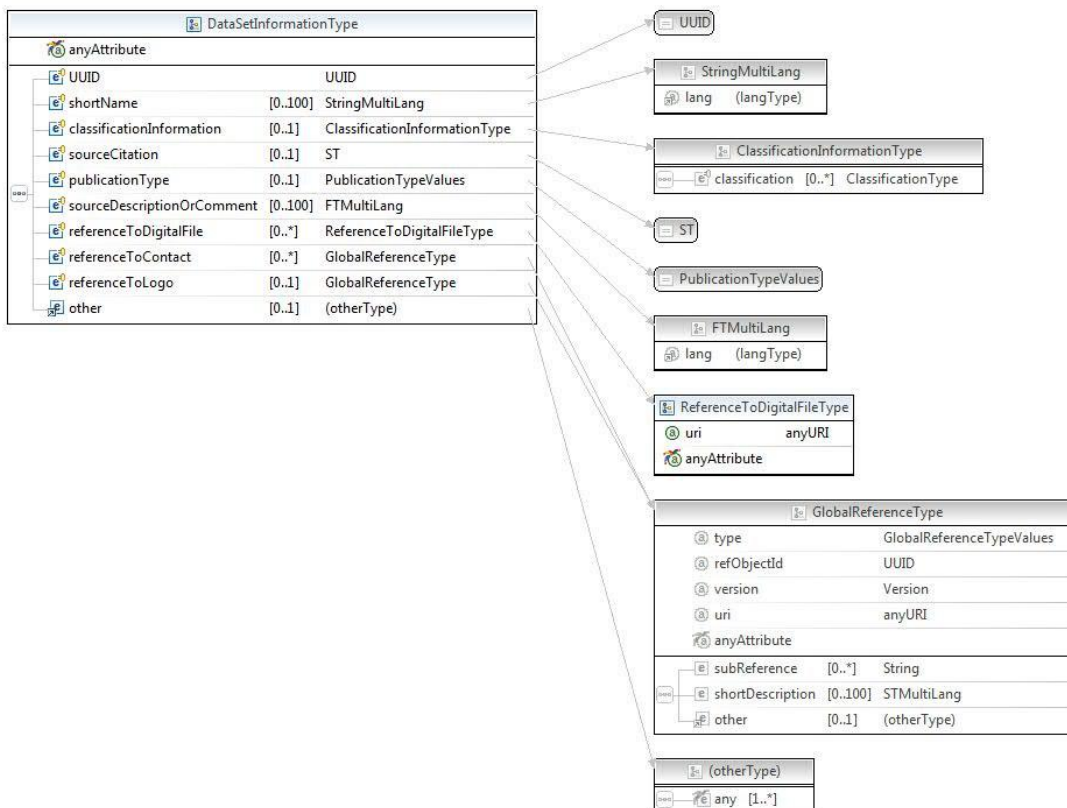


Figure 47: definition of ILCD DataSetInformation type

Field	EcoSpold	Comment	Nomenclature mapping?	Assessment
UUID		no corresponding field	no	
shortName	activityDescription/modellingAndValidation/source/@shortName	o.k.	no	
classificationInformation		no corresponding field	no	
classification		no corresponding field	no	
@name		no corresponding field	no	
@classes		no corresponding field	no	
class		no corresponding field	no	
@level		no corresponding field	no	
@classId		no corresponding field	no	
sourceCitation		no corresponding field	no	
publicationType	activityDescription/modellingAndValidation/source/@sourceType	enumeration mapping different enumerations: <ul style="list-style-type: none"> • “Undefined” => “0” (= undefined) • “Article in periodical” => “1” (= article) • “Chapter in anthology” => “2” (= chapters in anthology) • “Monograph” => “3” (= separate publication) • “Direct measurement” => “4” (= measurement on site) • “Oral communication” => “5” (= oral communication) • “Personal written communication” => “6” (= personal written communication) • “Questionnaire” => “7” (= questionnaires) • “Software or database” => “0” (= undefined) • “Other unpublished and grey literature” => “0” (= undefined) 	yes	
sourceDescriptionOrComment	activityDescription/modellingAndValidation/source/comment	o.k.	no	
referenceToDigitalFile		no corresponding field	no	
@uri		no corresponding field	no	
referenceToContact		no corresponding field	no	

referenceToLogo		no corresponding field	no	
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No mandatory fields in EcoSpold in the corresponding section.

2.4.2 Administrative information

The XML schema type of the administrative information comprises two complex elements. These elements are defined by the following data types (see also figure 48):

- **DataEntryByType:** contains information about the staff or entity that documented the generated dataset, entering the information into the database
- **PublicationAndOwnershipType:** contains information related to publication and version management of the dataset including copyright and access restrictions

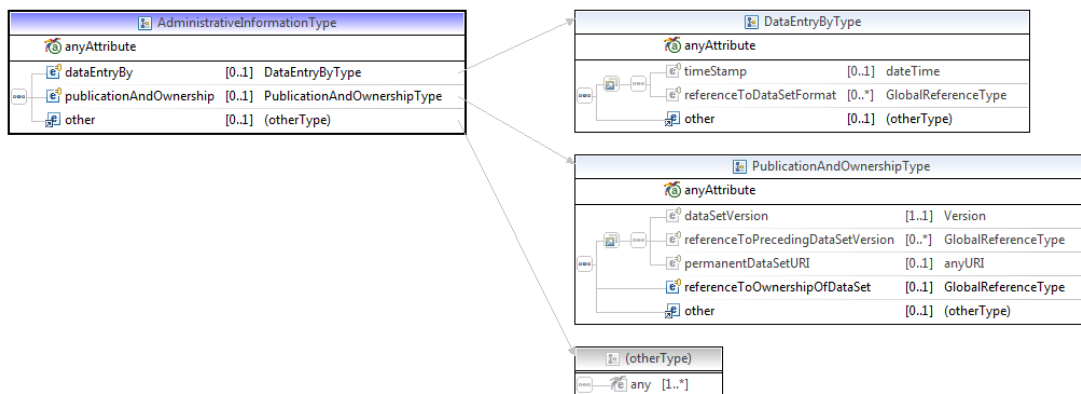


Figure 48: definition of ILCD AdministrativeInformation type

2.4.2.1 Type: administrativeInformation/dataEntryBy

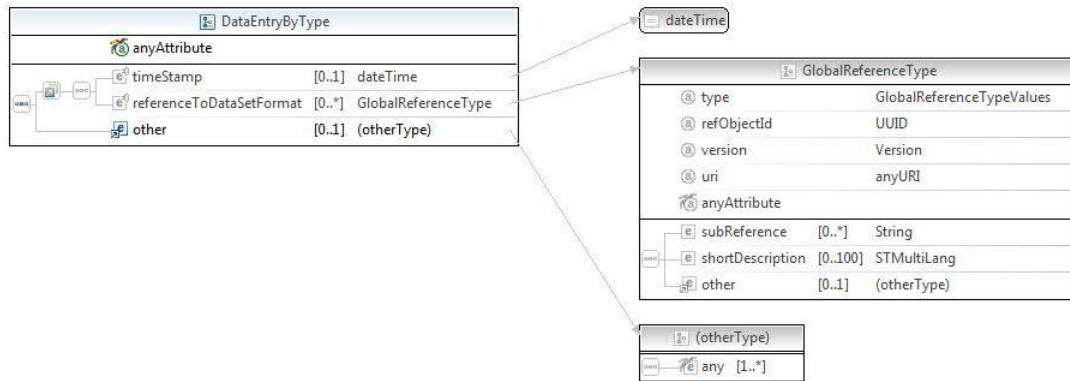


Figure 49: definition of ILCD DataEntryBy type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
timeStamp		no corresponding field	no	
referenceToDataSetFormat		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.4.2.2 Type: administrativeInformation/publicationAndOwnership

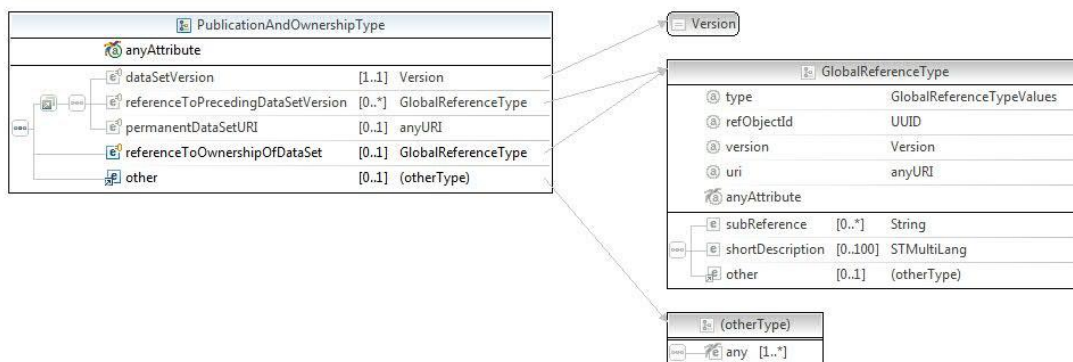


Figure 50: definition of ILCD PublicationAndOwnership type

ILCD field	EcoSpold field	Comment	Nomenclature mapping?	Assessment
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dataSetVersion		no corresponding field	no	
referenceToPrecedingDataSetVersion		no corresponding field	no	
permanentDataSetURI		no corresponding field	no	
referenceToOwnershipOfDataSet		no corresponding field	no	

No mandatory fields in EcoSpold in the corresponding section.

2.4.3 Mapping of flow properties

The mapping of the flow properties from ILCD to EcoSpold is relatively unproblematic. The only major problem is that the ILCD flow property dataset does not contain the unit, but only the reference of the unit group data set that contains the unit. Thus, to get the unit you have to jump in the unit group dataset.

Due to the vast size of the flow property dataset and the unit group data set the conversation is considered from the other direction “EcoSpold02 to ILCD 1.1”.

EcoSpold field	ILCD field	Comment	Nomenclature mapping?	Assessment
validProperties/property/@id	flowPropertyDataSet/datasetInformation/UUID	master data look up	no	
validProperties/property/@unit	unitGroupDataSet/units/unit/name		no	
validProperties/property/name	flowPropertyDataSet/datasetInformation/name	master data creation for unknown flow properties	no	
validProperties/property/comment	flowPropertyDataSet/datasetInformation/generalComment	o.k.	no	

2.4.4 Mapping of units

The mapping of the units is quite simple. Due to the vast size of the unit group data set the conversation is also considered from the other direction “EcoSpold02 to ILCD 1.1”. For the unit assignment are only two fields necessary.

EcoSpold field	ILCD field	Comment	Nomenclature mapping?	Assessment
validUnits/unit/@name	unitGroupDataSet/units/unit/name	master data creation for unknown units	no	

validUnits/unit/@comment	unitGroupDataSet/units/unit/generalComment	o.k.	no	
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Mandatory fields in EcoSpold02

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
File attributes				

If uncertainty information is mapped, the following field is mandatory in EcoSpold02:

Element	Field	Is mapped?	Is mandatory in ILCD?	Default value
Uncertainty	@isPedigreeUncertaintyIncluded	no		default value default value for required field '@isPedigreeUncertaintyIncluded': false

The LCIA Method data set is not mentioned, because of irrelevance. It is not used yet and cannot be mapped to the EcoSpold02 format.

Optional fields in EcoSpold02, which cannot be mapped, but filled with default values:

Element	Field	Default entry
Activity description	@energyValues	default value default value for field '@energyValues': "0"
Flow data/Exchanges	@isCalculatedAmount	field transformation <ul style="list-style-type: none"> • true, if the resulting amount in ILCD refers to a mathematical relation • false, if not
Administrative information/Data entry by	@qualityNetwork	default value default value for field '@qualityNetwork': "ILCD"
File Attributes	@fileGenerator	default value default value for field '@fileGenerator': "openLCA converter"

3 References

[1] <http://greendeltatc.com/openLCA-Format-Konverter.117.0.html>

[2] <http://openlca.org/Converter.8.0.html>

[3] ILCD 1.1 schema documentation

[4] EcoSpold02 beta 4 schema documentation

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