

TxFORM for ODX Manual

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Revision History

Version	Date	Editor	Revisions / Comment
1.0	2005-12-02	Alexander Heinrich	Initial version
1.1	2006-04-04	Alexander Heffner	Revision of the whole document (new configuration dialog, new features)

Disclaimer

All information provided in this document comes without any warranties, expressed or implied, of quality, correctness, performance, merchantability, fitness for a particular purpose or non-infringement.

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2 The Application

The TxForm application is part of the TxToolbox, a Java™ -based toolset for developers of ASAM MCD-2D(ODX) / ISO22901 documents. It can be used to generate PDF documents that present information about services, DOPs, and other objects contained by ODX documents in a readable format.

TxForm is available as a version embedded in the TxToolbox or as a stand-alone tool. This document describes the stand-alone tool.

2.1 System Requirements

TxForm should be run on a system with at least 512 MB RAM and a 1.6 GHz CPU. While the application may also run on less powerful systems, performance may suffer.

Since the application is based upon Java™, it should be able to run on any system that has a Java Runtime Environment (JRE) installed. However, the TxForm package includes its own JREs for MS Windows™: these are installed alongside any existing JREs.

3 The Menu Bar

Use: Control every aspect of the Formatter tool. Speed buttons exist for some of the frequently used menu items.

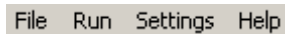


Figure 1 – The menu bar

3.1 The File Menu

3.1.1 Open ODX Files...

Use: Invoke a file chooser dialog for selection of one or more ODX documents. All currently opened ODX documents are discarded and only those selected are added to the File panel. If you wish to add ODX documents to those already contained in the File panel, execute **Add ODX** instead.

A speed button for this menu item is available in the toolbar.

3.1.2 Open ODX Directory...

Use: Select a directory from the file chooser dialog to add all ODX documents contained to the File panel.

3.1.3 Open PDX File...

Use: Open a PDX (packed ODX) selected from the file chooser dialog. A PDX may contain multiple ODX documents. The PDX is unpacked and all documents contained are added to the File panel. You may not have more than one PDX file opened at a time: if the File panel already contains documents, these will be removed before the PDX is opened.

A speed button for this menu item is available in the toolbar.

3.1.4 Add ODX...

Use: Invoke a file chooser dialog for selection of one or more ODX documents to be added to the File panel. Any ODX documents already loaded remain in the File panel.

A speed button for this menu item is available in the toolbar.

3.1.5 Close

Use: Clear the File panel. All loaded ODX documents are unloaded.

A speed button for this menu item is available in the toolbar.

3.1.6 Exit

Use: Unload all files in the File panel and exit the application.

3.2 The Run Menu

3.2.1 Generate Document

This menu item is disabled if no document is selected in the File panel.

Use: Generate a document from the active file (→ 6.1). This item invokes the Properties dialog for customization of the output to generate (→ 4). Confirm the settings with **Ok**, and select a filename and location for the output file. TxForm automatically generates a PDF document.

3.3 The Settings Menu

3.3.1 Load Referenced Files Check Box

Use: Load ODX documents that are referenced by other loaded documents. The Formatter searches for the referenced documents in the directory in which the referencing document is located.

3.3.2 Language (GUI)

Use: Select a language for the GUI, i.e., for the labels, messages, buttons, and menus of the Formatter.

4 Formatter Configuration

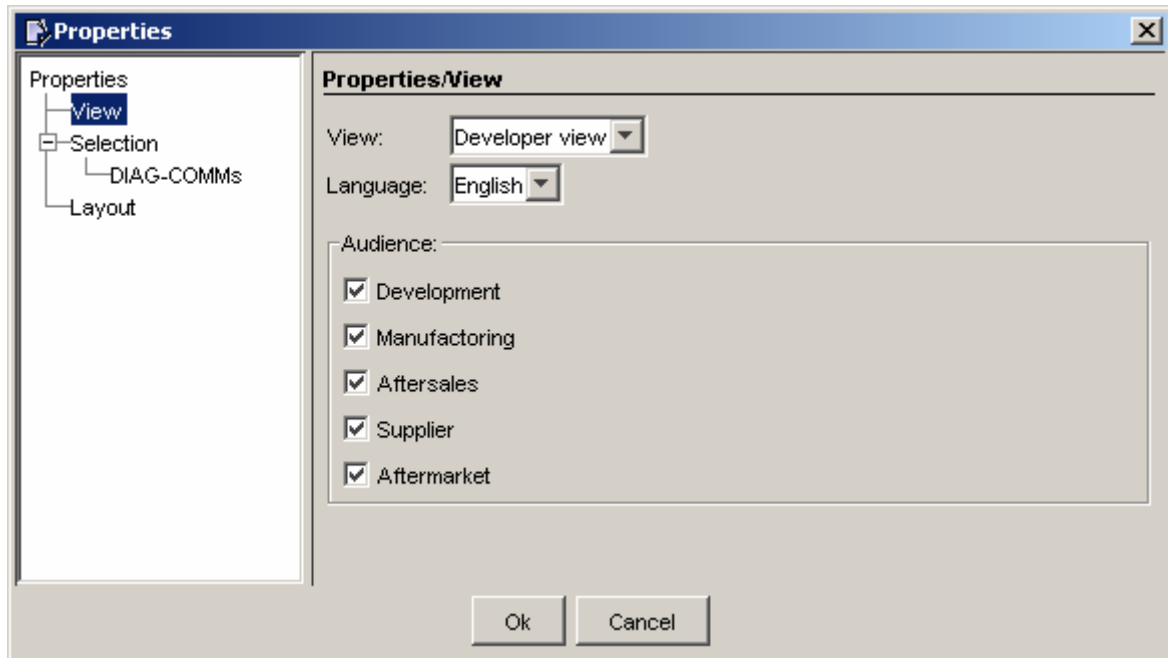


Figure 2 – Formatter configuration

The Properties dialog consists of several properties panels organized in a tree structure. The tree view is shown in the navigation pane on the left. The currently selected properties panel is shown in the pane on the right. The tree structure is Formatter/OEM specific. The figure above depicts the tree of the default formatter.

4.1 View Panel

Use: Select a view (some sort of template) to be used for the output document. The list of views is formatter specific.

You may change the language of the generated document by selecting from the Language drop down list (→ Figure 2).

Also, you may restrict the generated output to display only information about services for (at least one of) the selected audience filters.

4.2 Selection Panel

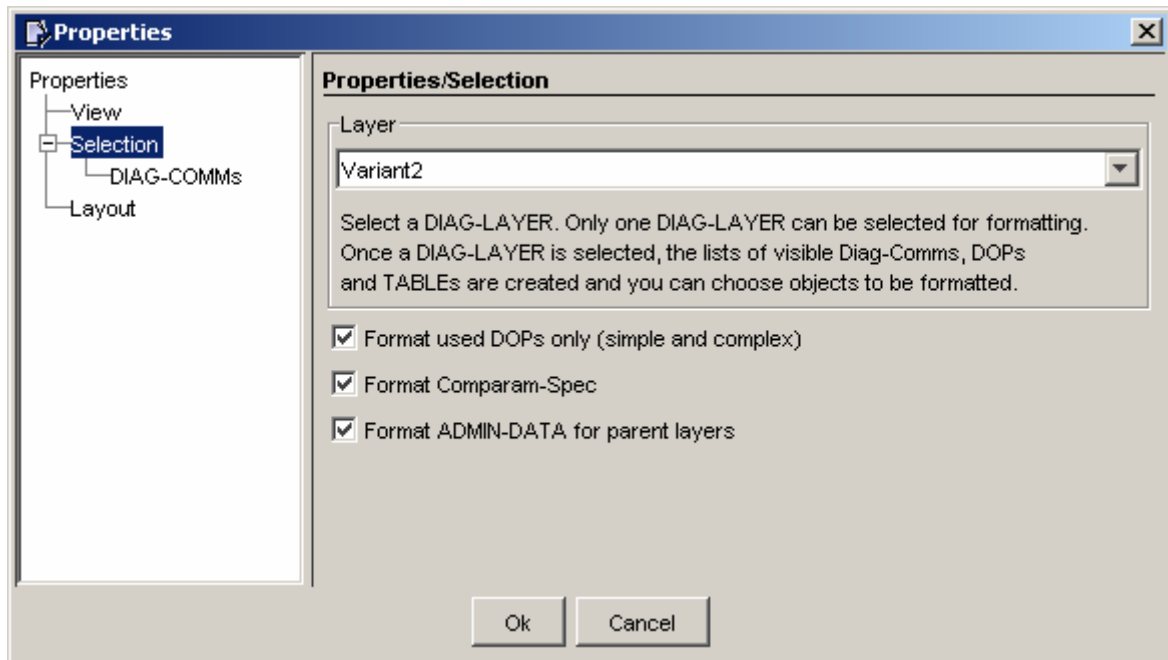


Figure 3 – Selection

Use: Select a layer from the drop down list containing all the layers found in the loaded data.

If the check box **Format used DOPs only** is activated, the application formats only the objects (DOPs and TABLEs) that are actually being used. Otherwise all objects that are visible from the specified layer are formatted.

If the check box **Format Comparam-Spec** is activated, the COMPARAMs with the values valid for the selected layer are formatted in the chapter “Communication parameters”.

If the check box **Format ADMIN-DATA for parent layers** is activated, the change histories of parent layers are formatted. For each layer, an own sub-clause is created in the chapter “Change history”. If this option is deactivated, only the change history of the selected layer is formatted.

4.3 Selection of DIAG-COMMs Panel

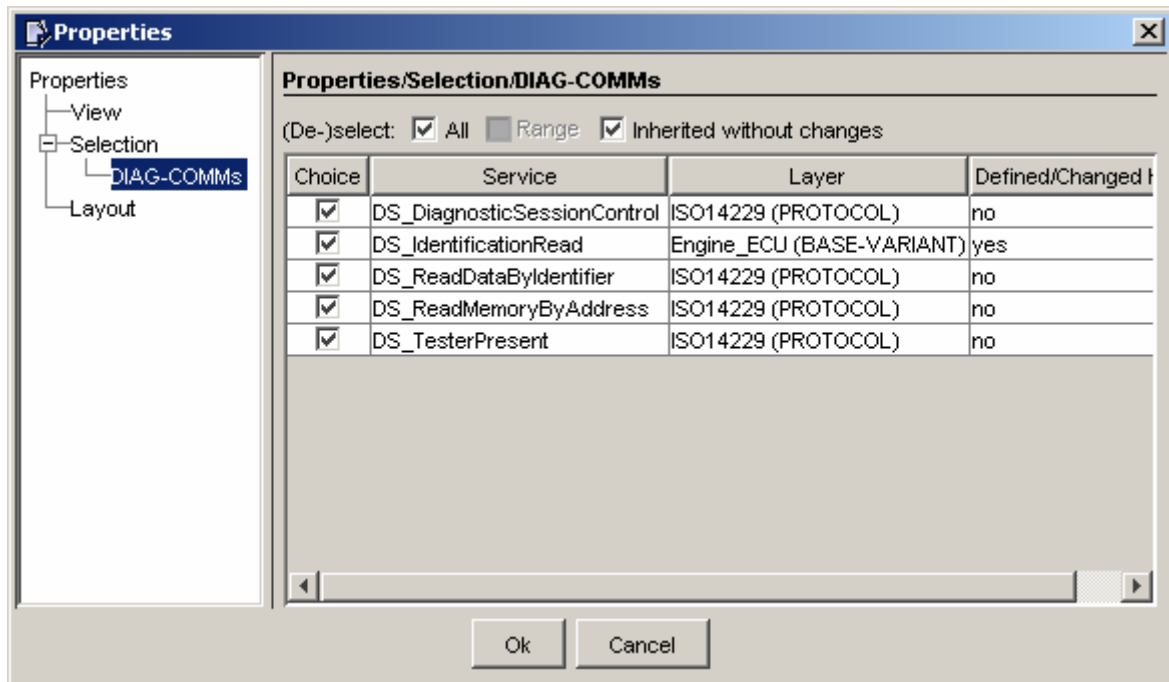


Figure 4 – Selection of DIAG-COMMs

Use: Filter the generated output to display information only about the selected services. All services are selected by default.

The columns in the table of services have the following meaning:

- Choice If active, service is formatted
- Service Short name of the service or job
- Layer Short name of the layer in which the service is defined
- Defined/Changed here If yes, the service is defined or changed in the layer selected

Note: If a DOP used by the service is changed, the entire service is considered changed.

Check boxes are provided to select/unselect services:

- All Select or unselect all services
- Range Select or unselect previously marked services
- Inherited without changes Select or unselect services inherited from super-ordinate

layers that were not changed in the current layer.

Note: This is equivalent to selecting or unselecting services by setting the option **no** in the Defined/Changed here column.

4.4 Layout Panel

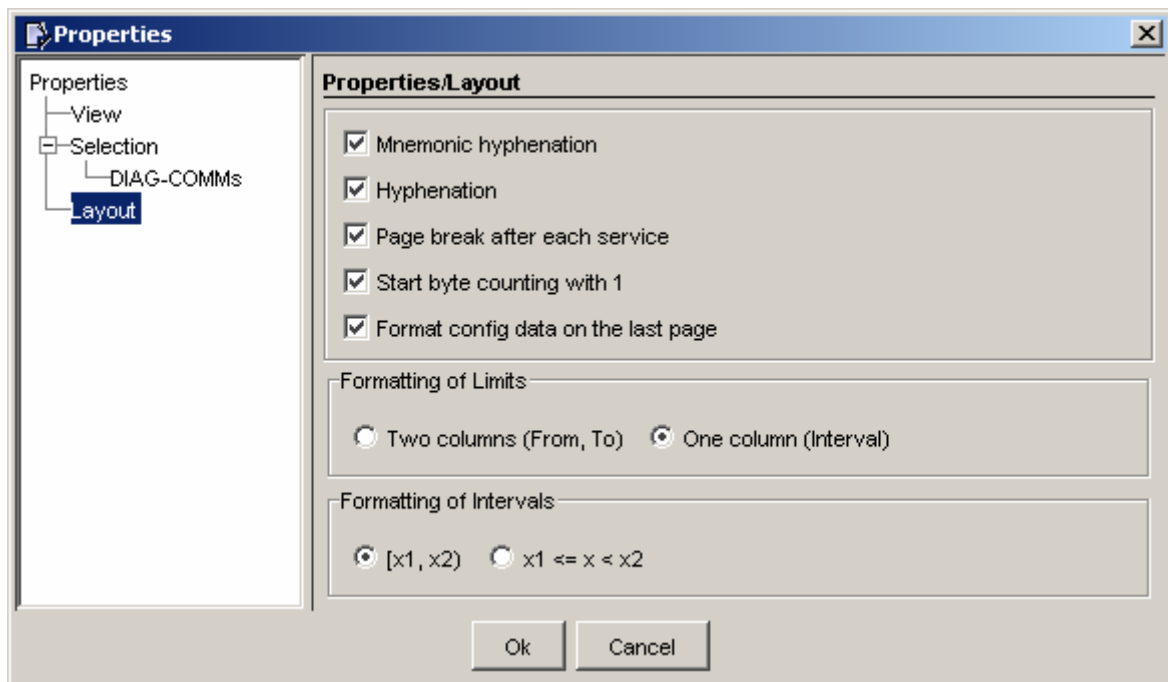


Figure 5 – Layout

This panel contains layout-specific properties.

- | | |
|---------------------------------------|--|
| • Mnemonic hyphenation | Execute automatic word wrapping for short names |
| • Hyphenation | Execute automatic word wrapping for other text |
| • Page break after each service | Insert a page break after each service |
| • Start byte counting with 1 | Start the byte count with one and set the character # before the byte number |
| • Format config data on the last page | Insert table with config data as key/value pairs |

on last page of output document

Options are provided for the formatting of limits and intervals:

- **Formatting of Limits** Select whether the limits of CASEs, COMPU-SCALEs, and SCALE-CONSTRs are to be formatted as two columns (From, To) or as an interval in one column
- **Formatting of Intervals** Define the interval format. [x1, x2) means that the value x1 is the member of the interval (INTERVAL-TYPE="CLOSE") and x2 is not (INTERVAL-TYPE="OPEN")

5 The Toolbar

The tool bar is located underneath the menu bar. It provides buttons for the most frequently used functions in TxForm.

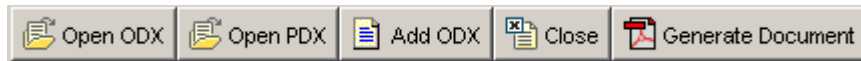


Figure 6 – The toolbar

The toolbar can be moved to different positions simply by dragging it to one of the four sides of the application window. An empty rectangle is shown at the mouse pointer's position - its frame becomes red if docking is possible at this position; otherwise it remains black. If you drop the toolbar while its frame is black, the toolbar will float. To dock it at its last position, click on the button.

The toolbar contains the following buttons:

	Speed button for the Open ODX Files... menu item from the File menu
	Speed button for the Open PDX File... menu item from the File menu
	Speed button for the Add ODX... menu item from the File menu
	Speed button for the Close menu item from the File menu
	Speed button for the Generate Document menu item from the Run menu

6 The Client Area

The client area is divided into two parts – the File panel on the left and the console on the right.

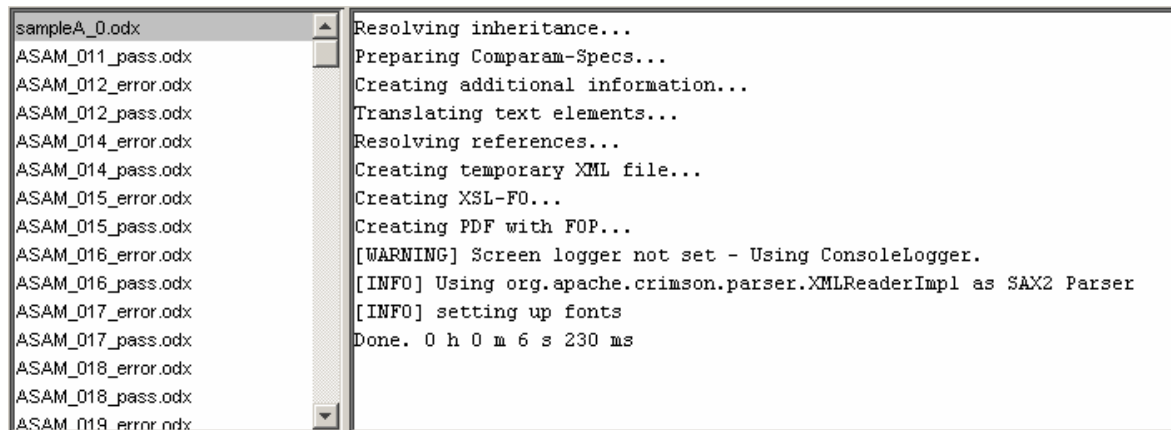


Figure 7 – The client area

6.1 File Panel

Use: View all currently loaded ODX documents. The currently active file can be selected by double-click.

6.2 Console

Use: View messages that were generated during a run of the Formatter, such as error messages, warnings, and information about document generation.

7 Batch Mode

TxFom does not necessarily have to be run in GUI mode: its functionality can also be accessed over a command prompt.

7.1 Syntax

```
java -Xmx1000M com.tsystems.formatter.TxFom -in <source> -layer <layerName> -out
<destination> [+lr | -lr] -ini <ini-file> -l <language-code>
```

-in <source>	Path (absolute or relative) to the ODX document to be formatted Note: This parameter is mandatory.
-layer <layerName>	SHORT-NAME of the layer in <source> to be formatted Note: This parameter is mandatory if <source> is a PDX; otherwise it is optional.
-out <destination>	Name of the output file, e.g., output.pdf Note: This parameter is mandatory.
+lr -lr	Indicate whether or not referenced documents are to be loaded automatically (→3.3.1 Load Referenced Files).
-ini <ini-file>	File with configuration data
-l <language-code>	Language Permissible values: en for English and de for German

7.2 Examples

1. Load and format the file **data.odx** and all referenced documents:

```
java -Xmx1000M com.tsystems.formatter.TxFom -in d:\data.odx -out d:\test.pdf +lr
-layer MyLayer -ini d:\foramtter.properties
```

2. Load the PDX file **data.pdx** and format the layer **MyLayer**:

```
java -Xmx1000M com.tsystems.formatter.TxFom -in d:\data.pdx -out d:\test.pdf
-layer MyLayer
```

7.3 INI Files

The INI files are Java properties files with the following keys:

Key	Values	Description
IntervalFormat	Integer: 0 or 1: 0: [x1, x2) 1: $x1 \leq x < x2$	Interval format (→ 4.4)
FormatUsedOnly	Boolean: true: used only false: all DOPs should be formatted	Format used DOPs only (→ 4.2)
PageBreakForService	Boolean: true: insert false: do not insert	Insert page break after each service (→ 4.4)
IsAftermarket	Boolean: true: filter activated false: filter deactivated	Audience filter (→ 4.1)
IsAftersales	Boolean: true: filter activated false: filter deactivated	Audience filter (→ 4.1)
IsDevelopment	Boolean: true: filter activated false: filter deactivated	Audience filter (→ 4.1)
IsManufacturing	Boolean: true: filter activated false: filter deactivated	Audience filter (→ 4.1)
IsSupplier	Boolean: true: filter activated false: filter deactivated	Audience filter (→ 4.1)
ByteOffset1	Boolean: true: start byte counting with 1 false: start with 0	Start byte counting with 1 (→ 4.4)
FormatAdminForParents	Boolean: true/false	Format admin data for parent layers (→ 4.2)
Hyphenation	Boolean: true/false	(→ 4.4)

Key	Values	Description
MneHyphenation	Boolean: true/false	(→ 4.4)
View	Integer: 0..inf	Formatter-specific view index (→ 4.1)
LanguageCode	String: e.g. “en” or “de”	Language code (→ 4.1)
ScaleFormat	Integer: 0 or 1: 0: two columns (From/To) 1: one column with interval	Scale format (→ 4.4)
FormatCPSpec	Boolean: true/false	Format comparam-spec (→ 4.2)
FormatConfigOnLastPage	Boolean: true/false	Format config data on the last page (→ 4.4)

Example:

```

IsSupplier=true
IntervalFormat=0
FormatUsedOnly=true
PageBreakForService=true
IsAftermarket=true
IsDevelopment=true
IsManufactoring=true
ByteOffset1=true
FormatAdminForParents=true
Hyphenation=true
MneHyphenation=true
View=1
LanguageCode=de
IsAftersales=true
FormatConfigOnLastPage=true
ScaleFormat=0
FormatCPSpec=true

```

8 Java API

The Java API in TxForm consists of two main interfaces: IF_Formatter and IF_FormatterProperties. The interface IF_Formatter offers the access to formatter functionalities. The latter is used to configure the formatter.

To use the formatter, proceed as follows:

1. Get an instance of a formatter and of IF_FormatterProperties using the following factories:

```
IF_Formatter formatter = IF_Formatter.Factory.newInstance();
IF_FormatterProperties formProps =
    IF_FormatterProperties.Factory.newInstance();
```

2. Initialize the language maps:

```
formatter.initLangMaps(new File("lingua\\bmw\\languages.xml"));
```

3. Load ODX files:

```
formatter.loadODXFiles(new File[] {
    new File("D:\\testfiles\\1\\ISO14229-examples_short.odx"),
    new File("D:\\testfiles\\1\\ISO14229_CP.odx"),
});
```

4. Configure the formatter:

```
formProps.setLayerName("Variant2");
formProps.setView(0);
formProps.setLanguageCode("de");
```

5. Apply properties:

```
formatter.setFormatterProperties(formProps);
```

6. Start the formatting process:

```
formatter.format(new File("D:\\testfiles\\Variant2.pdf"));
```

To learn more about formatter API, please see the javadoc (→ [3]).

9 Licenses

TxForm includes software developed by the following organizations:

The Apache Software Foundation (<http://www.apache.org>)

The DOM4J Project (<http://www.dom4j.org>)

For details about license agreements, visit these sites.

10 References

1. ASAM ODX Schema Version 2.0.1
<http://www.asam.net/xml/odx/2.0.1/odx.xsd>
<http://www.asam.net/xml/odx/2.0.1/odx-xhtml.xsd>
<http://www.asam.net/xml/odx/2.0.1/odx-cc.xsd>
2. ODX Specification ASAM MCD-2D (ODX) 2.0.1
http://www.asam.net/O3_standards_06.php
3. Javadoc for Formatter API, T-Systems GEI GmbH, 2006