4 Libraries and System FP

Contents

4.1 Libraries

4.1.1 Library assignment

Function- and initialization blocks are organized as libraries. Standard blocks are assigned, technology-related to libraries:

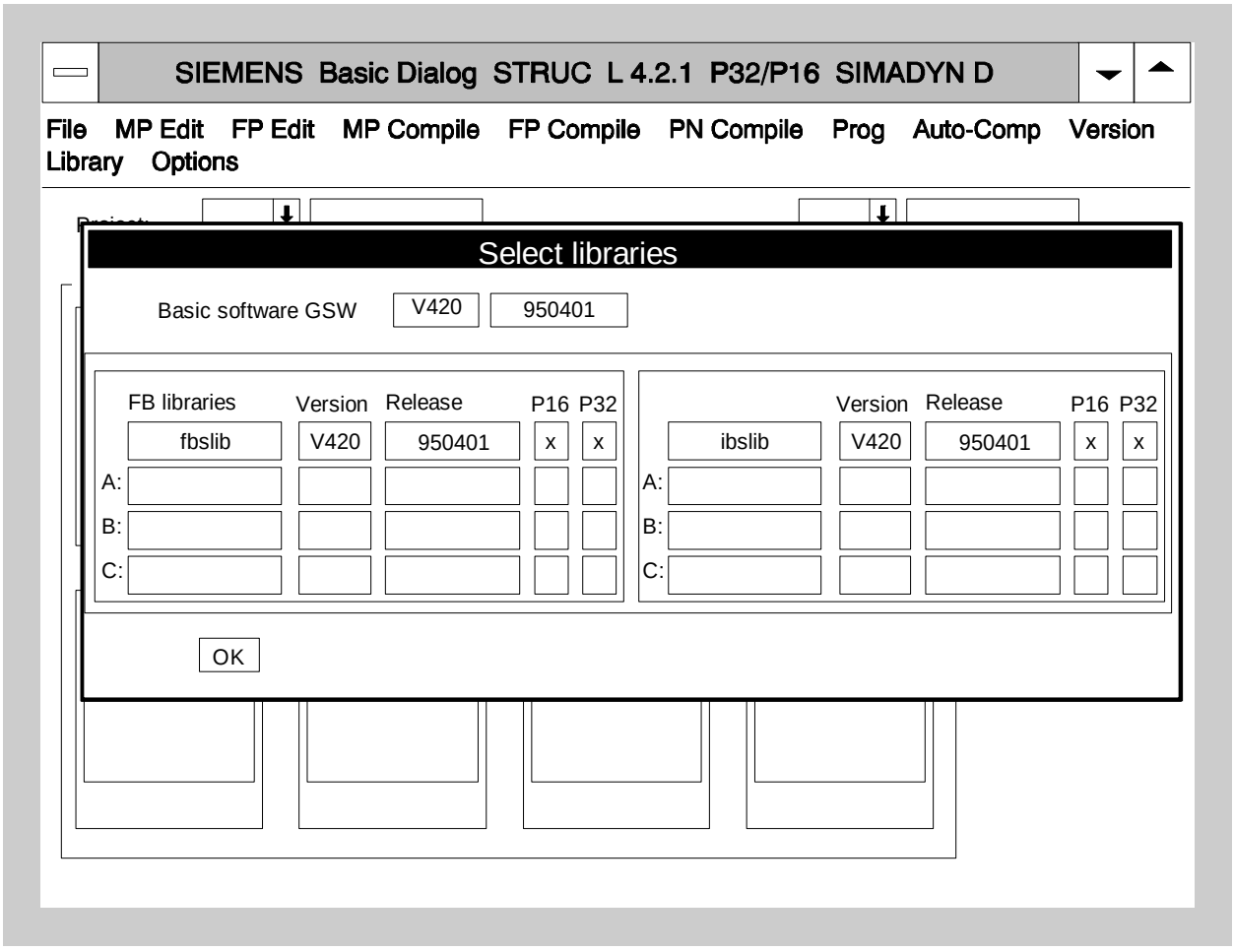
- FBSLIB: Generally applicable blocks for PM-, PG- and PT-processor programs
- FBSL03: Blocks for configuring SIMOVERT D processor programs
- IBSLIB: Initialization blocks for standard boards and standard communication connections

The library name syntax makes a differentiation between:

- FBSxxx: Standard function block libraries
- IBSxxx: Standard initialization block libraries
- FBAxxx: User function block libraries
- IBAxxx: User initialization block libraries

A maximum of 3 FB libraries in addition to FBSLIB, for FP configuring or 3 IB libraries in addition to IBSLIB for MP configuring, can be used to configure a processor program.

The current library assignment is displayed in the basic dialog after clicking-on the "library" function:

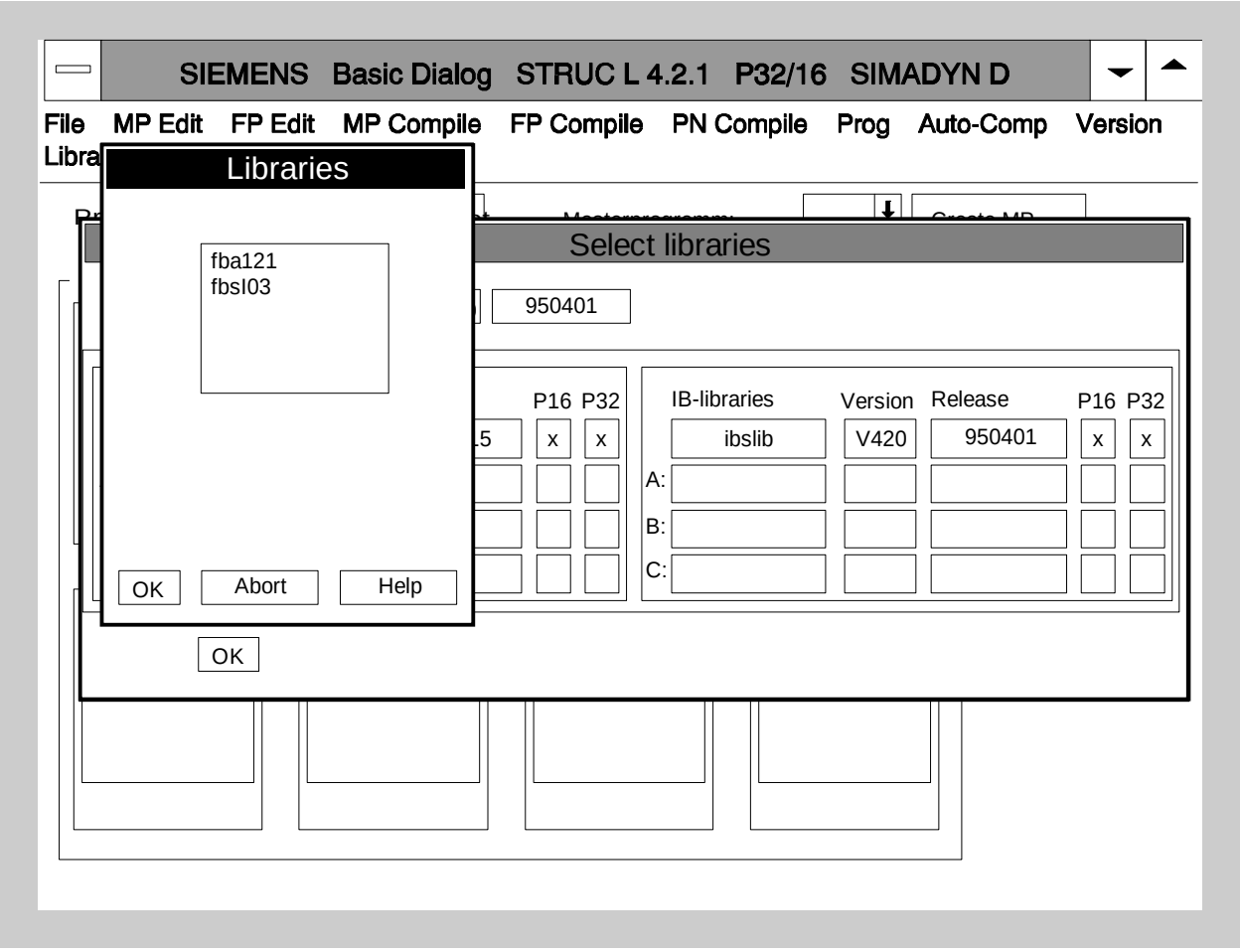


The standard library assignment, shown in the example, can be found after installing the floppy disk set.

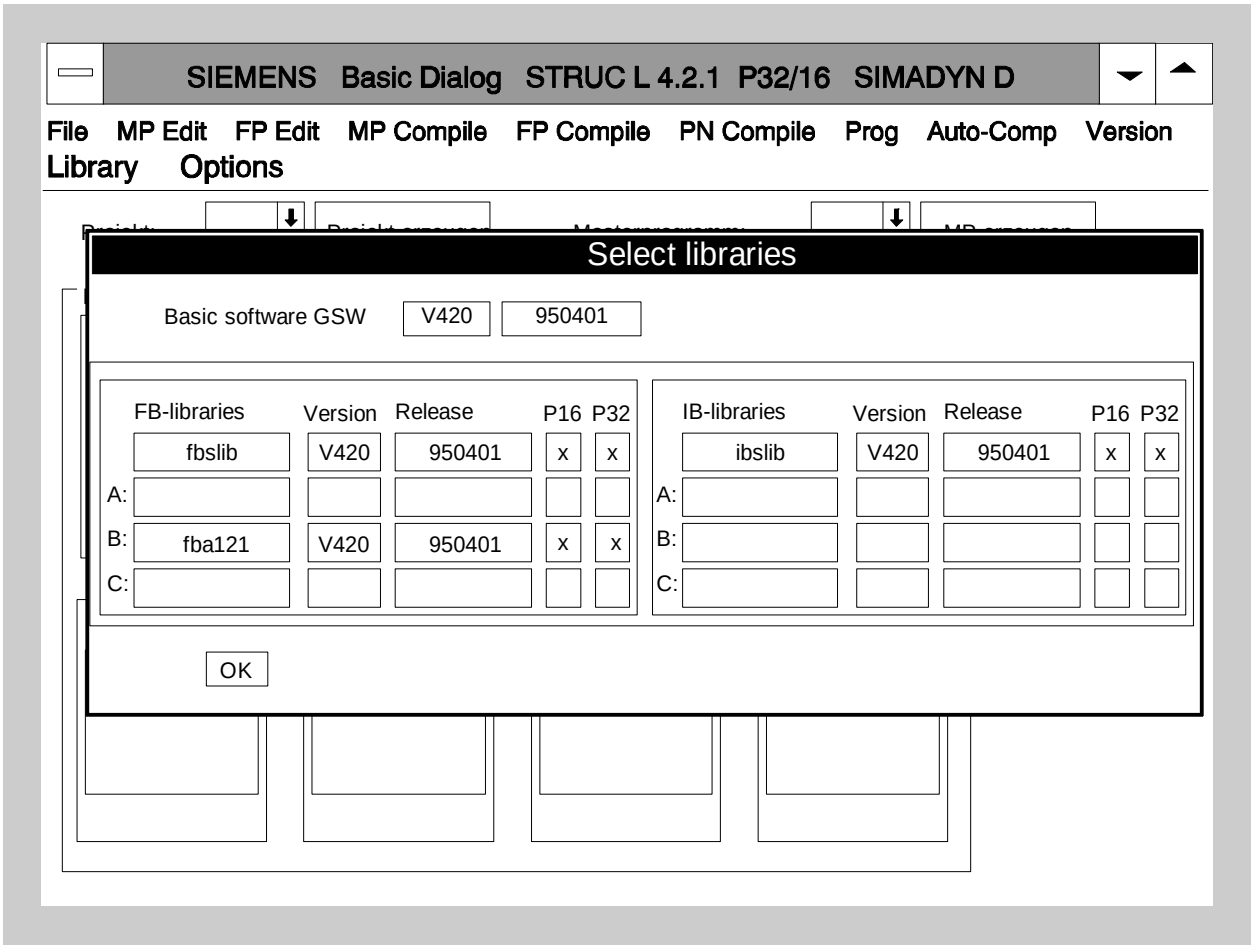
The library assignment is stored in each FP and MP. If the selected library assignment and the assignment selected when generating the FP do not coincide, then the FP-DIA function is aborted with a error message. The same is true for MP configuring for IB libraries. In this case, the current library assignment must be appropriately changed (refer to Section 4.1.3).

4.1.2 Select libraries

After the "select libraries" function was called using the "library" function, in the basic dialog, additional libraries can be assigned as libraries A:, B: and C:. Click on the field behind A:, B: or C: using the cursor, and a window opens with all of the stored FB libraries.



A library can be selected using the cursor. It is then provided with a black background. The selection must then be confirmed with "OK" and its name appears in the field after the library. e.g.: assignment of library "fba121", as library B.



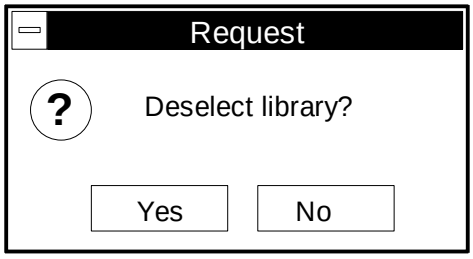
If, for example, the field behind C: is clicked-on, a window opens with all stored FB libraries. In this case, library fba121 is no longer displayed, as it is already assigned.

If this selection is confirmed with "OK", the "select libraries" window is closed, and the system returns to the basic dialog.

The same procedure is true for IB libraries.

4.1.3 Change library assignment

If the library assignment must be changed, then the cursor is clicked on the name of the already assigned library (in the example, library fba121 in field B:). Using the "deselect library ? yes/no", in the opened "request" window", the library assignment is now deleted by clicking on "yes". Now, another library can be asigned, as described in Section 4.2.



4.1.4 Load libraries

When configuring user libraries, before the "select libraries" function is called-up, these libraries must first be loaded into the configuring unit. For STRUC L 4.0, this must be realized at the MS DOS level, it is practical to address using wild cards, e.g.:

```
copy a:f?a121.* c:\struc_w\struc\bib
```

Library fba121 is copied from the floppy disk in drive A: to drive c: in the bib directory.

4.1.5 Version administration and library generation

Libraries are generated using the function block generator. The library version ID and the block names, which are combined to form a library, are the generating parameters. For the standard FBSLIB, the version code for the system software and library version code are identical: 950401V420. The version code comprises:

STRUC L 4.2.1

- Version V420
- Status 950401

For version V4 there are 5 status delivered so far:

	STRUC L 4.0	STRUC L 4.0.1	STRUC L 4.0.2	STRUC L 4.0.3	STRUC L 4.2
–	V400	V400	V400	V400	V420
–	930315	940415	940601	940815	940901

The following compatibility rules are valid for libraries A:, B: and C:

- If the system software- and library options are identical, then a version adaption is possible:
  System software and library are compatible.
- If the versions are not identical, version adaption is only possible, if the system software version ≥ library version:
  System software and library are upwards compatible.

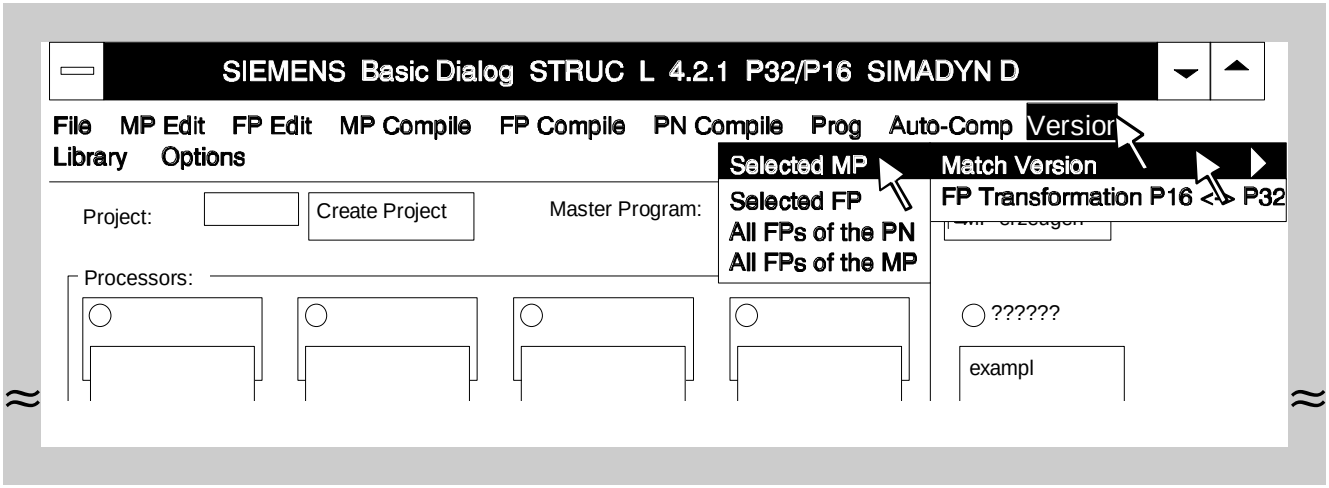
If this system software version changes, the blocks must be adapted, and the libraries generated using modified version code. The insertion of blocks in a library represents a compatible change.

4.1.6 Macro library

From version V 4.2 on not only function blocks, but also with STRUC G created and error free compiled macros are invoked in the same way as function blocks. The invokable macros are stored in the sub-directories of the path **\struc\awd\project\macros.** The macro path with.8 sub-directories in maximum corresponds with a macro library, assigned to a project.

4.1.7 Version adaption with the "Version" menu

Versions can be adapted via the menu, as not all version adaptions can be made using MP- and FP-DIA. An MP- or FP- header mask, changed-over with respect to the old version cannot, for example, be converted using MP- and FP-DIA.



The appropriate MP or FP must be selected, and then using the cursor, **Version, Match Version** and **Selected FP** or **Selected MP** must be selected - the adaption program then starts. If all FPs of the master- or processor program are to be adapted, then the next two menu items can be appropriately selected. In this case either the MP or the PN must be selected.

If MP or FP with an older status is edited, then the editor announces that by:

Version adaption Y/N

Clicking „Y“ carries out the version adaption by the editor. Better use the basic dialog function **Version - Match Version**, because a adaption then can be carried out in all FPs and MPs.

If MP or FP header mask is changed opposite to the old version, then these only can be adapted with the function **Version - Match Version**, but not with the editor.

4.2 Process system FP

The standard system function packet is called SIMD and is configured in the master program as standard.

The user can configure other system FPs with other names till now, but he cannot create a system FP. To create and process a user owned system FP two new sub-directories are installed to the user path from STRUC 4.2.1 on. They contain of all user owned system FPs for 16 Bit- and 32 Bit processors:

- awd\pjsyfp\symp16
- awd\pjsyfp\symp32

They contain the master programs SYMP16 and SYMP32 for editing and compiling the system FP. While delivery the source- and target files of the standard system FP @SIMD is stored there. The user can create his own system FP by new configuring or modificating of @SIMD.

4.2.1 Configuring the system FP

For configuring the system FP in the corresponding master program enter SYS-FP name in the header mask and SYS-FP transmitter FP in the processor mask. This is necessary for selecting the SYS-FP in the basic dialog. Further on all known restrictions must be observed:

- Basic sampling time = 1 ms
- Sampling time T1
- Name convention: @<name> P16
  @<name> P32

Further on observe, that all user system FPs must be adapted to version and compiled for new system libraries. The name of the user system FP should be <> @SIMD, because otherwise the user system FP will be overloaded by the standard system FP, while up-date installation of a new STRUC version.

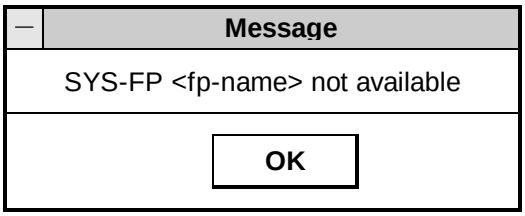
4.2.2 Invoking system FP

Up to now the object code (P16: c@simd.obj, P32: c@simd3.o) and the FP neutral code global (P16: @simd.gfp, P32: @simd3.gfp) are copied into the user directory, while selecting a MP in the basic dialog or after editing MP. From version V4.2.1 on, the algorithm is changed in that way. The name of the system FP is read from the selected MP, the names of the object code files and FP neutral code files, that must be copied, are created and the files are copied from path pjsyfp.

If the SYS-FP is copied completely, then no message does appear.

If the SYS-FP is not or uncompletely copied, then this is confirmed by the following message:

- SYS-FP<fp-name> not available
- SYS-FP<fp-name> not compiled
- SYS-FP<fp-name> not available for P16 and P32
- SYS-FP<fp-name> not available for P16
- SYS-FP<fp-name> not available for P32
- SYS-FP<fp-name> not available for P16 and not compiled for P32
- SYS-FP<fp-name> not available for P32 and not compiled for P16
- SYS-FP<fp-name> not compiled for P16
- SYS-FP<fp-name> not compiled for P32



Drives and Standard Products Group
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