DigiVis 500

Version 1.0 SP1

Release Notes

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Section 1 Introduction

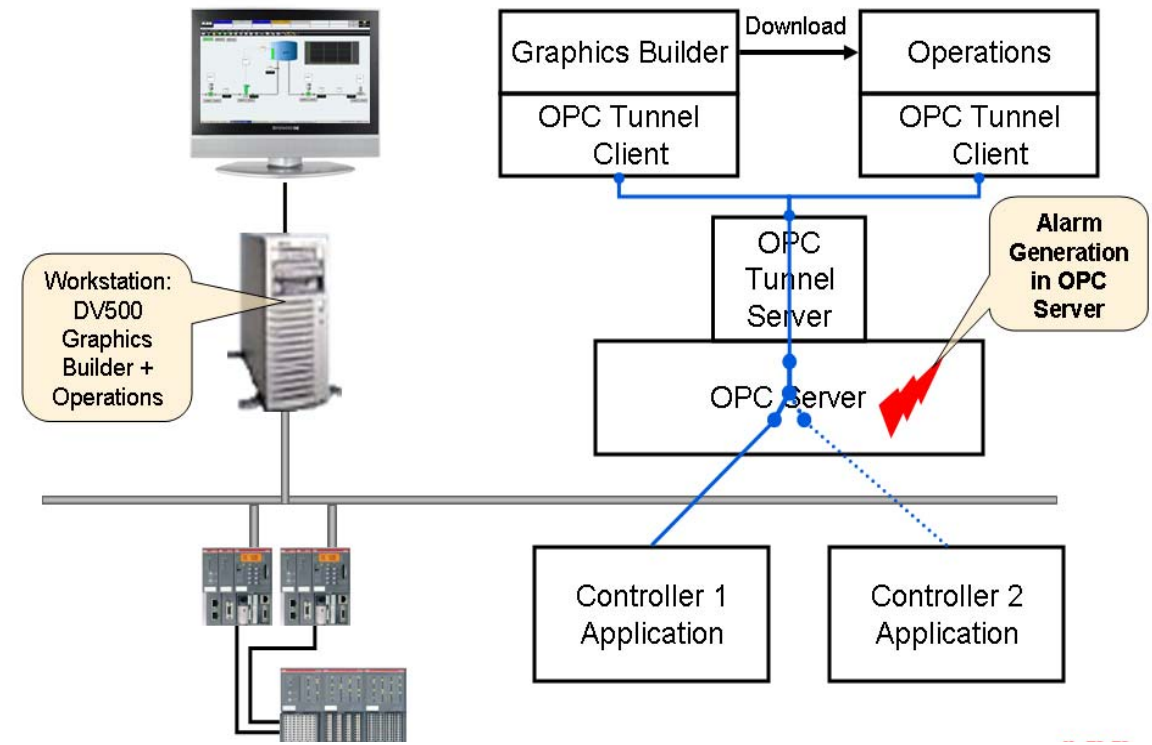
This document represents the release notes for the DigiVis 500 software and its components that provide HMI functionality for the AC 500 PLC controller family. DigiVis 500 provides various forms of standard displays and graphic tools to create customized graphic displays. In addition reports, logs and system messages are also generated. The process data for the DigiVis 500 is made available by means of the CoDeSys OPC Server which is part of the AC500 product suite.

DigiVis 500 V1.0 SP1is currently released for use only with the small and medium system of AC500. Refer to Appendix A, System Configurations on page 19 for definitions of small and medium system.

This document provides a brief overview on the functionality and enumerates known problems encountered in the final testing phase of DigiVis 500 V1.0 SP1 release. Workaround information is provided to help overcome the problem. The document contains additional notes that may be valuable to end users and service personnel working with the product. This document is the initial release notes and is included in the software CD.

Basic Architecture

The architecture for a DigiVis 500 system containing one workstation with Graphics Builder and Operations is shown below. The architecture can be scaled up to accommodate more controllers, OPC Servers and DigiVis 500 nodes.



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Product Description

The DigiVis 500 software is the HMI solution developed for the AC 500 PLC controller.

It consists of two major components called *Graphics Builder* and *Operations*. Other components are *Configure tool*, *OPC Tunnel software*, *DigiBrowse* and *Security Lock*.

The software is compatible for machines running Windows XP Professional SP3/Windows 7 Professional SP1, 32-bit Operating System.

Windows 7 Professional SP1, 32-bit is referred to as Windows 7 SP1 throughout the Release Notes.

The *Graphics Builder* application is used to configure DigiVis 500 standard graphic displays and to create customized graphic displays. The types of displays constitute overview display, graphic display, group display, trend display, reports, logs, information display, web display and system messages. Graphics Builder also includes pre-engineered Tag Type library with built-in faceplates for certain standard function blocks used by the AC500 controller.

The *Operations* application is the runtime component for the various displays configured in Graphics Builder and is used to visualize the process in runtime. By means of graphics displays and faceplates, operator can monitor and control various operations on devices being controlled by AC 500 PLC.

The process data for the DigiVis 500 is available from AC500 CoDeSys OPC Server through ABB OPC Tunnel. The process data constitutes of OPC DA and OPC AE Items. OPC Tunnel software is bundled with DigiVis 500 which simplifies DCOM configuration of OPC Server and Client located at different machines applicable for distributed configuration.

Below is a brief summary of the DigiVis 500 components and features:

- *DigiVis 500 Graphics Builder* - Engineering Tool for graphics display development with built-in Tag Type Libraries for standard function blocks of AC500 PLC. Standard Faceplate associated with each Tag Type for runtime interaction and control.
- *Tag instantiation* - feature for mapping OPC items of particular tag to respective faceplates.

- *DigiVis 500 Operations* - Runtime visualization of process variables, alarms, logs and reports. Includes trends and basic historian functionality.
- Configuration of data communication between DigiVis 500 nodes and OPC Server (located in same / different machines) through ABB OPC Tunnel software.
- Easy integration with AC500 (HA) controllers. Integrate data from multiple AC500 controllers (up to 30) into the same OPC Server.
- Data from multiple OPC Servers (up to 10) can be made available in the same operator station / graphic display.
- *Security Lock*- feature for user access control for configuring maximum of 16 user profiles and 1000 users with display specific access rights.
- *DigiBrowse*- feature for offline archive viewing and analysis of Trends and logs with csv / Excel compatibility.
- *Dual Monitor and Web Runtime features*- web configuration and web runtime display for integrating process cameras with Web Server interface or view HTML documents that might contain standard operating procedures of schematics needed for maintenance.
- Licensing model based on number of OPC Signals (OPC Items).

Software Components and Compatibility

Table 1 lists the versions of DigiVis 500 software components tested at the time of the release. These components are packaged and made available in DigiVis 500 software CD.

Table 1. Packet Assembly List

DigiVis 500 Application	Version
DigiVis 500 Graphics Builder	V1.0 SP1 Build 7765
DigiVis 500 Operations	V1.0 SP1 Build 7765
ABB OPC Tunnel	V 1.44 Build 1707
AC500 Standard Tag Type Library	V1.0

Table 2 lists the AC500 Engineering software components and Operating System that are compatible and recommended with DigiVis 500 software.

Table 2. Compatible Components

Applications	Version
PC Operating System	MicroSoft Windows XP Professional, SP3/Windows 7 SP1
CoDeSys Programming Tool	PS501 V2.1.0 / V2.3.9.28
CoDeSys OPC Gateway	PS501 V2.1.0 / V2.3.9.21
CoDeSys OPC DA and AE Server	V3.3.2.31
CoDeSys OPC Configurator	V3.3.2.31
CoDeSys AE Configurator	V1.0.0.2

For recommended PC equipment, refer to Section 1, DigiVis 500 Getting Started Manual.

Section 2 Known Problems

Table 3 lists the issues that exist and affect the operation of the system or product at the time of this release. Workarounds, clarifications, or helpful hints have been provided for each issue wherever possible.

Table 3. Known Issues

Problem	Workaround, Clarifications and Hints
21873 CoDeSys datatypes LINT, LWORD, ULINT, DWORD, LREAL, USINT and WORD are not supported by DigiVis 500.	The following DigiVis 500 supported datatypes must be used in CoDeSys application: ARRAY, BOOL, BYTE, DATE, DINT, DT, INT, REAL, SINT, STRING, TIME, UDINT and UINT.
21884 Operations Message list displays only 7 characters for Message text in Value format and Long format.	Limit the Message text configuration to 7 characters in AE Configurator.
21885 Operations Message list displays only 29 characters for Long text in Long and Long Limit format.	Limit the Long text configuration to 29 characters in AE Configurator or Tag list as per Alarm attribute mapping.

Table 3. Known Issues (Continued)

Problem	Workaround, Clarifications and Hints
23150 Upon download of CoDeSys application to AC500 controller, the OPC Item values have BAD quality for duration up to the Reconnect Time (typically 10 - 30 seconds). During this time: • All trend curves of the downloaded controller are interrupted. • For each interrupted trend display, an internal DigiVis alarm is generated. • Graphic and other displays with those OPC items show red crosses and no values. • Operation log contains “#######” instead of values if ‘read’ being performed at this time.	The time required by AC500 to update the configuration and by the OPC Server to reconnect to the AC500 and update the database with the current values.
23160 Tag instantiation does not differentiate between Function Blocks and structured datatypes within Function Blocks For example, AC500 Standard Library uses structured datatype CLOCK having same elements as TON /TOF /TP function blocks. Thereby unwanted instances of TOF, TON, TP appear in tag list.	Identify unwanted instances and ignore while instantiating. Delete unwanted tags manually after instantiation. OR Use corresponding HA blocks instead of standard blocks wherever applicable.
23225 Keyboard operation for “Start” and “Show file” in report not working. Hot Keys (ALT+S) not working.	Use mouse for the respective operations.

Table 3. Known Issues (Continued)

Problem	Workaround, Clarifications and Hints
23305 Message list retains old alarms after restart / crash of OPC Server. This leads to duplicate entries in alarm list.	DigiVis 500 Operations keeps the alarms from the server until the server reconnects after a crash or shutdown. In this case the server is the Tunnel Server which keeps the connection to DigiVis 500 Operations throughout the OPC Server restart. Handling: Restart the OPC Server again through the OPC Tunnel through the Tunnel tray icon (stop and start of service).
23283 F1 Help key is operation inconsistent. Sometimes F1 key does not bring up the Help window to the foreground. Especially when the Help window is already open and is minimized.	Press F1 key again.
22722 CoDeSys and DigiVis 500 Graphics Builder use same extension (*.pro) for project files. Double clicking directly on *.pro file invokes last installed application.	Open *.pro file by opening the respective application first (CoDeSys or DigiVis 500 Graphics Builder).
23380 PLC State Alarm not received at DigiVis 500 Operations from OPC Server when network connection between PLC and OPC Server is lost.	No workaround exists for this release.

Table 3. Known Issues (Continued)

Problem	Workaround, Clarifications and Hints
23598 Writing value to a variable in Graphics Builder variable list using ‘Write variable’ option of context menu not possible if that variable is not used in DigiVis Operations (Graphics Display, Trend Display) or in Graphics Builder Value Window. This is observed with AC500 OPC Server.	Use ‘Enter variable’ option of context menu to add the respective variable into value window and then write required value to the variable.
23722 Slow response of OPC Read/Write operations during high load condition of machine (>70% CPU load).	Ensure that PC running OPC Server is not loaded due to running unrelated applications.
22777 Variable of datatype TIME in CoDeSys application is represented as datatype UDINT in DigiVis 500 OPC Item list.	In the DigiVis 500 OPC Item list dialog, manually change the variable to datatype TIME.
23964 In DigiVis 500 alarm list, Faceplate does not open on double clicking a Tag Alarm, if the default name attribute settings in Alarm mapping window are changed.	Use default Alarm mapping settings for the Name attribute.
24098 On restart of PC during acquiring state of Digivis 500 Excel report, the status displays ‘?’ however the Excel report data is retained.	On restart DigiVis 500 Operations does not know the number of samples contained in the Excel file any longer. Handling: No workaround exists for this release.

AppendixA

AC 500 Tag Type Library

The Standard Tag Type Library in DigiVis 500 consists of tags and faceplate definitions for the function blocks of AC 500 Standard Library.

A Tag Type holds standard faceplate that can be used for controlling the particular object.

Table 4 gives a list of AC 500 function blocks provided with Tag Type Library.

Table 4. AC 500 Tag Type Library

Tag Type Name	Function Block Description
HA_CS31_DIAG	HA CS31 Diagnostic
HA_CONTROL	HA Control
PD	Proportional and Derivative Controller
PID_FIXCYCLE	Controller with Fixed scan time
PID	Proportional, Integral and Derivative Controller
RAMP_REAL	Ramp Generator for REAL Values
RAMP_INT	Ramp Generator for INT Values
CTUD	UP / Down Counter
LIMITALARM	Comparator with Alarm Function
HYSTERESIS	Comparator with Hysteresis Function
CTU	Up Counter

Table 4. AC 500 Tag Type Library (Continued)

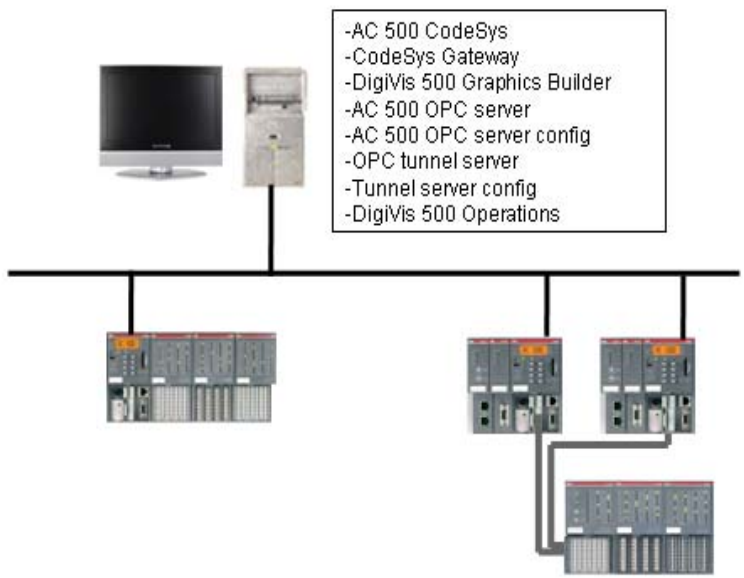
Tag Type Name	Function Block Description
CTD	Down Counter
CLOCK	Setting / Reading the clock and Date
GEN	Waveform Generator
TON	On Delay Timer
TOFF	Off Delay Timer
TP	Pulse Timer

System Configurations

Different system configurations are possible with DigiVis 500. Some typical cases are shown below. The information is indicative and for reference purpose only. For details about DigiVis 500 system limits, refer to Section 1, DigiVis 500 Getting Started Manual.

Small System

Small system typically consists of one workstation running all components of Engineering and Operations software. The system has typically 1 OPC Server, 1 operator screen and 1 or 2 AC500 controllers in single or HA configuration.



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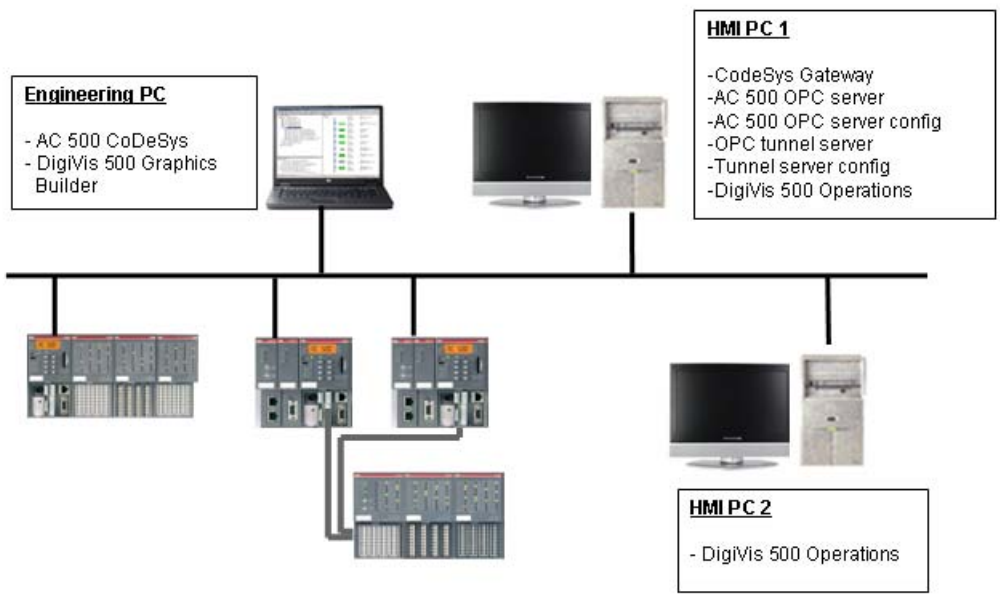
Medium System

A medium system typically consists of a separate station for Engineering and one or more stations for Operations. The system has typically 1 OPC Server, 2 or 3 operator screens and 3 or 4 AC 500 controllers in single or HA configuration.



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Further Steps and Getting Started

For further information regarding Installations, Project configuration and Licensing options refer to

- Getting Started Manual (Document 2PAA104347R0203.pdf)

For information about Graphics Builder engineering and operations, refer to

- Engineering Manual, Graphics Builder (Document 2PAA104345R0201.pdf)
- Operators Manual, Operations (Document 2PAA104346R0201.pdf)

Information about Security Lock feature is available in

- Engineering Manual, Security Lock (Document 2PAA104348R0201.pdf)

Information about First Steps is available in

- First Steps Tutorial (Document First Steps with DigiVis 500 and CoDeSys OPC Server 3.pdf)

All the above manuals are available in the DigiVis 500 CD.

Further documentation regarding CoDeSys OPC Server Release notes and AC500 HA sample configuration are available in PS501 AC500 CD for reference.

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http://www.abb.com/plc
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ABB Automation Products GmbH
Wallstadter Str. 59
68526 Ladenburg
Germany
Phone:+49 6221 701 1444
Fax:+49 6221 701 1382
e-mail : plc.sales@de.abb.com