



Release Notes of Concept V2.6 SR1

1. New Features and Functionality in Concept Version 2.6 SR1

1.1 System Requirements:

Win98, Win2000, WinNT (SP5), or WinXP Professional

Win95 is no longer qualified. Win 3.1x is no longer supported.

Minimum display resolution is 800x600 pixel, instead of 640x480 pixel as in previous version

1.2 New Hardware:

1.2.1 Quantum

Stripped Quantum: @3IS loadable is no longer needed

EMUQ loadable must be installed for Quantum PLC without Math-Processor if REAL arithmetic is used with the strip exec(e.g.. CPU 113 03)

1.2.1.1 Quantum I/O Modules:

- | | | |
|---|----------------|-----------------------|
| - | 140 NOG 111-00 | 1/SFB Master (step 2) |
| - | 140 CPS 124-20 | Power Supply |
| - | 140 CPS 114-20 | Power Supply |
| - | 140 NOE 771-01 | Ethernet Module |
| - | 140 NOE 771-11 | Ethernet Module |

1.2.2 Compact

1.2.2.1 Compact Expert and Communication Modules:

1.2.2.2 Compact I/O Modules:

1.2.3 Momentum

1.2.3.1 Momentum Expert and Communication Modules:

170 ANR 120-91 Analog Module

1.2.3.2 Momentum Processors:

1.2.4 Atrium

180 CCO 241 11 Atrium 586 CPU, 2 * Interbus

1.3 New Features of Programming Software Concept Version 2.6

Interrupt Sections on High End Quantum

- IEC Timer-Interrupts are supported on 140-CPU-x34-1xA (High End) and on 32-Bit Simulator
- IEC IO-Interrupts are supported on 140-CPU- x34-1xA (High end), NOT on any Simulator
- Section disable bits controls execution of an interrupt section
- EFBs for interrupt control are available
- EFB for task-safe data read/write (I_MOVE function)
- Floating point operations are supported in interrupt sections
- HSBY and interrupt sections are mutually exclusive
- Some EFBs are 'forbidden' to use in an interrupt section. Those EFBs are listed in file "AI.FFB" and are checked by the analyzer.
- New online viewer for interrupt states provides diagnosis support

CAUTION LIMITATIONS

- HSBY is not supported with IEC Interrupt Sections
 - LL984 is not supported with IEC Interrupt Sections
 - 16-Bit loadables are not supported with IEC Interrupt Sections (e.g. ULEX for NOA611 and ESI062) use NOA622 instead of NOA611
 - Do not process an application with interrupt sections with Concept V2.5!
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Global Variables

Located variables are now accessible from DFBs. This "Global Located Variables"-feature is enabled by using the "IEC-Extensions" dialog or by setting the following switch in the "CONCEPT.INI" file:

```
[Common]
AllowLocatedVarsInDFB=1
```

This setting is only stored in the "CONCEPT.INI" file and no other Desk-top-file. The setting effects the DFBs or the program. If you set the switch in any tool, you set it for all Concept tools simultaneously. Global Located Variables can be declared in DFBs and must be referenced to in the program. A global variable cannot be modified in the program except for its initial value and comment.

Changes of data type or state RAM location need to be done first in the DFB(s) then on program level. These changes will cause a complete download!

The analyzer establishes a global-relationship during "Analyze Program".

- Global Variables are currently not earmarked in the search engine and in the status line.
 - The search engine in the program is currently not enhanced to search for cross-references of global variables also in used DFBs.
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Extended Data Type Management

There is a restriction on DTY file with max. size of 64k in the local DFB folder.

To extend the limitation the user is now able to use an include file (*.INC) instead, which lists DDT files, which can be larger than 64k. The contents of DTY and DDT files are identical. This is only implemented for the local DFB folder.

The existing DTY editor is extended to edit DDT files.

There is a new INC-file editor for editing INC-files.

Hints:

Changes in the INC-file or a DDT file (differently from DTY-files) lead to very comprehensive data type checks.

Minor changes in a DDT file (e.g. change of comment) will lead to NOT EQUAL. This is different to the handling of minor changes in DTY files.

Modconnect-Tool	<p>The Modconnect Tool was adapted to be compatible with Concept 2.6. Some effort was made to import the new module capability attributes and to include plausibility checks with useful messages.</p> <hr/>
History of opened Projects	<p>In the File-Menu the four recently opened programs/DFBs are listed. The entries are stored in the "CONCEPT.INI" file.</p> <hr/>
Message Window to File	<p>It is now possible to save the contents of the message window to a file if the message window is open. "Menu Window->Save messages"... is active while the message window is open.</p> <hr/>
Color Schemes	<p>Concept V2.6 introduces new color schemes especially for animation instead of a fixed set of colors, as implemented in previous versions of Concept. There are predefined sets of colors for various aspects of displayed information. To select one of the predefined color schemes, Concept V2.6 introduces a new entry "Color Scheme" in the [Colors] section "CONCEPT.INI" file. Please refer to help.</p> <hr/>
User Defined Online Event String	<p>It is now possible</p> <ul style="list-style-type: none"> - to override the predefined strings mapped to online events or - to associate text strings to user defined numbers set by the EFB ONLEVT. <p>The section [Online Events] in the project related ini-file "<project>.INI" file may contain items like</p> <p style="padding-left: 40px;"><error code>=<string></p> <p>For details and rules please refer to help.</p> <hr/>
Concept Security	<p>Added new options to support secure applications in Concept Security (CCEPTSEC) and Concept.</p> <ul style="list-style-type: none"> • Username Supervisor now requires a valid password. You will be prompted to enter a password at the first entry in Concept security • Minimum password length is 6 • Enable encrypted logging • New checkbox in project property dialog "Secure Application" <hr/>

New configuration extension available for 140-CPU-x34-1xA High-End Quantum A CPUs Security Parameters

- Login password
- Automatic PLC logout
- Disable/enable write from NOE/NOM

WARNING

UNINTENDED SYSTEM OPERATION

Use of network adapters other than those specified will not prevent write access from that adapter to a write protected Quantum PLC.

- Use only those network adapters specified.

Failure to follow this precaution can result in death, serious injury or equipment damage.

Specified Network Adapters: 140 NOM 2xx 00 140 NOE 211 x0
 140 NOE 251 x0 140 NOE 311 00
 140 NOE 351 00 140 NOE 511 00
 140 NOE 551 00 140 NOE 771 00
 140 NOE 771 10 140 NOE 771 01
 140 NOE 771 11

- Modbus+ Write Restriction Table

WARNING

UNINTENDED SYSTEM OPERATION

For a bridge with write access, all nodes on all nonlocal network segments will have the ability to write to the write-restricted Quantum PLC.

To prevent this condition, do one of the following

- Do not use bridges, or
- Do not allow write access to bridges, or
- If you must give write access to a bridge, place only those devices that you want to have write access privileges to the Quantum PLC on the bridged network segments.

Failure to follow this precaution can result in death, serious injury or equipment damage.

These features can be configured for the (old) Quantum High-End NON-A controllers, but this has no effect!

Note: Please refer to the Schneider Electric Security Features for 21 CFR Part 11 Compliance User Guide 840 USE 200 00 for detailed description of these features. This User Guide can be found on the Modicon.com web site.

Concept LOG File

- Encrypted logging with file extension “.ENC”
 - View tool for inspecting an encrypted log-file
- More detailed logging of WRITE actions to the PLC
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New Fixed LOG File Address Format

A fixed date and time format in the Concept LOG file can be selected via CONCEPT.INI file in the section:
[Logging]
DD_MONTH_YYYY=1 leads to LOG-file string “24-Dec-2002 14:46:24”

New and changed EFBs

COMM Library

New EFB **PORTSTAT**, reports the current Modbus-Port status.

Support:

- On Quantum and Compact only the local Modbus port is supported,
- On the Momentum two Modbus ports supported
- No support for Atrium.

Version changed for EFBs **ICNT** and **ICOM** due to modified group name

EXPERTS Library

Version changed for EFBs **MVB_RED** and **MVB_INFO**, omitted in Concept 2.5

SYSTEM Library

New EFB **PRJ_VERS** retrieves project version and project name

New EFB **GET_IEC_INF** in group “System” to read new IEC error flags

New EFB **RES_IEC_INF** in group “System” to reset new IEC error flags

New EFBs in group “Interrupt” for interrupt handling and safe move

I_LOCK, **I_UNLOCK**, **ISECT_OFF**, **ISECT_ON**, **ISECT_STAT**, and **I_MOVE**

CONT_CTL Library

Bumpless behavior of the output of EFB **PIDFF** when switching from manual mode to automatic mode.

LIB984 Library

EFB **PUT_4X** now works with last configured register

ANA_IO Library

EFB **XBP** Bug fixed for Quantum with XBE and DIO via NOM if analog module is on identical slot number as the NOM

Atrium with 2*IBS

Atrium 586 EXEC now supports two IBS boards. Released after Concept 2.6 SR1.

Atrium 586 no LL984 support

Atrium 586 EXEC does not support LL984 sections. This CPU is designed for IEC support only. Released after Concept 2.6 SR1.

COMM Module 170NOE771xx

When adding an NOE module to the backplan, you no longer can double click on the detected module to add the module to the IO Map. The module needs to be configured off line and downloaded to the PLC.

Project Browser	<p>Detailed view of</p> <ul style="list-style-type: none"> • Usage of DFBs per section • Usage of DFBs in the project • Transition sections per SFC section • Status of text sections • Checks of coupling of a SFC section with a SFCCTRL EFB • Properties of Interrupt sections for a selected group
Optimize Section, a new Project Browser feature	<p>An 'Optimize Section' method has been added to reduce the amount of memory used in FBD and LD sections.</p> <p>Memory used by section objects is compressed and gaps are eliminated (like the 'Optimize' method for complete programs).</p> <p>The internal states of EFBs (e.g. counters) or instance data of DFBs located in the section are reset! <u>The optimized section can be downloaded via 'Download Changes'.</u></p>
Show Comments of Data Type Components	<p>Comment of elementary components of data structures is now shown in</p> <ul style="list-style-type: none"> • Status line of FBD, LD, ST, IL, SFC • Variable Editor when setting initial values of variables • Watch window in animation <p>Comment is not yet visible in</p> <ul style="list-style-type: none"> • Search Engine • Pin-Connect dialog in e.g. FBD
Extended command line parameter for 'Autoconnect Feature'	<p>For advanced users only</p> <p>Call Concept: Concept.exe TESTPRJ.PRJ /C=<Parameter></p> <p>The following combinations are valid parameters:</p> <p>Modbus : "/C=[x,]MB:m[,ASCII]" x : COM-Port = 1..4 (optional, default = 1) m : PLC Node = 0..255 ASCII : Mode = ASCII (optional, default=RTU)</p> <p>Modbus+ : "/C=[x,]MBP:[??,]n.n.n.n.n" x : MB+ Port = 0..1 ?? : 2 ASCII-characters, ignored in Concept, used by specific customer tools n : PLC Node = 0..64</p> <p>TCP/IP : "/C=[x,]MBT:m.m.m.m" "/C=[x,]MBT:HostName" ("LocalHost"=Connect to PLCSIM32) x : Bridge MB+Index = 0..255 m : IP-Address = 0..255</p>
Concept Launcher Tool	<p>The new Concept tool CCLaunch.exe for a distributed Modbus+ network provides the functionality to start Concept with suitable command line parameters and to connect to a PLC. The command line parameters are read from a file, which describes topology of the network. The file contains following information:</p> <ul style="list-style-type: none"> • The description of the distributed Modbus+ network's topology • PLC names • Projects assigned to the PLCs <p>Concept will be started with the parameters target PLC, start and target segment. The assigned project will be opened and the connection to the PLC established. This does not work with password protected PLCs.</p>

2. Quality Improvement and Bug Fixing:

EXECs	<p>Stop code 200 on 16-bit controllers after Start-Stop if application was downloaded with upload-information and Quick-Write was performed (new stripped EXECs / Loadables required).</p>
RDE	<ul style="list-style-type: none">• <i>After start RDE must be set manually to animation mode, this is no longer automatically</i>• Several bugs fixed in Reference Data Editor, especially the 'Terminate Animation First' bug• Stop of animation after receiving errors from PLC• Improved indicator "Animation On/Off"• Variable names are normalized when they were entered differently according to their declaration (mixture of upper/lower case)• maximum of rows is limited to 250• animation status is shown in RDE caption
ST-Language	<ul style="list-style-type: none">• The memory usage of ST sections was reduced. The memory consumption of ST section is now always optimized. <p>Several bugs are fixed for IEC ST language:</p> <ul style="list-style-type: none">• Failure of downloading protected ST/IL DFBs <p>Some warnings were introduced for not correctly assigned ANY-pins of FBs</p> <p><u>Rules:</u></p> <ul style="list-style-type: none">• All ANY inputs/outputs MUST be assigned (outputs via '=>')except the ANY output of Functions.• Error Msg for unassigned ANY outputs via '=>'. Assignment of ANY outputs outside the FB call is forbidden anyway.• Error message for unassigned ANY inputs (independent of optional warning for not assigned non-ANY pins).
Import/Export of ST/IL	<p>Added feature text export of ONE text section to an IEC-text file via IEC-text export/import.</p>
SFC-Language	<p>Improvements for SFC:</p> <ul style="list-style-type: none">• GPF fixed concerning 19 sequentially opened alternatives• The animation of DFBs in transition sections was improved.• Show comments for data structure components on status line.
Process Diagnostics	<p>Stack fault on PLC fixed concerning frequent negations in diagnosis networks.</p>

Stop Codes	<ul style="list-style-type: none"> • Improvement of PLC stop code handling in IEC run time. • Stop code is now displayed in Concept's status line immediately after the stop of the PLC. <p>Any download/download-change is prohibited while the PLC is in stopped mode with a stop code that cannot be tolerated (any stop code other than 0x8000, 0x4000, 0x0080 or 0x0010).</p>
Show Host Name	<p>The name of the host Concept is connected to is displayed in Concept's caption line if the host name is available.</p>
Reduce Multiassignment Warnings	<p>A new CONCEPT.INI file option allows the reduction in the amount of warnings in the message window concerning multiassignments.</p> <p>[Warnings] Multiassignment=x x=1 --> Warning if there is at least a write to a variable x and a component x.c. x=0 --> Warning only if there is a multiple write to a variable x as a whole.</p>
Project dependent INI file	<p>There is now a project dependent INI file, which contains up to now the user defined text strings to override standardized online event texts.</p> <ul style="list-style-type: none"> • This .INI file is not included in SaveAs, Backup, Upload, but in Archiving • Subject to extension
Archiving	<p>Improved according to new features and functionality.</p> <ul style="list-style-type: none"> • Project related INI file • Include file • DDT file(s) • Viewer to show the contents before un-packing
Concept Converter DBconv	<p>Project browser group information in DFBs is now kept in ASCII file.</p>
Configuration	<p>The '170 ANR-120-91' in addition to 170 ANR-120-90 for Head and '17A-ANR-120-9X' for IObus purpose.</p>
PLC Error Messages	<p>Some error messages from PLC are improved:</p>
Upload Profibus DP Configuration	<p>The upload of the Profibus DP configuration is now implemented. To enable Profibus upload, activate the "Add Upload Info" button in the CRP parameter screen.</p>

Miscellaneous Bug Fixes

ModConvert:

ModConvert tool created variable names like _300001 which are not IEC-compliant. Concept 2.6 will no longer tolerate those names which do not contain any letter. Programs can be converted using the Concept Converter with command line switch ,/M' via import of an ASCII file. Variable names like _300001 are converted to V300001.

Search/Replace of variable names in the Variable Editor

If more than 50 variables were renamed according to the given search pattern there was a certain risk of

- Renaming variables which do not match the search pattern
- Renaming not all variables that match a given search pattern
- Renaming variables with an unexpected name

GPF when deleting all characters from the filter box in variable look-up

When doing a variable look-up if you used the filter to narrow the search and used the delete key to clear the text box you would get a GPF. This has been corrected
