Chapter

17 *CIF Converter Tools*

This chapter is a reference manual for the CIF2SDT and SDT2CIF converter tools. The CIF2SDT tool converts CIF (the Common Interchange Format as defined in the Z.106 recommendation) files to binary format files, while SDT2CIF tool converts binary files or system files to CIF files.

CIF is a human readable text format for storing SDL diagrams, making it possible to store SDL diagrams in version control systems that only accept text files. In addition, it provides a base for converting diagrams to and from other SDL toolsets. The CIF2SDT and SDT2CIF tools bring the advantage of CIF to the SDL suite tools.

Introduction

Common Interchange Format

CIF (Common Interchange Format) is a text format specified by ITU-T (International Telecommunication Union) in the recommendation Z.106 to ease the interchange of graphical SDL specifications. SDL-CIF is an extension to SDL/PR and is based on the SDL/PR syntax and can be read and written by tools as well as users. The CIF constructs are expressed as comments preceding the PR code. The advantages of such a text format are:

- SDL diagrams may be stored in version control systems that only accept text files.
- The format is human readable.
- It makes it possible to convert diagrams, including their layout, to and from other SDL toolsets that support CIF.
- It also makes it possible to revert to previous versions of the SDL suite, by using CIF as an intermediate format and re-opening the CIF files in an older version of the SDL suite to become SDL-GR.

However, CIF cannot be used as a storage format for files in the SDL suite as it is required that specification stored in CIF file must be complete and correct.

CIF <-> SDT Converters

The CIF2SDT and SDT2CIF converters make the advantages of the CIF format available to the SDL suite tools. The converters are implemented as a binary that can be run in a textual, command-line mode from the OS prompt, or as separate applications with graphical user interfaces **(in Windows)**. The converter tools can also be launched from the Organizer using the menu choices *Convert GR to CIF* and *Convert CIF to GR* from the *Generate* menu.

The conversion between CIF and the binary format is performed as follows:

- When converting to CIF, the tool SDT2CIF is used. CIF comments will be generated close to the corresponding SDL/PR code.

- When converting from CIF, the tool CIF2SDT is used. Both CIF comments and SDL/PR code are considered. CIF comments control conversion, while the text for symbols is extracted from the SDL/PR code.

Note:

The CIF2SDT or SDT2CIF tools require the SDL suite environment when running; meaning that there should be enough licenses available to be able to convert to/from CIF.

On UNIX, when running the CIF converters without having started the SDL suite tools, the environment variable $`telelogic` must be set. This will be set by souring the file `telelogic.sou` in the Telelogic Tau installation directory.

Generally, one CIF file contains several SDL diagrams. However, the placement of generated diagrams can be specified by the user.

CIF2SDT Converter Tool

The CIF2SDT tool converts CIF files to binary format files. It can convert one or more specified CIF files or all CIF files in a specified directory.

The CIF2SDT converter never overwrites existing data files. If the converter finds that the file it was going to write already exists, it generates a new name for the output file by replacing the two last characters at the end of the file name.

The CIF2SDT converter can be started in the following ways:

- From the OS command line; see "Command Line Syntax" on page 880.
- As a separate application with a graphical user interface **(Windows only)**; see "Graphical User Interface (Windows only)" on page 884.
- From the Organizer's *Generate* menu choice *Convert CIF to GR*.
  - **On UNIX**, a dialog is then opened; see "Convert CIF to GR Dialog (UNIX only)" on page 883.
  - **In Windows**, the separate application is then started; see "Graphical User Interface (Windows only)" on page 884.

Command Line Syntax

The CIF2SDT tool can be invoked from the OS prompt as follows:

```
cif2sdt [-v[ersion]] [-h] [-r] [-k]
[ -o <output file name> ]
( <CIF file> | <directory> )*
```

The meaning of the command-line options is given in the following sections.

(Windows only) When started without options or with -r option only, the Graphical User interface will be started, otherwise the application will execute as a command line application. However, to be able to get the output in the command window when run as a command line application you must use the special application conspawn as a wrapper (assuming `C:\Telelogic\SDL_TTCN_Suite4.5` is the installation directory)

```
C:\Telelogic\SDL_TTCN_Suite4.5\bin\wini386\conspawn.exe -b

C:\Telelogic\SDL_TTCN_Suite4.5\bin\wini386\cif2sdt.exe
myciffile
```

When using the converter as a command line application and invoking it within emacs pathnames in input files are lost. Therefore be sure to do a "cd" to the directory where the files are before invoking the converter.

Command Line Options

- `-v` or `-version` (show the version)

  This option displays the version number of the tool.

- `-h` (show the command line syntax)

  This option displays a help message about the command line syntax.

- `-r` (reuse a started Telelogic Tau session)

  This option allows to reuse and connect to an already started Telelogic Tau session if it exists. The default behavior is to start a new Telelogic Tau session.

- `-k` (keep original file name)

  If the CIF file being converted was converted from an SDL diagram, the converter will use the original file name for the output file.

Note:

This option will only work if the CIF file contains the CIF comment OriginalFileName.

- `-o` (save the generated files under the name specified)

  When given this option, the SDT2CIF converter will save the generated diagrams in the file named `<output file name>`.

Examples of Usage

Example 141 ————————————————————————————

```
cif2sdt myfile.cif
```

The CIF2SDT tool will convert the diagrams contained in the CIF file `myfile.cif` to the file `myfile.sif` (if a file named `myfile.sif` does

not already exist), `myfile01.sif` (if a file named `myfile.sif` already exists, but the file `myfile01.sif` does not), `myfile02.sif` and so on.

Example 142 ––

```
cif2sdt -o lift.sbk lift.cif
```

The CIF2SDT tool will convert the diagrams contained in the CIF file `lift.cif` to binary format and put it into an SDL block file named `lift.sbk` (again, if the file named `lift.sbk` does not already exist – otherwise, the name will be modified and a corresponding message issued).

Example 143 ––

```
cif2sdt mycifdir
```

(where `mycifdir` specifies a directory name)

The CIF2SDT tool will search for CIF files in the directory named `mycifdir`, convert all CIF files found to binary format files.and put the converted diagrams in the directory `mycifdir`. For information on how the search for CIF files is done, see "How the Converter Works" on page 886.

Example 144 ––

```
cif2sdt myblock.cbk myprocss.cpr myservce.csv
```

The CIF2SDT tool will convert the CIF files `myblock.cbk`, `myprocss.cpr` and `myservce.csv` and put the converted diagrams into the binary files `myblock.sbk`, `myprocss.spr` and `myservce.ssv`.

Example 145 ––

```
cif2sdt mysystem.csy mycifdir
```

(where `mycifdir` specifies a directory name)

The CIF2SDT tool will convert the CIF file `mysystem.csy` and put the converted diagrams into an system file, then it will search the directory `mycifdir` and convert all CIF files found in this directory.

––

Convert CIF to GR Dialog (UNIX only)

On UNIX, the CIF2SDT converter can also be started by selecting *Convert CIF to GR* from the Organizer's *Generate* menu. This opens the *Convert CIF to GR* dialog:

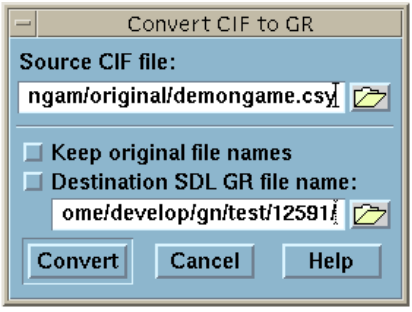

Figure 173: The Convert CIF to GR dialog

The dialog functions as a front-end to the `cif2sdt` converter described in "Command Line Syntax" on page 880. The only functionality **not** supported by the dialog is the possibility to specify a directory name as input to the conversion.

- *Source CIF file*

  This text field specifies the name of the CIF file to be converted (a directory name **cannot** be specified). To select a file using a standard file selection dialog box, press the folder button located to the right of the text field.

- *Keep original file names*

  If this option is enabled, the converter will preserve the original file name (i.e. the file from which this CIF file was generated).

> **Note:**
> This option will only work if the CIF file contains the CIF comment OriginalFileName.

- *Destination SDL/GR file name*

  This text field specifies the name of the file which will contain the converted diagrams. To select a file using a standard file selection

dialog box, press the folder button located to the right of the text field.

- *Convert*

  Clicking this button will initiate the conversion, using the options currently displayed in the dialog. Messages issued by the converter will appear in the Organizer Log window. The possible messages are listed in "Messages from CIF2SDT Converter" on page 887.

Graphical User Interface (Windows only)

In Windows, the CIF2SDT converter is either started outside the SDL suite by using the `cif2sdt` executable in the release, or by selecting *Convert CIF to GR* from the Organizer's *Generate* menu. It provides a graphical user interface to control the conversions:

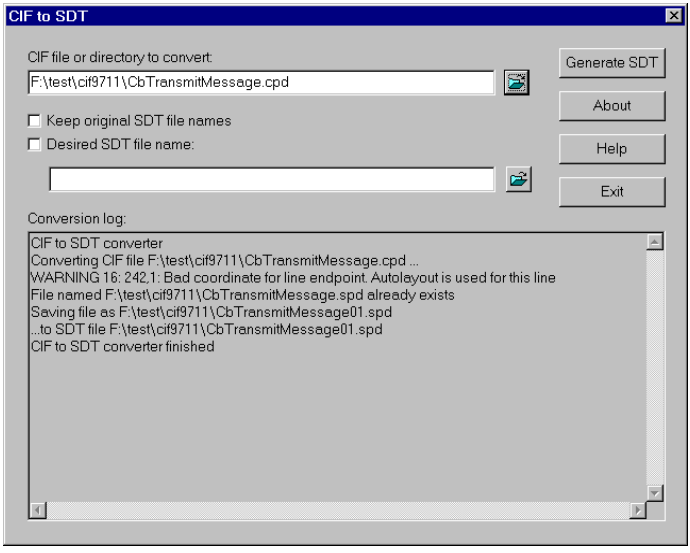

Figure 174: CIF2SDT Graphical User Interface

To convert a CIF file or all CIF files in a directory, perform the following steps:

1. Type a CIF file or directory name in the text field under *CIF file or directory to convert*.
   – To select a file using a standard dialog box, click the folder button which is located to the right of the text field.
2. Specify the desired options by clicking on check boxes which specify conversion options; look for option explanations in "Converter Options" on page 885.
3. Click the *Generate SDT* button.

After these steps, the conversion will proceed, possibly printing warning/errors/information messages into the *Conversion log* text box.

After the conversion has been performed, the CIF2SDT converter can be used again to convert more CIF files or directories.

Converter Options

- *CIF file or directory to convert*

  This text field specifies the name of the CIF file or directory to be converted. To select a file using a standard file selection dialog box, press the folder button located to the right of the text field.

- *Keep original SDT file names*

  If this option is enabled, the converter will preserve the original file name (i.e. the file from which this CIF file was generated).

> **Note:**
> This option will only work if the CIF file contains the CIF comment OriginalFileName.

- *Desired SDT file name*

  This text field specifies the name of the file which will contain the converted diagrams. To select a file using a standard file selection dialog box, press the folder button located to the right of the text field.

- *Conversion log*

This text box contains warning/error/information messages issued by the converter during the last conversion. The possible messages are listed in "Messages from CIF2SDT Converter" on page 887.

- *Generate SDT*

  Clicking this button will initiate the conversion, using the options currently displayed in the window.

- *Exit*

  Clicking this button exits the converter.

How the Converter Works

First of all, the converter analyzes the input and builds a list of files to convert. If one or a set of files was specified, it adds all the files specified to the list of files to convert. If a directory was specified, the converter searches in the specified directory for files with the extensions `.cif, .cun, .csy, .cbk, .csu, .cpr, .csv, .cpd, .cmc, .cst, .cbt, .cpt, .cvt, .cop` (which are assumed to contain CIF diagrams) and adds the files found to the list of files to convert. The extension for the output file is formed by replacing the first character of the extension of the input file with the character 's'.

When the list of files to convert is ready, the converter tries to convert each file in the list. The file being converted is parsed, analyzed, transformed, and saved. During parsing, CIF comments take precedence over the PR text, which is supposed to contain additional attributes for CIF objects. If the converter finds an error in the PR text, it proceeds by printing a warning message about that fact, using only the information extracted from the CIF comments.

The advantage of the CIF2SDT converter is that it supports incomplete PR text. For example, it can handle empty text of symbols, empty signal lists, and empty gate constraints. However, there is an exception when the PR text is required to be correct: after the "Diagram Start" CIF comment.

If a line is found that does not have the correct breakpoints (to be correct, it should be a point on the symbol border), an auto layout method is used to place the line.

The converter never overwrites any existing files. If the file to be written gets the same name as an existing file, a new name is generated for the output file to avoid overwriting existing files.

Messages from CIF2SDT Converter

The CIF2SDT converter issues an *information message* when it needs to inform the user about something; for example, when it changes the output file name in order not to overwrite an existing file. It also issues a *warning message* when some non-fatal error is found; for example, when some symbol on a diagram occurs in a wrong context. It prints an *error message* when it is not possible to continue the conversion; for example, when the input file is wrong or corrupt.

Message Format

The general format for warning/error messages is the following:

```
ERROR <error code>: [<line>, <column>:] <error text>
<additional information>
WARNING <warning code>: [<line>, <column>:] <warning
text> <additional information>
```

The `<error code>` specifies the error code which can be used to find the warning/error explanation (see the following sections). The `<line>` and `<column>` specify a position in the source CIF file where the error has occurred. The `<error text>` gives a short explanation of what is wrong. The `<additional information>` specifies additional information about the error (for example, it can specify the name of an endpoint constraint that could not be bound).

The list of possible warning/error messages follows in the next sections.

List of Error Messages

`Error 1: Arguments required` (UNIX only)

This error indicates that no command-line arguments were given to the CIF2SDT converter, which thus cannot continue processing. To remedy the situation, specify one or more file/directory name(s) to convert.

`Error 2: Illegal option` (UNIX only)
This message is issued when an invalid option is found in the command line. To remedy the situation, supply an appropriate option instead of the invalid one.

`Error 3: Duplicate option` (UNIX only)
This message is issued when a duplicate command-line option is found. The command-line options can be specified only once. To remedy the situation, remove duplicated options from the command line.

`Error 4: Missing output file` (UNIX only)
This message is issued when the option `-o` has been specified, but no output file name follows. To remedy the situation, supply an output file name after the `-o` option.

`Error 5: Illegal command line syntax` (UNIX only)
This message is issued when the command line is found not to obey the command-line syntax. To remedy the situation, make the command line conform to the command-line syntax.

`Error 6: Impossible to connect to SDT PostMaster`
This message is issued when the CIF2SDT converter cannot connect to the PostMaster.

In Windows, the CIF2SDT converter requires the PostMaster to be running in order to perform conversion. Start the Organizer and try again.

On UNIX, the most likely cause of this message is that either the path to the SDL suite tools is not in the search path, or the maximum number of licenses is reached. To remedy the situation, ensure that the SDL Editor can be started (i.e. it is in the search path) and that there are enough licenses available.

`Error 7: Error creating diagram`
This message is issued when the CIF2SDT converter cannot create a diagram in the SDL Editor. This message is most probably caused by a corrupt input CIF file. To remedy the situation, correct the CIF file.

Error 8: Error creating page

This message is issued when the CIF2SDT converter cannot create a page in the SDL Editor. This message is most probably caused by a corrupt input CIF file. To remedy the situation, correct the CIF file.

Error 9: Error creating symbol

This message is issued when the CIF2SDT converter cannot create a symbol in the SDL Editor. This message is most probably caused by a corrupt input CIF file. To remedy the situation, correct the CIF file.

Error 10: Error saving diagram in file

This message is issued when the CIF2SDT converter cannot save the resulting diagram on the output file. This message may be caused by an invalid output path/file name. If this is the case, specify a valid path. This message may also be caused by insufficient disk space available. If this is the case, free some disk space.

Error 11: Size of symbol is not specified

This message is issued when the CIF2SDT converter encounters a symbol without an explicit size specified and without any default size specified in a diagram in the input CIF file. This is illegal according to the Z.106 standard. To remedy the situation, correct the source CIF file.

Error 12: Cannot bind gate reference

This message is issued when the CIF2SDT converter cannot bind a gate reference to a list of connections. This means the input file is corrupt. To remedy the situation, correct the source CIF file.

Error 13: Cannot bind connect for...

This message is issued when the CIF2SDT converter cannot bind a connection statement with a list of channels/signal routes. This means the input file is corrupt or illegal. To remedy the situation, correct the source CIF file.

Error 14: Cannot bind FROM endpoint for...

This message is issued when the CIF2SDT converter cannot bind a FROM endpoint of a channel or signal route to a block or process. This means that the input CIF file is corrupt or illegal. To remedy the situation, correct the CIF file.

Error 15: Cannot bind TO endpoint for...

This message is issued when the CIF2SDT converter cannot bind a TO endpoint of a channel or signal route to a block or process. This means that input CIF file is corrupt or illegal. To remedy the situation, correct the CIF file.

Error 16: Cannot bind endpoint of line

This message is issued when the CIF2SDT converter encounters a flow line statement and cannot find symbols which are supposed to be connected. To remedy the situation, correct the CIF file.

Error 17: Dashed should be used if keyword Adding is used for gate

Error 18: Wrong first endpoint in gate

Error 19: Gate constraint symbol is omitted for gate

These three messages mean that the source CIF file contains contradictory CIF comments and SDL/PR and is thus corrupt. To remedy the situation, correct the CIF file.

Error 20: Wrong page name

This message is issued when the CIF2SDT converter encounters a CIF PageSwitch comment in a source file that references an undefined page in the diagram. To remedy the situation, correct the CIF file.

Error 21: Wrong number of points in pointlist for gate

This message is issued when the CIF2SDT converter encounters a CIF Gate comment with a pointlist consisting of more than two points. This is a violation of the Z.106 standard, the input file is thus corrupt. To remedy the situation, correct the CIF file.

Error 22: Create line can occur only inside block (type) without decomposition

This message means that the source CIF file is corrupt. To remedy the situation, correct the source CIF file.

Error 23: Flowline can occur only inside diagrams with process body

This message means that the source CIF file is corrupt. To remedy the situation, correct the source CIF file.

Error 24: Symbol cannot occur in this context

This message means that the CIF2SDT converter encountered a graphical symbol in a wrong context in the source diagram (for example, a start symbol in a system diagram). To remedy the situation, correct the source CIF file.

Error 25: Syntax error

This message means that the CIF2SDT converter encountered a violation of the CIF syntax in the source CIF file. To remedy the situation, correct the source CIF file.

Error 26: Illegal name of output file

This message means that either no unique name was found for the output file or there was an input/output error during saving of the output file. To remedy the situation, try to convert the diagrams to a file with a different name (**on UNIX**, see the `-o` option).

Error 27: Cannot bind connection point text position

This message means that the position of text in a connection statement could not be bound. To remedy the situation, try to move the text of connection symbol in the source diagram, then re-run the converter.

Error 28: Wrong page type(s) on the diagram

This message means that the CIF2SDT converter found a process diagram with several pages of different types, which is a violation of the Z.106 standard. To remedy the situation, correct the CIF file.

Error 29: Analysis of CIF failed

This message means that the CIF2SDT converter failed to analyze the input CIF file. In this case nothing is generated in the output file. To remedy the situation, correct the CIF file.

Error 30: Wrong syntax of extended task

This message means that the CIF2SDT converter found a syntax error in the PR text of an extended task symbol. The incorrect text is printed as the rest of the error message. Either the left or right curly bracket is missing or they appear in the wrong place in the PR text. To remedy the situation, correct the CIF file.

List of Warning Messages

Warning 2: No input files

This warning is issued when the CIF2SDT converter finds out that no valid file or directory names were specified on the command line. To remedy the situation, ensure that the specified path/file names are correct.

Warning 3: Cannot convert file or directory

This warning is issued when the CIF2SDT converter cannot determine if the specified file is a CIF file or a directory. This is most probably caused by an invalid file/path name. To remedy the situation, ensure that the specified path/file names are correct.

Warning 4: SDLE says: ...

This warning is issued when the CIF2SDT converter receives a reply from the SDL Editor with a message explaining the reason of the error. To see the more detailed explanation of the reason for the error, see the text following the colon.

Warning 5: Empty diagram

This warning means that no diagrams are contained in the source CIF file.

Warning 6: Sorry, Select symbol is not supported in SDT SDLE

Since Select symbol is not supported in the SDL Editor, the converter has no option but to ignore it.

Warning 7: ... cannot contain ... text position specification, specification ignored

Warning 7: ... text placement specification is already specified, ignoring extra specification

Warning 8: This is location of previous specification

These warning messages mean that the source CIF file is corrupt. To remedy the situation, correct the CIF file.

Warning 9: Parsing of PR has failed

This means that there is incorrect SDL/PR after some CIF comment in the source CIF file. To remedy the situation, correct the CIF file.

Warning 10: Dashed attribute synthesized

Warning 11: Dashed attribute ignored

Warning 12: Ignoring gate references

These three messages mean that there are errors in source CIF file that have been automatically corrected.

Warning 13: Integer value expected, zero assumed

This message means that some other text was encountered instead of integer number in the source CIF file, thus the value has been assumed to be zero.

Warning 14: PR is not allowed in ...

This message means that the CIF2SDT converter encountered SDL/PR where it is not allowed to be. This also indicates that the source CIF file is corrupt. To remedy the situation, correct the CIF file.

Warning 15: Descriptors are not allowed (in typebased system)

This means that the source CIF file contained a type based system diagram with some symbols in it, which is a violation of the Z.106 standard. These symbols have been ignored.

```
Warning 16: Bad coordinate for line endpoint.
Autolayout is used for this line
```

This means that a coordinate for a line endpoint has been found but this coordinate does not fall on the perimeter of the symbol that is connected to the line. Autolayout of the line will be used to place the line.

SDT2CIF Converter Tool

The SDT2CIF tool converts binary format files to CIF files. It can convert one or more specified binary format files, SDL system files or all SDL diagram files in a specified directory.

The SDT2CIF converter also supports the mixed platform feature of the SDL suite (for more information on this topic, see "Windows and UNIX File Compatibility" on page 209 in chapter 2, *The Organizer*. If the converter finds a `[DRIVES]` section during the conversion of an SDL system file, it assumes that this system file is used on mixed platforms. This makes the converter change all characters in output file name to lower case **(on UNIX)** or replace the part of the path by the drive letter **(in Windows)**.

The SDT2CIF converter never overwrites existing data files. If the converter finds that the file it was going to write already exists, it generates a new name for the output file by replacing the two last characters at the end of the file name.

The SDT2CIF converter can be started in the following ways:

- From the OS command line; see "Command Line Syntax" on page 895.
- As a separate application with a graphical user interface **(Windows only)**; see "Graphical User Interface (Windows only)" on page 900.
- From the Organizer's *Generate* menu choice *Convert GR to CIF*.
  - **On UNIX**, a dialog is then opened; see "Convert GR to CIF Dialog (UNIX only)" on page 898.
  - **In Windows**, the separate application is then started; see "Graphical User Interface (Windows only)" on page 900.

Command Line Syntax

On UNIX, the SDT2CIF tool can be invoked from the OS prompt as follows:

```
sdt2cif [-v[ersion]] [-h] [-r] [-g] [-i] [-s]
[-o <output file name>] ( <binary diagram file> |
<system file> | <directory> )*
```

(Windows only) When started without options or with -r option only, the Graphical User interface will be started, otherwise the application will execute as a command line application. However, to be able to get the output in the command window when run as a command line application you must use the special application conspawn as a wrapper (assuming `C:\Telelogic\SDL_TTCN_Suite4.5` is the installation directory)

```
C:\Telelogic\SDL_TTCN_Suite4.5\bin\wini386\conspawn.exe -b

C:\Telelogic\SDL_TTCN_Suite4.5\bin\wini386\cif2sdt.exe
myciffile
```

When using the converter as a command line application and invoking it within emacs pathnames in input files are lost. Therefore be sure to do a "cd" to the directory where the files are before invoking the converter.

The meaning of the command-line options is given in the following sections.

Command Line Options

- `-v` or `-version` (show the version)

  This option displays the version number of the tool.

- `-h` (show the command line syntax)

  This option displays a help message about the command line syntax.

- `-r` (reuse a started Telelogic Tau session)

  This option allows to reuse and connect to an already started Telelogic Tau session if it exists. The default behavior is to start a new Telelogic Tau session.

- `-g` (include graphical SDT references)

  This option directs the SDT2CIF converter to include graphical SDT references into the generated CIF file. If `-g` is given, graphical references are stored as SDL/PR comments; otherwise they are omitted.

- `-i` (omit CIF comments)

  When using this option, only SDL/PR will be generated by SDT2CIF.

- `-s` (single file)

  When using this option, all diagrams will be saved on one single file. The name of the file is the same name as the first CIF file would get after conversion if this option was not used.

- `-o` (save the generated files under the name specified)

  When given this option, the SDT2CIF converter will save the generated diagrams in the file named `<output file name>`.

Examples of Usage

Example 146 ––

```
sdt2cif mysystem.sdt
```

where `mysystem.sdt` has the following diagrams:

```
myblock.sbk
myprocss.spr
myservce.ssv
myproced.spd
```

The SDT2CIF tool will convert all the diagrams referred to in the system file and save them in the CIF format under transformed names:

```
myblock.sbk    -> myblock.cbk
myprocss.spr   -> myprocss.cpr
myservce.ssv   -> myservce.csv
myproced.spd   -> myproced.cpd
```

Example 147 ––

```
sdt2cif mysdtdir
```

(where `mysdtdir` specifies a directory name)

The SDT2CIF tool will look in the directory `mysdtdir` and convert all binary files (but not system files – this would cause double conversion) to the corresponding CIF files.

Example 148 ––

```
sdt2cif myblock.sbk myprocss.spr myservce.ssv
```

The SDT2CIF tool will convert the three binary files to the CIF files `myblock.cbk`, `myprocss.cpr` and `myservce.csv`.

Example 149 ----------

```
sdt2cif -o blocks.cif block_a.sbk block_b.sbk
block_c.sbk
```

The SDT2CIF tool will convert the three binary files `block_a.sbk`, `block_b.sbk`, `block_c.sbk` and put all diagrams converted into the file `blocks.cif`.

Example 150 ----------

```
sdt2cif -s block_a.sbk block_b.sbk block_c.sbk
```

The SDT2CIF tool will convert the three binary files `block_a.sbk`, `block_b.sbk`, `block_c.sbk` and put all diagrams converted into the file named `blocks_a.cbk` (resulting from the name under which the first file in the list of files to convert would be saved if the `-s` switch was not specified).

Convert GR to CIF Dialog (UNIX only)

On UNIX, the SDT2CIF converter can also be started by selecting *Convert GR to CIF* from the Organizer's *Generate* menu. This opens the *Convert GR to CIF* dialog:

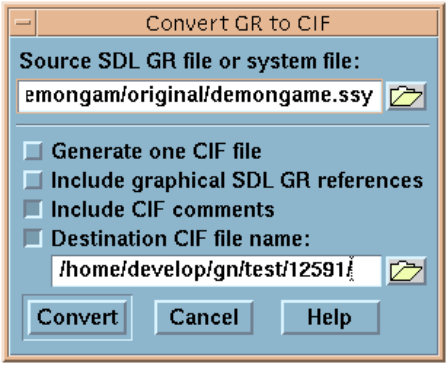

Figure 175: The Convert GR to CIF dialog

The dialog functions as a front-end to the `sdt2cif` converter described in "Command Line Syntax" on page 895. The only functionality **not**

supported by the dialog is the possibility to specify a directory name as input to the conversion.

- *Source SDL/GR file or system file*

  This text field specifies the name of the SDL/GR file or system file to be converted (a directory name can **not** be specified). To select a file using a standard file selection dialog box, press the folder button located to the right of the text field.

- *Generate one CIF file*

  If this option is enabled, the converter will save all converted diagrams into one file. The name of this file is determined from the *Destination CIF file name* check box state. If the check box is not selected, the name of the file will be the same as the name the first file being converted would get. This option is disabled by default. If the check box is selected, the name of the file with diagrams will be the name specified in the *Destination CIF file name* text field.

- *Include graphical SDL/GR references*

  This option directs the SDT2CIF converter to include graphical SDT references in the generated CIF files (see chapter 19, *SDT References* for more information on this topic). If this option is enabled, graphical SDT references are stored as SDL/PR comments; otherwise they are omitted. This option is disabled by default.

- *Include CIF comments*

  If this option is disabled, only SDL/PR will be generated to output file; otherwise CIF comments will be included. This option is enabled by default.

- *Destination CIF file name*

  This text field specifies the name of the file that will contain the converted diagrams. To select a file using a standard file selection dialog box, press the folder button located to the right of the text field.

- *Convert*

  Clicking this button will initiate the conversion, using the options currently displayed in the dialog. Messages issued by the converter will appear in the Organizer Log window. The possible messages are listed in "Messages from SDT2CIF Converter" on page 902.

Graphical User Interface (Windows only)

In Windows, the SDT2CIF converter is either started outside the SDL suite by using the `sdt2cif` executable in the release, or by selecting *Convert GR to CIF* from the Organizer's *Generate* menu. It provides a Graphical User Interface to control the conversions:

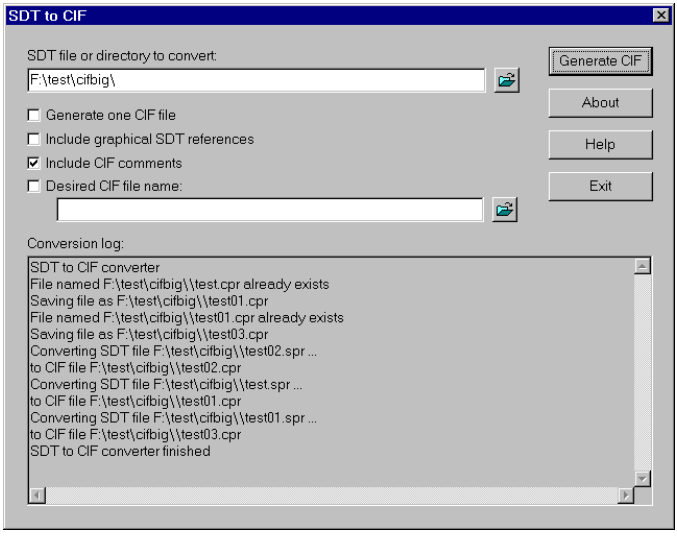

Figure 176: SDT2CIF Graphical User Interface

To convert a single binary file, system file or all binary files in a directory, perform the following steps:

1. Type an file or directory name in the text field under *file or directory to convert*.
   - To select a file using a standard dialog box, click the folder button which is located to the right of the text field.
2. Specify the desired options by clicking on check boxes which specify conversion options; look for option explanations in the following subsections.
3. Click the *Generate CIF* button.

After these steps, the conversion will proceed, possibly printing warning/errors/information messages into the *Conversion log* text box.

After the conversion has been performed, the SDT2CIF converter can be used again to convert more files or directories.

Converter Options

- *file or directory to convert*

  This text field specifies the name of the file or directory to be converted. To select a file using a standard file selection dialog box, press the folder button located to the right of the text field.

- *Generate one CIF file*

  If this option is enabled, the converter will save all converted diagrams into one file. The name of this file is determined from the *Desired CIF file name* check box state. If the check box is not selected, the name of the file will be the same as the name the first file being converted would get. This option is disabled by default. If the check box is selected, the name of the file with diagrams will be the name specified in the *Desired CIF file name* text field.

- *Include graphical SDT references*

  This option directs the SDT2CIF converter to include graphical SDT references in the generated CIF files (see chapter 19, *SDT References* for more information on this topic). If this option is enabled, graphical SDT references are stored as SDL/PR comments; otherwise they are omitted. This option is disabled by default.

- *Include CIF comments*

  If this option is disabled, only SDL/PR will be generated to output file; otherwise CIF comments will be included. This option is enabled by default.

- *Desired CIF file name*

  This text field specifies the name of the file that will contain the converted diagrams. To select a file using a standard file selection dialog box, press the folder button located to the right of the text field.

- *Conversion log*

  This text box contains warning/error/information messages issued by the converter during the last conversion. The possible messages are listed in "Messages from SDT2CIF Converter" on page 902.

- *Generate CIF*

  Clicking this button will initiate the conversion, using the options currently displayed in the dialog.

- *Exit*

  Clicking this button will exit the converter.

Messages from SDT2CIF Converter

The SDT2CIF converter issues an *information message* when it needs to inform the user about something; for example, when it changes the output file name so as not to overwrite an existing file. It also issues a *warning message* when some non-fatal error is found; for example, when some symbol on a diagram occurs in a wrong context. It prints an *error message* when it is not possible to continue the conversion; for example, when the input file is wrong or corrupt.

Message Format

The general format for warning/error messages is the following:

```
ERROR <error code>: <error text> <additional
information>
WARNING <warning code>: <warning text> <additional
information>
```

The `<error code>` specifies the error code which can be used to find the warning/error explanation (see the following sections). The `<error text>` gives a short explanation of what is wrong. The `<additional information>` specifies additional information about the error (for example, it can specify the name of an endpoint constraint that could not be bound).

The list of possible warning/error messages follows in the next sections.

List of Error Messages

`Error 1: Arguments required` **(UNIX only)**
This error indicates that no command-line arguments were given to the SDT2CIF converter, which thus cannot continue processing. To remedy the situation, supply one or more file/directory name(s) to convert.

`Error 2: Illegal option` **(UNIX only)**
This message is issued when an invalid option is found in the command line. To remedy the situation, supply an appropriate option instead of the invalid one.

`Error 3: Duplicate option` **(UNIX only)**
This message is issued when a duplicate command-line option is found. The command line options can be specified only once. To remedy the situation, remove duplicated options from the command line.

`Error 4: Missing output file` **(UNIX only)**
This message is issued when the option `-o` has been specified, but no output file name follows. To remedy the situation, supply an output file name after the `-o` option.

`Error 5: Illegal command line syntax` **(UNIX only)**
This message is issued when the command line is found not to obey the command-line syntax. To remedy the situation, make the command line conform to the command-line syntax.

`Error 6: Impossible to connect to SDT PostMaster`
This message is issued when the SDT2CIF converter cannot connect to the PostMaster.

In Windows, the SDT2CIF converter requires the PostMaster to be running in order to perform conversion. Start the Organizer and try again.

On UNIX, the most likely cause of this message is that either the path to the SDL suite tools is not in the search path, or the maximum number of licenses is reached. To remedy the situation, ensure that the SDL Editor can be started (i.e. it is in the search path) and that there are enough licenses available.

Error 7: SDLE cannot convert the file

This message means that either the file is corrupt or the SDL Editor cannot read the source file or write to output file. To remedy the situation, ensure that the source file is valid and that there is enough disk space. Try to Restart the SDL suite and re-run the converter.

List of Warning Messages

Warning 1: No input files (UNIX only)

This message means that the SDT2CIF converter did not find any suitable file for conversion among those specified on the command line. To remedy the situation, ensure the specified file/path names are correct.

Warning 2: Cannot convert file or directory

This message is most probably caused by a path/file name misspelling. To remedy the situation, ensure that the specified file/path names are correct.

Warning 3: SDLE says: ...

This warning is issued when the SDT2CIF converter receives reply from the SDL Editor with message explaining the reason of the error. To see the more detailed explanation of the reason for the error, see the text following the colon.