



# Chapter 3 Appendix 1

## SPOLD Mapping Questionnaire

The SPOLD Mapping Questionnaire appears at the end of this appendix (Table B1-3).

### Compatibility of LCA Software with SPOLD Format

#### Introduction

LCA software developers can mention additional fields that will contain information they want in an exchange format. It must be clear to all participants that the SPOLD format is an exchange format of 'Unit Process'<sup>1</sup> (sometimes called Life Cycle Inventory). It is not intended to exchange Life Cycle Assessment project managed by LCA software (which includes several inter-connected Unit Processes, Impact Assessment methods, etc.).

#### How to use the SPOLD mapping questionnaire

The mapping questionnaire, in an Excel spreadsheet, lists all the fields of the SPOLD 97 format (as specified in the document entitled 'SPOLD file format for LCI data exchange (97/10/08)').

A general section should help to identify the relevant information for a field by field analysis. The

second section deals with a field by field analysis. For each field, the software developers should tell (in 'Corresponding Field' column) if its software is able to manage the data. If issues are identified, a color and a letter (explained below) codification has been defined to have a rapid information about the level of compatibility between a SPOLD and the software.

#### General section

##### *Nomenclatures*

All the nomenclatures used in the software should be named and listed.

##### *Hierarchies*

All the hierarchies of entities that are used in the software should be named and listed.

##### *Note*

The format of the number is not an issue at this level of the work. It is up to the import routine to read any number format (1000.05, 1.000,05, 1.005e3, etc.) or the SPOLD format to define the format number in any field or field by field.

#### Field by field issues

##### *Issues and codification*

A color codification has been set to identify the field issue in Table B1-1.

<sup>1</sup> According to ISO 14040:1997(E), in 3.19

<sup>2</sup> At the time this document was written, the new format (named SPOLD 99) was not yet released. Since the conversion from SPOLD 97 to SPOLD 99 is straightforward, the work done here will be valid for SPOLD 99.

Table B1-1 Issue type and color codification

Color	Issue
No color	An equivalent field exist in the software and can be exported without treatment (the conversion in export/import should be straightforward).
Blue	An equivalent field will be added in the next version of the software (by next version is meant a software should be released first semester of 1999).
Red	The SPOLD field is problematic: the information exists in the software, but the structure or semantic is different.
Yellow	Information is not present in the software.
Green	Some information of interest stored in the software apparently cannot be exported in the SPOLD format; the corresponding fields must be added. This field will be named and added at the end of the list by LCA software developers.

Table B1-2 Issue case and letter codification

Code	Issue Case	Example
a	No issue. The SPOLD field can be completely equivalent to one field in the software (no color).	
b	The SPOLD field can be equivalent to one field in the software, but ...  (Whether these issues will be classified as Blue, Red, or Green depends on the stand taken by the software developer. Note that the issues are not mutually exclusive. For example, you may have a field that is smaller [bb] and has an incompatible nomenclature [bf].)	
ba	The SPOLD field is larger than the equivalent field in the software (which may cause import loss or overflow),	
bb	The SPOLD field is smaller than the equivalent field in the software (which demands an export routine for handling oversize contents).	
bc	The SPOLD format allows multiple occurrences, where the software allows only one occurrence (which may cause import loss or overflow).	
bd	The SPOLD format does not allow multiple occurrences, where the software does allow multiple occurrences (which demands an export routine for additional fields).	
be	Use a different format from the equivalent field in the software (e.g., require numeral entry instead of a string).	
bf	The SPOLD field uses a nomenclature that is not compatible to the one used in the software (i.e., not possible to correct by the use of a correspondence table or a similar simple heuristics).	
bg	The SPOLD field refers to a concept that is stored in a hierarchy in the software.	For instance, in several software, the unit processes are stored in a hierarchies.
c	The SPOLD field does not exist in the software (Yellow or Blue).	
d	The SPOLD field corresponds to several fields in the software (No color if the possible export problem can be solved by heuristics, else Blue, Red or Green).	
e	The SPOLD field corresponds to part of the information in one field in the software (No color if the possible import problem can be solved by heuristics, else Blue, Red or Green).	

In addition to the color, a letter representative of the kind of issue is added. For some fields, several of the cases listed in Table B1-2 can fit. In such situation, put all the cases that fit.

### **Possible Solutions**

For your information, the list below identifies possible solutions to the issues listed in Table B1-2:

- Heuristics can be made to achieve the aggregation by using the field string. For instance, in TEAM, the article name tells in which Area (InputFromNatureResources, OutputToNatureAir, etc.) the article can be input.

- Heuristics can be made to achieve the split by using other fields.
- User intervention is necessary for import.
- User intervention is necessary for export.

### **Acknowledgments**

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Table B1-3 SPOLD mapping questionnaire

<b>General analysis</b>	<b>Name</b>	<b>Comment</b>
List of nomenclatures		
List of hierarchies		
<b>Field by field analysis</b>		
<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
DataSetInformation		
200	IndexNumber	
201	Type	
202	Version	
203	EnergyValues	
204	Timestamp	
DataEntryBy		
301	CompanyCode	
302	Name	
303	Address	
304	Telephone	
305	Telefax	
306	Email	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
ReferenceFunction		
400	DataSetRelatesToProduct	
401	Name	
402	IncludedProcesses	
403	Unit	
404	Amount	
501	StatisticalClassification	
502	CASNumber	
503	LocalClassification	
TimePeriod		
601	StartDate	
602	EndDate	
603	DataValidForEntirePeriod	
604	WinterPeriodOnly	
605	SummerPeriodOnly	
607	SpecificDayText	
609	SpecificTimeOfDayText	
611	OtherPeriodText	
Geography		
662	CountryCodes	
663	Text	
Technology		
692	Text	
Representativeness		
722	Percent	
723	Text	
DataGeneratorAndPublication		
751	Name	
752	Address	
753	Telephone	
754	Telefax	
755	Email	
756	DataPublishedIn	
757	ReferenceToPublishedSource	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
PrimarySources		
801	LineNumber	
802	SourceType	
803	Text	
SecondarySources		
1000	LineNumber	
1001	SourceType	
1002	FirstAuthor	
1003	AdditionalAuthors	
1004	Year	
1005	Title	
1006	PageNumbers	
1007	NameOfEditors	
1008	TitleOfAnthology	
1009	PlaceOfPublication	
1010	Publisher	
1011	Journal	
1012	VolumeNo	
1013	IssueNo	
SubsystemsCentralProcess		
1201	ReferenceCode	
1202	Name	
1203	GeographicalLocation	
1204	DataAvailability	
SubsystemsDelivering		
1401	ReferenceCode	
1402	NameOfFlow	
1403	Unit	
1404	Mean	
1405	UncertaintyType	
1406	CoefficientOfVariance	
1407	GeographicalLocation	
1408	TransportType	
1409	DataAvailability	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
SubsystemsReceiving		
1601	ReferenceCode	
1602	NameOfFlow	
1603	Unit	
1604	Mean	
1605	UncertaintyType	
1606	CoefficientOfVariance	
1607	GeographicalLocation	
1608	TransportType	
1609	DataAvailability	
CutOffRules		
1801	PackagingDegreeOfCutOff	
1802	PackagingCriteria	
1803	PackagingThreshold	
1804	PackagingRationale	
1805	PackagingReferenceToSource	
1811	CleaningDegreeOfCutOff	
1812	CleaningCriteria	
1813	CleaningThreshold	
1814	CleaningRationale	
1815	CleaningReferenceToSource	
1821	MarketingDegreeOfCutOff	
1822	MarketingCriteria	
1823	MarketingThreshold	
1824	MarketingRationale	
1825	MarketingReferenceToSource	
1831	AdministrationDegreeOfCutOff	
1832	AdministrationCriteria	
1833	AdministrationThreshold	
1834	AdministrationRationale	
1835	AdministrationReferenceToSource	
1841	ResearchAndDevelopmentDegreeOf CutOff	
1842	ResearchAndDevelopmentCriteria	
1843	ResearchAndDevelopmentThreshold	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
1844	ResearchAndDevelopmentRationale	
1845	ResearchAndDevelopmentReferenceToSource	
1851	LaboratoryFacilitiesDegreeOfCutOff	
1852	LaboratoryFacilitiesCriteria	
1853	LaboratoryFacilitiesThreshold	
1854	LaboratoryFacilitiesRationale	
1855	LaboratoryFacilitiesReferenceToSource	
1861	PersonnelHeatingDegreeOfCutOff	
1862	PersonnelHeatingCriteria	
1863	PersonnelHeatingThreshold	
1864	PersonnelHeatingRationaleForCutOff	
1865	PersonnelHeatingReferenceToSource	
1871	PersonnelLightingDegreeOfCutOff	
1872	PersonnelLightingCriteria	
1873	PersonnelLightingThreshold	
1874	PersonnelLightingRationale	
1875	PersonnelLightingReferenceToSource	
1881	PersonnelWorkingClothesDegreeOfCutOff	
1882	PersonnelWorkingClothesCriteria	
1883	PersonnelWorkingClothesThreshold	
1884	PersonnelWorkingClothesRationale	
1885	PersonnelWorkingClothesReferenceToSource	
1891	PersonnelTransportDegreeOfCutOff	
1892	PersonnelTransportCriteria	
1893	PersonnelTransportThreshold	
1894	PersonnelTransportRationale	
1895	PersonnelTransportReferenceToSource	
1901	PersonnelCanteenDegreeOfCutOff	
1902	PersonnelCanteenCriteria	
1903	PersonnelCanteenThreshold	
1904	PersonnelCanteenRationale	
1905	PersonnelCanteenReferenceToSource	
1911	PersonnelToiletsDegreeOfCutOff	
1912	PersonnelToiletsCriteria	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
1913	PersonnelToiletsThreshold	
1914	PersonnelToiletsRationale	
1915	PersonnelToiletsReferenceToSource	
1921	MachineryDegreeOfCutOff	
1922	MachineryCriteria	
1923	MachineryThreshold	
1924	MachineryRationale	
1925	MachineryReferenceToSource	
1931	MaintenanceDegreeOfCutOff	
1932	MaintenanceCriteria	
1933	MaintenanceThreshold	
1934	MaintenanceRationale	
1935	MaintenanceReferenceToSource	
1941	AncillaryMaterialsDegreeOfCutOff	
1942	AncillaryMaterialsCriteria	
1943	AncillaryMaterialsThreshold	
1944	AncillaryMaterialsRationale	
1945	AncillaryMaterialsReferenceToSource	
1951	OtherMaterialInputsDegreeOfCutOff	
1952	OtherMaterialInputsCriteria	
1953	OtherMaterialInputsThreshold	
1954	OtherMaterialInputsRationale	
1955	OtherMaterialInputsReferenceToSource	
1961	WasteTreatmentDegreeOfCutOff	
1962	WasteTreatmentCriteria	
1963	WasteTreatmentThreshold	
1964	WasteTreatmentRationale	
1965	WasteTreatmentReferenceToSource	
1971	TransportsDegreeOfCutOff	
1972	TransportsCriteria	
1972	TransportsThreshold	
1973	TransportsRationale	
1974	TransportsReferenceToSource	
1981	EnergyInputsDegreeOfCutOff	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
1982	EnergyInputsCriteria	
1983	EnergyInputsThreshold	
1984	EnergyInputsRationale	
1985	EnergyInputsReferenceToSource	
<b>Screenings</b>		
2001	Performed	
2003	MethodForToxicSubstances	
2004	ToxicSubstancesText	
2005	OtherTopicText	
2006	OtherTopicMethod	
<b>AvoidedSystems</b>		
2200	ReferenceToCo-product	
2201	ReferenceCode	
2202	Name	
2203	Unit	
2204	Mean	
2205	UncertaintyType	
2206	CoefficientOfVariance	
2207	GeographyLocation	
2208	TransportType	
2209	DataAvailability	
2210	Explanations	
2211	ReferenceToSource	
<b>Allocations</b>		
2401	ReferenceToCoProduct	
2403	AllocationMethod	
2404	Fraction	
2405	UncertaintyType	
2406	CoefficientOfVariance	
2407	Explanations	
2408	ReferenceToSource	
<b>EnergyModels</b>		
2601	ID	
2602	Name	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
2603	SystemType	
2604	PrimaryEnergyUnit	
2605	PrimaryEnergyMean	
2606	EnergyEfficiency	
2607	ReferenceToSource	
TransportModels		
2801	ID	
2802	Name	
2803	TotalPrimaryEnergyUnit	
2804	TotalPrimaryEnergyMean	
2805	EnergyPerMgkmUnit	
2806	EnergyPerMgkmMean	
2807	ReferenceToSource	
WasteModels		
3001	ID	
3002	Name	
3003	WasteEnteringSystemUnit	
3004	WasteEnteringSystemMean	
3005	ProductFromSystemUnit	
3006	ProductFromSystemMean	
3007	LocationOfDestination	
3008	AllocationMethod	
3009	OtherAllocationMethodText	
3010	ReferenceToSource	
Other		
3201	AssumptionsNotMentionedElsewhere	
3202	InformationNotMentionedElsewhere	
3203	FieldOverflow	
InputsFromNatureResources		
3401	ID	
3402	Name	
3403	LocationOfOrigin	
3404	TransportType	
3405	EnvironmentalConditions	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
3406	MassUnit	
3407	MassMeanValue	
3408	UncertaintyType	
3409	CoefficientOfVariance	
3410	EnergyUnit	
3411	EnergyMeanValue	
3412	CollectionMethod	
3413	DataTreatment	
3415	ReferenceToSource	
3420	AdjustmentsTimePeriodStartDate	
3421	AdjustmentsTimePeriodEndDate	
3422	AdjustmentsGeography	
3423	AdjustmentsTechnology	
3424	AdjustmentsRepresentativenessPercent	
3425	AdjustmentsRepresentativenessText	
3426	AdjustmentsAllocationsReferenceToCoProduct	
3427	AdjustmentsAllocationsFraction	
InputsFromTechnosphereMaterials/Fuels		
3601	ID	
3602	Name	
3603	LocationOfOrigin	
3604	TransportType	
3605	Unit	
3606	Mean Value	
3607	UncertaintyType	
3608	CoefficientOfVariance	
3609	EnergyUnit	
3610	EnergyMeanValue	
3611	CollectionMethod	
3612	DataTreatment	
3615	ReferenceToSource	
3620	AdjustmentsTimePeriodStartDate	
3621	AdjustmentsTimePeriodEndDate	
3622	AdjustmentsGeography	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
3623	AdjustmentsTechnology	
3624	AdjustmentsRepresentativenessPercent	
3625	AdjustmentsRepresentativenessText	
3626	AdjustmentsAllocationsReferenceToCoProduct	
3627	AdjustmentsAllocationsFraction	
InputsFromTechnosphereElectricity/Heat		
3801	ID	
3802	Name	
3803	LocationOfOrigin	
3804	TransportType	
3805	UncertaintyType	
3806	CoefficientOfVariance	
3807	EnergyUnit	
3808	EnergyMeanValue	
3809	CollectionMethod	
3810	DataTreatment	
3815	ReferenceToSource	
3820	AdjustmentsTimePeriodStartDate	
3821	AdjustmentsTimePeriodEndDate	
3822	AdjustmentsGeography	
3823	AdjustmentsTechnology	
3824	AdjustmentsRepresentativenessPercent	
3825	AdjustmentsRepresentativenessText	
3826	AdjustmentsAllocationsReferenceToCoProduct	
3827	AdjustmentsAllocationsFraction	
OutputsToTechnosphereProducts		
4001	ID	
4002	Name	
4003	LocationOfDestination	
4004	TransportType	
4005	Unit	
4006	MeanValue	
4007	UncertaintyType	
4008	CoefficientOfVariance	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
4009	EnergyUnit	
4010	EnergyMeanValue	
4011	CollectionMethod	
4012	DataTreatment	
4013	ReferenceToSource	
4014	ProductType	
4016	SplitOffIsAfter	
4017	SplitOffIsBefore	
4020	AdjustmentsTimePeriodStartDate	
4021	AdjustmentsTimePeriodEndDate	
4022	AdjustmentsGeography	
4023	AdjustmentsTechnology	
4024	AdjustmentsRepresentativenessPercent	
4025	AdjustmentsRepresentativenessText	
4026	AdjustmentsAllocationsReferenceToCoProduct	
4027	AdjustmentsAllocationsFraction	
<b>OutputsToTechnosphereWaste</b>		
4201	ID	
4202	Name	
4203	LocationOfDestination	
4204	TransportType	
4205	MassUnit	
4206	MeanMeanValue	
4207	UncertaintyType	
4208	CoefficientOfVariance	
4209	EnergyUnit	
4210	EnergyMeanValue	
4211	CollectionMethod	
4212	DataTreatment	
4215	ReferenceToSource	
4220	AdjustmentsTimePeriodStartDate	
4221	AdjustmentsTimePeriodEndDate	
4222	AdjustmentsGeography	
4223	AdjustmentsTechnology	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
4224	AdjustmentsRepresentativenessPercent	
4225	AdjustmentsRepresentativenessText	
4226	AdjustmentsAllocationsReferenceToCoProduct	
4227	AdjustmentsAllocationsFraction	
OutputsToNatureAir		
4401	ID	
4402	Name	
4403	LocationOfDestination	
4404	TransportType	
4405	EnvironmentalConditions	
4406	MassUnit	
4407	MassMeanValue	
4408	UncertaintyType	
4409	CoefficientOfVariance	
4410	EnergyUnit	
4411	EnergyMean	
4412	CollectionMethod	
4413	DataTreatment	
4415	ReferenceToSource	
4420	AdjustmentsTimePeriodStartDate	
4421	AdjustmentsTimePeriodEndDate	
4422	AdjustmentsGeography	
4423	AdjustmentsTechnology	
4424	AdjustmentsRepresentativenessPercent	
4425	AdjustmentsRepresentativenessText	
4426	AdjustmentsAllocationsReferenceToCoProduct	
4427	AdjustmentsAllocationsFraction	
OutputsToNatureWater		
4601	ID	
4602	Name	
4603	LocationOfDestination	
4604	TransportType	
4605	EnvironmentalConditions	
4606	MassUnit	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
4607	MassMeanValue	
4608	UncertaintyType	
4609	CoefficientOfVariance	
4610	EnergyUnit	
4611	EnergyMean	
4612	CollectionMethod	
4613	DataTreatment	
4615	ReferenceToSource	
4620	AdjustmentsTimePeriodStartDate	
4621	AdjustmentsTimePeriodEndDate	
4622	AdjustmentsGeography	
4623	AdjustmentsTechnology	
4624	AdjustmentsRepresentativenessPercent	
4625	AdjustmentsRepresentativenessText	
4626	AdjustmentsAllocationsReferenceToCoProduct	
4627	AdjustmentsAllocationsFraction	
<b>OutputsToNatureSoil</b>		
4801	ID	
4802	Name	
4803	LocationOfDestination	
4804	TransportType	
4805	EnvironmentalConditions	
4806	MassUnit	
4807	MassMeanValue	
4808	UncertaintyType	
4809	CoefficientOfVariance	
4810	EnergyUnit	
4811	EnergyMean	
4812	CollectionMethod	
4813	DataTreatment	
4815	ReferenceToSource	
4820	AdjustmentsTimePeriodStartDate	
4821	AdjustmentsTimePeriodEndDate	
4822	AdjustmentsGeography	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
4823	AdjustmentsTechnology	
4824	AdjustmentsRepresentativenessPercent	
4825	AdjustmentsRepresentativenessText	
4826	AdjustmentsAllocationsReferenceToCoProduct	
4827	AdjustmentsAllocationsFraction	
OutputsToNatureNonMaterial		
5001	ID	
5002	Name	
5003	LocationOfDestination	
5004	TransportType	
5005	EnvironmentalConditions	
5006	UncertaintyType	
5007	CoefficientOfVariance	
5008	EnergyUnit	
5009	EnergyMean	
5010	CollectionMethod	
5011	DataTreatment	
5015	ReferenceToSource	
5020	AdjustmentsTimePeriodStartDate	
5021	AdjustmentsTimePeriodEndDate	
5022	AdjustmentsGeography	
5023	AdjustmentsTechnology	
5024	AdjustmentsRepresentativenessPercent	
5025	AdjustmentsRepresentativenessText	
5026	AdjustmentsAllocationsReferenceToCoProduct	
5027	AdjustmentsAllocationsFraction	
OtherInterventions		
5201	ID	
5202	Name	
5203	EnvironmentalConditions	
5204	Unit	
5205	MeanValue	
5206	UncertaintyType	
5207	CoefficientOfVariance	

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Table B1-3 continued

<b>SPOLD ID</b>	<b>Field name</b>	<b>Corresponding field</b>
5208	CollectionMethod	
5209	DataTreatment	
5215	ReferenceToSource	
5220	AdjustmentsTimePeriodStartDate	
5221	AdjustmentsTimePeriodEndDate	
5222	AdjustmentsGeography	
5223	AdjustmentsTechnology	
5224	AdjustmentsRepresentativenessPercent	
5225	AdjustmentsRepresentativenessText	
5226	AdjustmentsAllocationsReferenceToCoProduct	
5227	AdjustmentsAllocationsFraction	
Validations		
5602	OnSiteDetails	
5603	OnSiteValidator	
5605	RecalculationDetails	
5606	RecalculationValidator	
5608	MassBalanceElements	
5609	MassBalanceDetails	
5610	MassBalanceValidator	
5612	CrossCheckDetails	
5613	CrossCheckValidator	
5615	ProofReadingDetails	
5616	ProofReadingValidator	
5618	OtherText	
5619	OtherDetails	
5620	OtherValidator	
Additional Fields	Added by LCA Software Developers	