## Technical Validation of Datasets for the ÖKOBAUDAT Database

## Validation Tool

A standalone, cross-platform validation tool with a graphical user interface (GUI) has been developed that offers facilities for technical validation of datasets.

It is available for download in both source and binary form at

https://bitbucket.org/okusche/ilcdvalidationtool/

The tool is intuitive enough and doesn't need a written manual.

## General Use

The user interface is divided into three parts: one named "File Selection" where the files and/or archives to be validated can be added, the "Validation Aspects" part where the aspects to be validated can be selected, and the "Validation Messages" part where a detailed message will be displayed for each validation event.

ile Selection				Va	lidation Aspects	
Filename	Path		Validation Progres	s	Default	Profile
	1				Archive Structure	Default ILCD
	1	Drop files or folders here			Categories	
			i i		Links	
			1		Orphaned Items	
					Reference Flows	
					XML Schemas	
+ - 🔜				🕨 🗶 🛛	XSLT Stylesheet	
	Filename	UUID	Dataset Type Message			
Aspect Name		0000	balaoot ()po			
Aspect Name						
Aspect Name						
Aspect Name						
Aspect Name						
Aspect Name						
Aspect Name						
Aspect Name						

Figure 1: ILCD Validation Tool

ZIP archives, folders or single XML files can all be added via drag-and-drop to the "File Selection" component. Alternatively, there are buttons labelled "+" and "-" that can be used to choose files or folders from the filesystem or remove items from the list, respectively. Another button is available to clear the entire list (see Figure 1).

In order to validate against the specific format extensions and categories of the ÖKOBAUDAT, a corresponding profile will have to be installed. It can be downloaded from the ÖKOBAUDAT website along with this document.

To install the profile, first enable the Profiles selector by unchecking the "Default" validation aspect as shown in Figure 2. Then, in the Profile selector, choose "Add/Update Profile..." to show the Preferences dialog (Figure 3).

 Validation Aspects

 Default
 Profile

 Archive Structure
 ✓ Default ILCD

 Environmental Footprint (EF) (V1.0.3)

 Categories
 Add/Update Profile...

 Links
 Orphaned Items

 Nomenclature (Reference Flows)
 ILCD Format Syntax (XML Schemas)

 Addvanced ILCD Format Syntax (XSLT Stylesheet)

Figure 3: Add a new profile

Click on the icon with the three dots as shown in Figure 4. A "File Open" dialog appears that will let you select the profile file where you downloaded it and confirm (Figure 5).

		Profiles
		Name:
		Path
		Version
		version.
ear	it Remove Clea	Add Edi
Version	Path	Name
Cancel OK		

Figure 4: Preferences Dialog

	Prefe	erences	
Profiles	Profiles		'alidati
	<b>profiles</b>	\$	Q Suchen
Name	Änderungsdatum 🗸	Größe Art	Hinzugefügt am
EPD_1.1_profile_1.0.1.jar	04.11.2015, 15:53	132 KB JavaR-D	atei Heute, 10:56
		_	
	*.jar		
Neuer Ordner Optione	n		Abbrechen Öffnen 📐
_			Cancel OK

Figure 5: Select profile on the file system

The name and version number of the profile are now shown in the respective fields of the Preferences dialog as shown in Figure 6. Click on "Add" in order to install the profile (Figure 7). Close the Preferences dialog by selecting the OK button.

		Preferences		
Profiles	Profiles			
	Name: Path:	EPD 1.1 /Users/oli/Downloads/ILC	DFormatValidationTool 2/p	rofiles/E
	Version:	1.0.1 it Remove Clear		
	Name	Path	V	ersion
			Cancel	ОК

Figure 6: Pre-loaded profile metadata

	F	Preferences	
Profiles	Profiles		
Profiles	Profiles Name: E Path: // Version: 1 Add Edit Name EPD 1.1	PD 1.1 Users/oli/Downloads/ILCDFormatValidationTool 2 I.0.1 Remove Clear Path /Users/oli/Downloads/ILCDFormatValidatio	/profiles/E Version 1.0.1
		Cancel	ок

This installation process only has to be performed once, all installed profiles will be stored locally by the application and be available for subsequent uses.

The newly installed profile can now be selected in the Profile selector of the Validation Aspects view. Select the EPD profile and check the "Categories", "Links", "ILCD Format Syntax" and "Advanced ILCD Format Syntax" aspects to be validated (Figure 8 and Figure 9).

Default	Default ILCD Environmental Footprint (EF) (V1.0.2) ILCD 1.1 Entry Level (EL) (V1.0.1)
Archive Stru	✓ EPD 1.1 (V1.0.5) Add Profile
Categories	
Links	
Orphaned Ite	ms
Nomenclatur	e (Reference Flows)
Nomenclatur	e (Reference Flows) Syntax (XML Schemas)

Figure 8: Select EPD profile

Valid	ation Aspects	
	Default Profile	
	Archive Struc EPD 1.1 (V1.0.5)	
	Categories	
	Links	
	Orphaned Items	
	Nomenclature (Reference Flows)	
	ILCD Format Syntax (XML Schemas)	
C,	Advanced ILCD Format Syntax (XSLT Stylesheet)	

Figure 9: Set validation settings

Once files and/or folders to validate have been added, the validation can be initiated by selecting the green ">" button (Figure 10).

					Validation Aspects	
Filename	Path			Validation Progress	Default	Profile
0ad48afe-38d8-47d	1-8c74 /Users/oli/Download	s/0ad48afe-38d8-47d1-8c74-705b6f296b94.	xml		- Donaut	
	(				Archive Structure	EPD 1.1 (V1.0.1)
	1 I I I I I I I I I I I I I I I I I I I	Drop files or folders he	re		Categories	
	1					
	1					
	N				Orphaned Items	
					Reference Flows	
					XML Schemas	
- 🔜				<b>&gt; ×</b>	XSLT Stylesheet	
	Filonamo	UUID	Dataset Type	Message		
Aspect Name	rienoire					
Aspect Name	ristan					

Figure 10: Start validation

During the validation process, a progress indicator will be shown for each item on the list. Once the validation is finished, next to each item a little icon is displayed indicating whether or not the validation was successful (Figure 11).

ile Selection				Validation Aspects	
Filename Cad48afe-38d8-47d1	Path -8c74 /Users/oli/Downloads/0ad48af Drop	-38d8-47d1-8c74-705b6f298b94.xml files or folders here	Validation Progress	Default Archive Structure Categories Links Orphaned Items Reference Flows XML Schemas XSLT Stylesheet	Profile
alidation Messages	Filename	UUU Di	ataset Type Message		

Figure 11: Validation successful

In case any issues were detected, these are listed in the "Validation Messages" view below (Figure 12). These indicate the aspect, filename, UUID and type of the dataset, and an explanation. To read the explanation in full, hover over the message with the mouse pointer to display a tooltip with the entire message (Figure 13).

		ILCD Valida	ation Tool 1.1.0			
le Selection					Validation Aspects	
Filename     Pa       Oudd8afe-38d8-47d1-8c74 /U       Oudd8afe-38d8-47d1-8c74 /U       Oudd8afe-38d8-47d1-8c74 /U	th sers/oli/Downloads// sers/oli/Downloads/ I	Dad48afe-38d8-47d1-8c74-705b6f296b94.xml Dad48afe-38d8-47d1-8c74-705b6f296b94_inva Prop files or folders here	lid_category.xml	Validation Progress	Default     Archive Structure     Categories     Links     Orphaned Items     Reference Flows     XML Schemas     XSLT Stylesheet	Profile EPD 1.1 (V1.0.1)
lidation Messages Aspect Name Categories Oad48afe-38d8-4	7d1-8c74-705b6f	UUID 0ad48afe-38d8-47d1-8c74-705b6f296b94	Dataset Type process data set	Message Validation error for classification "o	ekobau.dat": category "Nut:	zung von Wärmeerze

*Figure 12: Successful and unsuccessful validation with messages* 

Valid	ation Messages						
	Aspect Name	Filename	UUID	Dataset Type	Message		
0	Categories	Validation error for classification "oeko	bau.dat": category "Nutzung von Wärmeerzeugern"	under path "/Gebäud	letechnik (Nutzung	" unknown (using file edu/kit/iai/lca/epd/categories/OEKOBA	J.DAT_Categorie
The	e were errors.						

Figure 13: Validation message

If the item to validate is a single XML file or folder, the "Validation Messages" view allows for right-clicking on an item and selecting the option "Show in file system" in order to locate the incriminating item on the file system (Figure 14). Obviously, this does not work for ZIP archives, which would have to be extracted first on the file system.

Validation Messages			
Aspect Name	Filename	UUID	Dataset Type Message
Categories	Gad48afe-38d8-47d1-8c74-705b8f	0ad48afe-38d8-47d1-8c74-705b6f296b94	process dshow in file systemsasification *oekobau.dat": category *Nutzung von Wärmeerzeugern
There were errors.			

Figure 14: Show in file system