Release Notes PSV Version 8.52

Installation

The installation of the PSV software requires Windows 2000 (SP4), Windows XP (SP2) or Windows Vista (32-bit only, Desktop version of the software). In order to carry out a successful installation under Windows 2000/XP/Vista you must be logged on with "Administrator" rights. Generally, we recommend Windows XP as operating system.

To change all available settings of the PSV data acquisition software, the users must have the access rights of the "Power Users" group or higher. The desktop version of the software can be operated by restricted users. For operating the data acquisition software as restricted user please see the installation instructions of the driver of the National Instruments data acquisition boards below.

The following description assumes that your DVD-ROM is assigned to drive "E". If a different drive letter is used you have to replace the "E" by the proper drive letter.

All important information on the system's hardware is stored in the software protection key (hardlock). It is required that the proper key is attached during the installation process. You can review the current system configuration and the hardware components on a dialog during the software installation. Only Polytec can change the information stored in the software protection key. If the hardlock should ever contain false system information please contact Polytec.

To install the PSV acquisition software please follow the instructions in the order they are listed below. If one of the steps has already been executed it can be skipped. Steps 3 to 14 are not necessary for an installation of the Desktop version.

To update an existing installation of the PSV acquisition software steps 1 to 14 might be necessary to update the software on your system. It might also be necessary to update the hardlock of your system. If you have received a hardlock update file together with your copy of the PSV software please execute this file on your PC with the hardlock attached prior to installing the PSV software.

When installing the PSV software you have the option to install the new software side by side to the already installed older software so that you can switch between the two software versions. If you are using software versions prior to PSV 8.2 please read the limitations section for more details.

If you do not intend to use the older software anymore we recommend uninstalling the old software before you install the new one.

To read additional documentation you need the Acrobat Reader. If you have not installed the Acrobat Reader already, you find it in the "Acrobat Reader" folder of the "System Component Update DVD".

1. Updating Windows 2000/XP

- It is strongly recommended to install the latest service pack for Windows 2000/XP if it is not already installed on your system. Some service packs (English, German, Japanese) are included on the "System Component Update" DVD in the directories "ServicePacks\Win2000_SP4" and "ServicePacks\WinXP_SP2". Service packs for any other languages can be downloaded directly from Microsoft.

- Microsoft DirectX Multimedia Libraries are used for data acquisition and live video. To install DirectX on your Windows 2000/XP system do the following:

  1. Insert the Polytec PSV DVD.

  2. In Windows explorer navigate to the folder "E:\DirectX" and double click "DXSETUP.EXE".

  3. The setup program will guide you through the installation procedure.

- PSV uses graphics libraries that support hardware acceleration of the graphics board of your PC. If you are using the desktop version we strongly recommend updating the drivers of the graphics board for your PC. The PSV installation contains example files to test the display of area data. If you still experience any problems displaying the area data you might want to disable the hardware acceleration on your PC. To do this, do the following:

  1. Click the right mouse button on your desktop and select "Properties".

  2. Choose the page "Settings" and click "Advanced".

  3. Choose the page "Troubleshooting" and move the "Hardware acceleration" slider to the left step by step until the problems with the displaying the area data disappear.

2. Updating Windows Vista 32-Bit

- For some applications it is required to install hotfixes for Windows Vista 32-Bit.

- The Windows help program (WinHlp32.exe) is not included in Windows Vista. Therefore please install the hotfix "KB917607 - Helpfiles 32Bit".

- To install the hotfix, you have to follow these instructions:

  1. Insert the Polytec PSV DVD.

  2. In Windows explorer navigate to the folder "E:\Windows

Vista\Hotfixes\KB917607 - Helpfiles 32Bit" and double click "Windows6.0-KB917607-x86.msu".

3. Please follow the instructions given.

4. The hotfix will be installed.

3. Installing the NI-DAQ 7.4.1 software (only required if a NI-Acquisition board is installed)

- These steps for Windows XP and Windows 2000 are very similar. If it's necessary the differences are mentioned.

- The current version of the NI-DAQ software is 7.41. If an earlier NI-DAQ software version is already installed in your system, you have to remove it first. In most cases this will be the NI-DAQ software version 6.93 with the NI Measurement & Automation Explorer Version 2.2.0.

- To remove the NI-DAQ software, you have to follow these instructions:

  1. Click the "Start" button in the taskbar and select the "Control Panel". Click "Software".

  2. Select "NI-DAQ 6.93" and click "Remove". Follow the instructions given. Select "NI Measurement & Automation Explorer 2.2.0" and click "Remove". Follow the instructions given.

- To install the new NI-DAQ software, you have to follow these instructions:

  1. Insert the Polytec PSV DVD.

  2. In Windows explorer navigate to the folder "E:\National Instruments\NiDaq 7.41 Traditional" and double click "SETUP.EXE".

  3. The setup program will guide you through the installation procedure. Please do not change the proposed standard settings.

  4. After the installation you are requested to restart the computer. Restart the computer.

  5. After the restart the system identifies the installed devices automatically.

  6. Only for Windows XP:

     - The "Found New Hardware Wizard" appears.

     - Answer the question "Can Windows connect to Windows Update to search for software?" with "No, not this time". Click "Next".

     - In the dialog select the option "Install the software automatically (Recommended)". Click "Next".

- The driver will be installed.

7. After the restart, please open "Measurement & Automation" on the desktop and check if the installed devices are present below "Devices and Interfaces".

8. If you want to use the PSV data acquisition as a restricted user please follow the instructions in the file "Install for Restricted User.txt" in the folder "E:\National Instruments\NiDaq 7.41 Traditional" of the PSV DVD.

4. Installing the NI-DAQmx 8.6 software (only required if a NI-Acquisition board PCI-4461 or PCI-4462 is installed)

You can identify the PCI-4461 and PCI-4462 by the presence of BNC connectors at the back panel of the boards.

- · These steps for Windows XP and Windows 2000 are very similar. If it's necessary the differences are mentioned.

- · To install the new NI-DAQ software, you have to follow these instructions:

1. Insert the Polytec PSV DVD.

2. In Windows explorer navigate to the "E:\National Instruments\NiDaqmx 8.6\NIDAQ860-1" and double click "SETUP.EXE".

3. The setup program will guide you through the installation procedure. Please do not change the proposed standard settings.

4. After the installation you are requested to restart the computer. Restart the computer.

5. After the restart the system identifies the installed devices automatically.

6. Only for Windows XP:

- The "Found New Hardware Wizard" appears.

- Answer the question "Can Windows connect to Windows Update to search for software?" with "No, not this time". Click "Next".

- In the dialog select the option "Install the software automatically (Recommended)". Click "Next".

- The driver will be installed.

7. After the restart, please open "Measurement & Automation" on the desktop and check if the installed devices are present below "Devices and Interfaces".

If you want to use the PSV data acquisition as a restricted user no special settings have to be applied.

5. Installing the driver of the Spectrum data acquisition boards (only required for

MSA-400-M2-20, MSA-400-M4, MSV-400-M2-20 and PSV-400-M2-20 systems with Spectrum MI3025 data acquisition boards or Spectrum MI6030 internal generators)

·   Install the driver of the Spectrum data acquisition boards as follows:

1.   Insert the Polytec PSV DVD.

2.   The "Found New Hardware Wizard" will appear automatically. Click "Next".

3.   Choose "Install from a list or specific location (Advanced)" and click "Next".

4.   Choose "Search for the best driver in these locations" and check the box "Include this location in the search".

5.   Click "Browse" and navigate to the folder "E:\Spectrum\Driver" on your Polytec PSV DVD. Select the file "Spcwdm.inf". Click "Next".

6.   Click "Next" on the appearing dialog "Driver Files Search Results".

7.   Click the "Finish" button to complete the installation.

6. Initial Start-up of the Vib-E-220 Data Acquisition Modul

·   To use the Vib-E-220 data acquisition module with Windows Vista 32-Bit you have to install the hotfix "KB933262 - USB audio devices 32Bit".

·   Install the hotfix as follows:

1.   Insert the Polytec PSV DVD.

2.   In Windows explorer navigate to the "E:\Windows Vista\Hotfixes\KB933262 - USB audio devices 32Bit" and double click "Windows6.0-KB933262-v2-x86.msu".

3.   Follow the instructions given.

4.   The hotfix will be installed.

7. Installing the driver of the Sorcus MAX6pci D/A board (only required if a Sorcus MAX6pci board is installed)

·   Install the driver of the Sorcus MAX6pci board as follows:

1.   Insert the Polytec PSV DVD.

2.   In Windows explorer navigate to the folder "E:\SORCUS" and double click "SETUP.EXE".

3.   On the appearing dialog press the "Install Driver" button and follow the instructions given.

4.   Reboot the computer.

8. Installing the driver of the Measurement Computing D/A board (only required if a Measurement Computing PCIM-DDA06/16 board is installed)

- Install the driver of the Measurement Computing D/A board as follows:

    1. Insert the Polytec PSV DVD.

    2. In Windows explorer navigate to the folder "E:\MCC\PRODUCT\DISK1" and double click "SETUP.EXE".

    3. Follow the instructions given.

    4. Reboot the computer.

    5. The "Found new hardware wizard" will appear. Choose "Install the software automatically" and proceed.

    6. From the list of appearing drivers choose the first entry in the list.

    7. Follow the instructions given and complete the driver installation.

    8. Click the "Start" button in the taskbar and choose "Programs / Measurement Computing / Instacal".

    9. Choose the entry "PCIM-DDA06/16" and click the right mouse button on this entry.

    10. Choose "Configure…" from the appearing context menu.

    11. On the "Board Configuration" dialog choose +-5 Volt as D/A Range for the channels 0 to 5.

    12. Choose "Simultaneous" as "D/A Updates" mode.

    13. Click "OK" and exit the "Instacal" software.

9. Installing the driver of the ATI Radeon graphics board (only required during a new installation of Windows, if a ATI Radeon video board is installed)

This step is only required if a graphic board ATI Radeon X 1800 or higher exists on your system.

- To determine which graphic board is installed on your system, you have to follow these instructions:

    1. Click on the desktop with the right mouse button and choose "Properties".

    2. On the "Display Properties" dialog choose page "Settings" and click on the "Advanced" button.

    3. On the page "Adapter" you can read the name of the graphic board.

    4. Close the displayed dialog.

- If you have a system with the graphic board ATI Radeon X 1800 or higher, you have to follow these instructions to install the driver:

  1. Insert the Polytec PSV DVD.

  2. You have to install the Microsoft .NET Framework first.

  3. In Windows explorer navigate to the folder "E:\DotNET\Framework" and double click "Dotnetfx.exe".

  4. The setup program will guide you through the installation procedure.

  5. Now you can install the driver for the video board.

  6. In Windows explorer navigate to the folder "E:\ATI" and double click "SETUP.EXE".

  7. The setup program will guide you through the installation procedure.

- To prepare the graphics board for use with the MSA-I-400 / MSA-I-500 scanning head, please do the following:

  1. Connect the upper DVI output of the graphics board with the MSA-I-400 / MSA-I-500 scanning head. Connect the lower DVI output of the graphics board with the primary monitor (LCD monitor) of your MSA system. Switch the MSA hardware and the LCD monitor on.

  2. Click on the desktop with the right mouse button and choose "ATI Catalyst® Control Center".

  3. If the control center starts in "basic" mode, click on "Advanced".

  4. Below "Graphics Settings" select "Display Manager".

  5. If a monitor symbol is shown in the field "Attached displays currently disabled" right-click on the symbol and choose "Extend main onto monitor".

  6. On the appearing dialog click "YES".

  7. Select the second desktop.

  8. Below "Selected Display on Radeon X 1800 GTO Secondary" select 640x480 as resolution for "Desktop area".

  9. Below "Graphics Settings" select "Monitor Properties 1\Attributes".

  10. Below "Monitor Attributes" uncheck the "Use Extended Display Identification Data" box.

  11. Select the lowest available maximum resolution (640x480 or 800x600).

  12. Click on "Apply".

13. You should now see the desktop background on the display of the MSA-I-400 / MSA-I-500 scan head.

14. Click on "Adjustments" and adjust the screen position and size of the displayed background, if necessary. The background should fill the display completely.

15. Below "Graphics Settings" click on "Video" and select "Theater Mode".

16. Below "Overlay Display Mode" choose "in Theater Mode (full screen)" for both overlay display modes (clone mode and extended desktop).

17. For "Set the video aspect ratio to" select "Match the source video".

18. Click on "Profiles" at the top of the dialog and select "Profiles Manager".

19. Enter "Polytec MSA" for the profile name.

20. Choose "all Catalyst® Control Center settings" below "This profile includes" and click "Save".

21. Click "Close", and then click "OK".

22. Start the PSV software and switch to acquisition mode. You should now see a full screen live video display on the display of the MSA-I-400 / MSA-I-500 scanning head.

10. Installing the driver of the DFG video to USB converter (only required during a new installation of Windows, if a DFG video to USB converter is installed)

· Install the driver for the DFG video to USB converter as follows:

1. Insert the Polytec PSV DVD.

2. In Windows explorer navigate to the folder "E:\DFG_Video_To_USB" and double click "drvInstaller.exe".

8. The setup program will guide you through the installation procedure.

11. Installing the driver for the Basler BCAM digital camera (MSA, MSV and MMA/ PMA systems only)

· If a previous version of the Basler BCAM driver is installed on your system, first uninstall this driver. To do this open the control panel by clicking on the "Start" button in the taskbar and select "Control Panel". Click on "Add or Remove Programs". Select "BCAM 1394 Driver" and click on "Remove". Follow the instructions given.

· Install the Basler BCAM driver as follows:

3. Insert the Polytec PSV DVD.

4. In Windows explorer navigate to the folder "E:\Basler" and double click "bcam1394runtime_0190020.msi ".

5. On the "Setup Type" page of the installation dialog choose "Custom" and click "Next".

6. Proceed with the default settings on the next pages and follow the instructions given.

- If you have a system with Windows XP and service pack 2, you have to install the hotfix "WindowsXP-KB885222-v2-x86".

- To install the hotfix, you have to follow these instructions:

   1. In Windows explorer navigate to the folder "E:\Windows XP\Hotfixes\WindowsXP-KB885222-v2-x86" and double click "WindowsXP-KB885222-v2-x86-ENG.exe" (or "WindowsXP-KB885222-v2-x86-JPN.exe".

   2. Follow the instructions given.

   3. The hotfix will be installed.

12. Installing the driver for the PSV-E-40x, PSV-E-40x-3D, MSA-E-40x Junction Boxes

- These steps for Windows XP and Windows 2000 are very similar. If it's necessary the differences are mentioned. Statements for Windows 2000 are in parentheses.

- The current version of the Quatech USB adapter's driver is 5.90. If a Quatech USB driver is already installed on your system, you have to remove this driver first.

- To be sure a Quatech USB adapter is used on the system, you have to follow these instructions:

   1. Ensure that the USB cable is connected between the junction box and the computer.

   2. Open the Device Manager.

   3. Double-click on "Multi-port serial adapters". You should see here the serial adapters listed.

   4. A Quatech USB adapter is used, if the identifier for the adapter contains "QSU-100" or "ESU-100".

   5. Click on the entry for the serial adapter, then from the menu, select "Action/ Properties".

   6. On the "Driver" tab you should see as the driver provider "Quatech Incorporated". Here you can also check for the driver version.

- To remove the driver for the Quatech USB adapter, you have to follow these instructions:

  1. Click on the entry for the serial adapter, then from the menu, select "Action/ Uninstall."

  2. If more entries exist, repeat this step.

  3. Unplug the USB cable from the computer.

  4. Ensure that you have access to the system files in the explorer.

  5. Click the "Start" button, then "Search / All Files and Folders (For Files and Folders)."

  6. In the "All or part of the file name (Search for files or folders named)" box, type "OEM*.INF".

  7. In the "A Word or phrase in the file (Containing text)" box, type "QTUSB".

  8. In the "Look in" box, select "Local Hard Drives".

  9. Below "Advanced options (Search options / Advanced options)" select the following options:
     "Search system folders (Windows XP only)"
     "Search hidden files and folders (Windows XP only)"
     "Search subfolders"

  10. Click the "Search" button. Results will appear in the right-hand pane.

  11. Note any matching files that reside in the "\WINDOWS\INF" ("\WINNT\INF") folder respectively.   Select one of them and click it with the right mouse button. Choose "Open Containing Folder".

  12. Select all of the files that matched the search results. Also select the files with the same name but a file extension of ".PNF." For instance, if the search found OEM7.INF, select OEM7.INF and OEM7.PNF.

  13. Delete all these files.

  14. Close all windows.

  15. Reboot the computer.

- To install the driver for an USB adapter on Windows XP, you have to follow these instructions:

  1. Insert the Polytec PSV DVD.

  2. Connect the junction box to a free USB port of your PC. The "Found New Hardware Wizard" appears.   Answer the question "Can Windows connect to Windows Update to search for software?" with "No, not this time". Click

"Next".

3.   In the dialog select the option "Install from a list or specific location (Advanced)". Click "Next".

4.   In the dialog select the option "Search for the best driver in these locations". Mark the check box "Search removeable media (floppy, CD-ROM, ...)" only. Click "Next".

5.   The driver will be installed.

6.   If applicable, repeat the steps above for the "USB Serial Port" devices.

- To install the driver for an USB adapter on Windows 2000, you have to follow these instructions:

1.   Insert the Polytec PSV DVD.

2.   Connect the junction box to a free USB port of your PC. The "Found New Hardware Wizard" appears.

3.   In the dialog "Install Hardware Device Drivers" select the option "Search for a suitable driver for my device (recommended)". Click "Next".

4.   In the dialog "Locate Driver Files" select the check box "CD-ROM Drives". Click "Next".

5.   In the dialog "Driver Files Search Results" click "Next". The driver will be installed.

6.   If applicable, repeat the steps above for the "USB Serial Port" devices.

- If you experience any problems please have a look at the manual in the folder "E:\USB_To_Serial\Quatech\Doc" or "E:\USB_To_Serial\Ionetworks\Doc" on your Polytec PSV DVD.

13. Installing the driver for the MSA-E-500 Junction Boxes

- To remove a previous FTDI driver, you have to follow these instructions:

1.   Unplug the USB cable from the computer.

2.   Insert the Polytec PSV DVD.

3.   In Windows explorer navigate to the folder "E:\USB_To_Serial\FTDI\Driver Clean" and double click "FTClean.exe".

4.   Follow the instructions given.

- To install the FTDI driver for the junction box on Windows XP, you have to follow these instructions:

1. Insert the Polytec PSV DVD.

2. Connect the junction box to a free USB port of your PC. The "Found New Hardware Wizard" for the device "USB <-> Serial cable" appears.   Answer the question "Can Windows connect to Windows Update to search for software?" with "No, not this time". Click "Next".

3. Choose "Search for the best driver in these locations" and check the box "Include this location in the search".

4. Click "Browse" and navigate to the folder "E:\USB_To_Serial\FTDI\Driver" on your Polytec PSV DVD. Click "Next".

5. Click the "Finish" button to complete the installation.

6. The "Found New Hardware Wizard" will appear again. Please repeat the steps described above. This will install virtual COM ports named "USB Serial Port (COMx)" on your PC. The port number of these COM ports depends on the number of COM interfaces present on your PC. You can check the port numbers of these COM ports in the section (COM & LPT) of the windows device manager.

7. Click "Continue Installation" on the appearing dialog "Hardware Installation".

8. Click "Finish".

· To install the FTDI driver for the junction box on Windows 2000, you have to follow these instructions:

1. Insert the Polytec PSV DVD.

2. Connect the junction box to a free USB port of your PC. The "Found New Hardware Wizard" for the device "USB <-> Serial cable" appears.

3. Choose "Search for the best driver in these locations" and check the box "Include this location in the search".

4. Click "Browse" and navigate to the folder "E:\USB_To_Serial\FTDI\Driver" on your Polytec PSV DVD. Click "Next".

5. Click "Finish".

6. The "Found New Hardware Wizard" will appear again. Please repeat the steps described above. This will install virtual COM ports named "USB Serial Port (COMx)" on your PC. The port number of these COM ports depends on the number of COM interfaces present on your PC. You can check the port numbers of these COM ports in the section (COM & LPT) of the Windows device manager.

7. Click "Continue Installation" on the appearing dialog "Hardware Installation".

    8.   Click "Finish".

- After the installation of the driver please perform the following steps in the Windows device manager:

  1. Please make sure that the junction box and the PC are connected by a USB cable.

  2. Open the device manager.

  3. Double click "Ports (COM & LPT)". You should see the "USB Serial Port (COMx)" devices listed here.

  4. Click an entry for a COM port and select "Action / Properties" in the menu.

  5. Select the page "Port Settings" and click on "Advanced".

  6. At "BM Options" change the setting for the "Latency Timer" from 16 ms to 2 ms.

  7. Close the dialog of this COM port by clicking on "OK".

  8. Repeat these steps for every "USB Serial Port (COMx)" entry in the list.

- If you experience any problems during the installation please have a look at the documentation in the folder "E:\USB_To_Serial\FTDI\Doc" of your PSV DVD.

14. Initial Start-up of PSV-A-PDA (optional)

- If the initial start-up fails, please follow the detailed instructions in "E:\PDA\PSV-A-PDA_Installation_eng.pdf" on the Polytec PSV DVD.

- Changing the WLAN access point password

  1. Insert the Polytec PSV DVD.

  2. Connect the access point to the PC with the network cable. At the PC choose the network connector that is marked with "PDA".

  3. Switch the access point on.

  4. In Windows explorer navigate to the folder "E:\PDA\3ComWLAN\Discovery" and double click "Discovery.exe".

  5. Choose the LAN adapter that is connected to the access point.

  6. Click "Next". The access point configuration pages will be shown.

  7. Log in using the given default system password.

  8. Change the default system password and keep it in a safe place.

  9. Click "Apply".

- WLAN Security

  The WLAN access point and the PDA have been configured for WPA (WiFi Protected Access) encryption by Polytec. During this process, an individual WLAN encryption key was generated. No record of this key was kept by Polytec after the configuration of the system and the key is not known to Polytec or others. Therefore a change of the encryption key in general is not necessary. However, if you want to change the key, please follow the instructions in the documentation of the access point and the PDA.

- Connecting the PDA

  1. Connect the PDA docking station to the PC with the USB cable. Connect the power adapter to a power socket.

  2. Put the PDA into the docking station until the accumulator is completely charged.

  3. If Microsoft ActiveSync does not detect the PDA correctly, perform a reset of the PDA. If ActiveSync still does not detect the PDA, the PDA has to be re-installed. Please follow the detailed instructions in "E:\PDA\PSV-A-PDA_Installation_eng.pdf" on the Polytec PSV DVD.

15. Installing the Polytec Common Runtime

This step is only necessary, if you are installing the PSV software for the first time.

- Please install the Polytec Common Runtime before installing the PSV software.

  1. Insert the Polytec PSV DVD.

  2. In Windows explorer navigate to the folder "E:\Polytec Common Runtime" and double click "SETUP.EXE".

  3. Follow the instructions given.

The installation of the Polytec Common Runtime requires a certain version of the Windows Installer.

- When the execution of the setup program stops, please install the Windows Installer as described in the following steps:

  1. In Windows explorer navigate to the folder "E:\Windows Installer" and double click "WindowsInstaller-KB893803-v2-x86.exe".

  2. Follow the instructions given.

  3. Reboot your computer.

  4. Repeat the installation of the Polytec Common Runtime.

16. Installing the Polytec PSV software

- To install the PSV software, please proceed as described in the following steps:

  1. Insert the Polytec PSV DVD.

  2. If the setup does not start automatically, navigate in Windows explorer to the folder "E:\PSV" and double click "SETUP.EXE".

  3. Follow the instructions given.

- During the installation you can choose whether you want to operate the PSV software with a local hardlock or a network hardlock.

- Please note, that if you use a network hardlock, the PSV software can only be used as a Desktop Version.

- The steps to use a network hardlock are described in the sections "Preparing the Hardlock Server" and "Installing the PSV software with a Network Hardlock".

Preparing the Hardlock Server:

- Installing the hardlock server

  1. Insert the Polytec PSV DVD.

  2. In Windows explorer navigate to the folder "E:\Hardlock\Hardlock Network" and double click "HLSW32.exe".

  3. Follow the instructions given.

  4. During the installation you will be asked, whether you want to install the hardlock device driver. Answer this question with "No". Otherwise an older driver will be installed with the file Hldrv32.exe.

You can install the newer driver now.

- Installing the hardlock driver

  1. Insert the Polytec PSV DVD.

  2. In Windows explorer navigate to the folder "E:\Hardlock\Hardlock Driver" and double click "Install.bat".

  3. Attach the network hardlock. The network hardlock uses the module address 24830.

  4. A .alf file will be delivered together with the network hardlock. Copy this .alf file to the System32 folder of the hardlock server.

- Perparing the hardlock server

To operate and control the hardlock server you need the Aladdin Monitor:

1. You have to install the Alladin Monitor on the PC with the hardlock server.

2. To install the Aladdin Monitor navigate in Windows explorer to the folder "E:\Hardlock\Hardlock Tools" and double click "aksmon32_setup.exe".

3. Follow the instructions given.

4. Start the Aladdin Monitor and perform a search of the network. Now you should see the computer name of the hardlock server and the connected network hardlock.

5. If the network hardlock (module address 24830) is not listed at the hardlock server, stop and restart the hardlock service of the hardlock server.

6. If the network hardlock (module address 24830) is still not listed at the hardlock server, you have to add it manually. To do this, select the hardlock server, enter the module address 24830 and click "Add". The monitor will perform an automatic search and the network hardlock will be listed at the hardlock server.

· Update the hardlock

You have two options to update the network hardlock:

-   You can run the update file directly on the hardlock server.

-   If you run the update file on a different PC, the environment variable HLS_IPADDR has to contain a valid IP address of the hardlock server.

· Hardlock server notes

-   The installation of the hardlock server requires Windows 2000 (SP4) or Windows XP (SP2).

-   If you experience any problems preparing or using the hardlock server or managing the licenses please have a look at the documentation in the folder "E:\Hardlock\Hardlock Network" of your PSV DVD.

-   Please note that, despite the description in the documentation, multiple IP addresses have to be separated by semicolons.

-   You can install the Aladdin Monitor on other PCs.

-   On a single PC only a single hardlock server with a single hardlock can be installed.

Installing the PSV software with a Network Hardlock:

· Choosing the network hardlock

1. On the dialog "Choosing the Hardlock" select the option "Network Hardlock –

Desktop Version only". Please enter the IP address or name of the hardlock server into the edit field.

2. Or: Click "Search". A network hardlock will be searched.

3. If a valid network hardlock was found, continue with the installation by clicking "Next".

- Notes

  - Please note that the PSV software can be used only as Desktop version, when you are using a network hardlock.

  - If a search for a network hardlock was performed once, the result will not change when repeating the search with other IP addresses. In this case, you have to restart the setup.

  - If you experience problems, it might be necessary to delete the local environment variables for the network hardlock and to restart the setup. The local environment variables are: HL_SEARCH, HLS_IPADDR, HLS_WAIT, HLS_RETRIES.

  - If several departments of a company need a network hardlock, please note, that only the single IP address of the hardlock server valid for your department must be entered during setup.

  - You can install the hardlock server and the PSV software on the same PC. Please enter the IP address 127.0.0.1 during the installation of the PSV software.

  - If you experience any problems searching for a network hardlock, please have a look at the documentation in the folder "E:\Hardlock\Hardlock Network" of your PSV DVD.

  - Please note that, despite the description in the documentation, multiple IP addresses have to be separated by semicolons.

Requirements:

- CPU with 1.3 GHz, 256 MB of RAM, DVD-ROM drive

- 16 Bit color resolution display, 1024x768 pixels

- For optimal display results in presentation mode we recommend a graphics board with 3D hardware acceleration.

- Windows 2000, Windows XP or Windows Vista (Analysis only)

Limitations:

- On PSV-400-M2-20 systems with PSV-S-FFTExt software option the frequency resolution at 4 MHz bandwidth is limited to about 80 Hz. At all other bandwidths a frequency resolution of 50 Hz or better is available.

- When you are using PSV after recovering the PC from stand by or hibernate, occasionally an error message will be displayed, that the hardlock cannot be found. Please accept this message by clicking "OK". After that you can continue to work with PSV normally.

- When you are using an OFV 2500 controller with integrator there might be a wrong display of the maximum frequency on the page "Vibrometer" of the "A/D Settings Dialog".

- The PSV software version 8.5 is the last software that supports the following D/A boards: 12-bit, 16-bit, 16-bit with digital I/O.

- Systems with graphic boards Coreco Bandit and Coreco Bandit II are not supported any more by the software. Please contact Polytec for information about a necessary upgrade of your data management system.

- You cannot install Bug Fix Releases side-by-side to Feature Releases with the same major version number. E.g. you cannot install PSV 8.52 in parallel to PSV 8.51. But you can install PSV 8.52 in parallel to PSV 8.42.

- If you want to use side-by-side installation on Windows XP with PSV 8.12 or earlier you have to remove the files named PSV.exe.manifest and VibSoft.exe.manifest in the installation folders of the older software versions.

- To install PSV side-by-side to an existing version lower than PSV 8.1 or VibSoft 4.1 proceed as follows before you install the new PSV software version:

  1. In Windows explorer navigate to the folder "C:\Program Files\Common Files\Polytec". Copy the contents of both the folders "COM" and "PDx" to the installation directory of your existing PSV software. The installation directory should now contain among others the PSV.exe file and a couple of files with the extension .dll.

  2. Start Notepad (in the folder Accessories of the windows start menu) and save the empty text file to the installation directory of your current PSV software with the name "PSV.exe.local". Note that the file must not have the extension ".txt" but the extension ".local".

  3. Proceed with the installation of the new PSV version.

- The pan mode in the analyzer windows uses the middle mouse button for panning. For certain settings of the mouse driver for scroll wheel mice this collides with the use of the wheel for scrolling with the scroll bar. You might want to inactivate this

feature in your mouse driver. To do this, click on the "Start" button in your task bar and open the entry "Mouse" in "Settings / Control Panel". Switch to page "Wheel" and click on the button "Advanced…". Here you can switch off the scrolling support for all applications or for the PSV application only.

- PSV 7.4 or higher do not support opening files taken in VibSoft order tracking acquisition mode any more. Please use e.g. VSI Rotate of Vold Solutions Inc. to analyze Polytec order tracking files instead.

- PSV 7.45 or higher do not support opening files created with VibSoft 2.x or PSV 6.x or lower any more. To open such files with the current software you have to convert the files with an earlier PSV 7.x version to the current file format. We recommend using PSV 7.43 in a side-by-side installation as described above. PSV 7.45 or higher can read this file format.

- When printing presentation windows that have an area and an analyzer view in landscape orientation, the lower part of the window is not completely visible on print preview and on the printout. Either use portrait format or do not print both views on a single page.

- Files created by PSV 8.5 cannot be opened in PMA 2.4 directly to import the frequency band definitions.

- Using a virus scanner can cause problems during the installation, the start of the software and while acquiring data. During installation we recommend to deactivate the virus scanner. After a restart of the system we recommend to wait before starting the software until windows has initialized all device drivers and the virus scanner completely. Moreover we recommend to deactivate the virus scanner during data acquisition.

- Some errors can occur during uninstallation of the software, registered components will not be removed correctly. We recommend always to uninstall the older software before the newer software version.

- It is not possible to export graphics to a file with a pathname that contains non-Latin characters (e.g. Japanese characters).

PSV Software Changes between Version 8.52 and Version 8.51

Bug Fixes:

- cr6701: When adding a project directory to the browser the select folder dialog showed an invalid path name after changing from a standard folder to a special windows folder like "My Network" or "My Computer".

- cr6702: Network shares could not be added to the browser as project directories.

- cr6932: On systems with junction box PSV-E-401 the software displayed error messages when switching to acquisition mode.

- cr6946: On PSV-400-B systems with NI-4461 acquisition board measurements with external trigger did not start when the generator was switched on while the software was waiting for the trigger.

- cr7038: The software crashed when opening a combined file that contained many (more than about 100) files.

- cr7067: There was an error message when trying to access the AreaCursor object via the AreaCursor property of the AreaView object via scripting.

- cr7068: The property Values of the AreaCursor object did not return the values of all scan points of the area view when accessed via scripting, but only of the single selected scan point.

- cr7087: On systems with distance sensor LSM215 of the geometry scan unit the software indicated too much light when there was too little light.

- cr7109: On systems with distance sensor LSM215 of the geometry scan unit the software occasionally displayed an error message at the start of the geometry scan. Moreover the software displayed an error message when the mouse was moved quickly over the scan points while the geometry laser was active.

- cr7125: On PSV-400-H or PSV-400-B systems with NI-446x acquisition boards a measurement with external trigger did not start after stopping a continuous measurement.

- cr7255: On systems with DFG Video to USB converter the software occasionally could not initialize the live video image when switching to acquisition mode.

- cr7288: When remeasuring a scan file with "Remeasure File..." the average spectrum was not recalculated.

- cr7322: On MSA-500 systems with PSV-S-VDD software option the junction box MSA-E-500 (VDD) was not available.

PSV Software Changes between Version 8.51 and Version 8.5

Improvements:

- On MSA-500 systems points hidden by other parts of a 3D geometry can be

calculated.

- On MSA-500 systems the manual focusing was improved.

- While running lengthy operations in the software the application window does not turn white any more.

- When measuring distances using the geometry scan unit PSV-A-420 the signal strength is taken into account. There is a new geometry point status "Optimal Measured" if the signal strength is higher than the threshold entered on the scanning head page of the preferences dialog.

- The Signal Enhancement algorithm that removes spikes in the time signal that is available for PSV-400-H4 systems, is now active for data acquisition mode MultiFrame, too.

Supported Hardware:

- The National Instruments data acquisition boards PCI-4461 and PCI-4462 are supported.

- The PSV-E-408 junction box with USB connector is supported.

- The ATI Radeon HD2600XT graphics boards and the DFG/USB video to USB converter is supported.

- On MSA systems the 2.5x objective lens is supported.

Bug Fixes:

- cr6268: When the generator was started via scripting it could happen, that the generator signal was not stable right after the start.

- cr6274: While a continuous single shot measurement was in progress the analyzer was not updated when neither averaging nor signal enhancement was used.

- cr6281: On systems without support for 3D geometries there was an error message when the alignment mode or scan point definition mode was entered, because the hidden points calculation was activated by default in the preferences.

- cr6297: When using analogue triggering and digital filters, there were circumstances, where too less time samples were acquired.

- cr6342: It was not possible to set the range of the y axis of the analyzer to values outside the default range via scripting.

- cr6343: On systems with a NTSC video camera connected via S-Video the video properties dialog showed a slider for "Saturation" instead of "Hue".

- cr6356: When loading a scan point definition from a file that did not contain any scan points while the 3D view was active, an error message was displayed.

- cr6375: Setting the signal displayed in an analyzer or area view via scripting was not language neutral. I.e. you had to use a German signal name on German operating systems and an English signal name on all other systems.

- cr6383: Setting the properties of the axis of an analyzer or area view via scripting after the view mode was changed could lead to a crash of the software.

- cr6466: When changing the illumination of MSA systems using the front panel of the junction box these changes did not influence the illumination setting in the software.

- cr6472: When restarting the software after displaying the cursors for manual frame border setting in MultiFrame acquisition mode an error message was displayed.

- cr6484: When an entry was selected in the browser, the browser was disabled after pressing the escape key.

- cr6528: When exporting to a universal file with a path name that contained non-Latin characters (e.g. Japanese characters) an error message was displayed.

- cr6574: Connections between points of different contained files were not displayed in the combined geometry even if the coordinates of the corresponding points were identical but not the complete geometry was identical.

- cr6578: In rare cases the software displayed the error message "CMediaStreamToLineViews::GetCriticalSection: The following pointer is NULL: m_pcFilterMediaStream" when starting a measurement.

- cr6590: When the driver FTDI 2.2.4 (July 2007) was used for MSA-E-500 junction boxes, communication problems occurred after restarting the PC. Moreover it could happen, that the PC crashed while the software was in acquisition mode.

- cr6600: When using geometries containing points with different indices but identical coordinates, some of these points were marked with the point status hidden.

- cr6609: On MSA-500 systems with Japanese operating system the string "Z-Axis" in the scanning head control was not shown completely.

- cr6646: Via scripting it was not possible to set a Burst Random generator signal.

- cr6661: The internal generator was stopped for a short time, when loading the 3D alignment.

- cr6789: During a continuous measurement on a system with a dual core processor with several analyzers open it could happen, that the user interface of the software was not responding any more.

- cr6808: After selecting a number of FFT lines that is not possible due to limitations of the acquisition board the number of FFT lines is reduced accordingly. After that the length of the time signal was still the one corresponding to the not reduced number of FFT lines.

- cr6842: After the command remeasure file the software displayed an error message when the current SE settings were different from the settings in the file.

- cr6845: With the latest type of the geometry scan unit using a LSM215 distance sensor the software displayed communication error messages when measuring on retro tape. Moreover the check box in the beam dialog bar was not always reset when the software automatically switched the filter in the geometry scan unit on and off.

PSV Software Changes between Version 8.5 and Version 8.42

Novelties:

- Window settings can be copied between open windows. The software restores the window settings automatically when a file is opened. Default settings can be specified for new windows. You can choose whether you want to restore the window layout when the software is started.

- The handling of user defined datasets in scan files was improved. In previous versions of the software a scan point needed to have valid original data, so that user defined data could be displayed for this scan point. Now it is enough to have valid user defined data. This facilitates combining user defined data, that e.g. comes from an other data acquisition system, with original data.

- If you are using a shared, identical geometry for all files, the data of the combined file will be displayed on this shared geometry without gaps between the scan points coming from different contained files.

- The geometry of combined files is listed in the browser and can be saved in a settings file or loaded in acquisition mode.

- Spectra and time data can be exported to the audio wave format.

- From the focus values of scan points with 3D coordinates the software can

calculate the focal length of the lens used for focusing the laser beam in the scanning head. You can also enter the focal length directly. Then you can choose to calculate the focus values for all scan points with 3D coordinates automatically from this focal length. This effectively eliminates the need for assigning focus values when working with 3D geometries.

- When calculating the scan point status "hidden" you can specify a tolerance parameter. This marks scan points as hidden, that would only be reached by a laser beam that passes the geometry, but only within the tolerance distance. This allows you to compensate for small deviations of the geometry defined in the software from the actual measurement object geometry and for the remaining uncertainties of the 3D alignment.

- To load settings you can continue to use the browser, but you can also use a file open dialog.

- All modifications to files (e.g. calculating frequency bands, adding or deleting user defined datasets etc.) are initially temporary and can be reverted by simply not saving the changes. This also allows for modifying read only files. If you finally want to save the changes you have made to a read only file, you can select a different file name or location and create a copy of the file containing your modifications.

- When activating the principal component analysis (MIMO), virtual coherences and principal inputs are calculated. With these signals you have advanced tools at hand to judge the quality of your multiple input excitation.

- On MSA-500 systems you can perform an automatic focusing of the laser beam and a distance measurement. You can carry out a 3D alignment, acquire or import 3D geometries and focus the laser beam during the scan. When using 3D geometries it is possible to combine measurements of different parts of the measurement object.

- The list of available bandwidths and sample frequencies has been extended for PSV-400-H4 and PSV-400-3D systems. This allows for choosing frequency resolutions that are equal to those of data acquisition systems of other vendors.

- The software option PSV-S-FFTExt allows to use up to 819.200 FFT lines. Please note that some limitations might apply due to available memory resources when using more than two active acquisition channels. On PSV-400-M2-20 systems this option allows a frequency resolution of 50 Hz or better for the whole range of available bandwidths.

- When the analyzer displays multiple lines in single graph (e.g. for files acquired in acquisition mode MultiFrame, user defined datasets with multiple frames, virtual coherences and principal inputs) you can specify the color of the lines individually.

- When importing files in the universal file format or ME'Scope files, signals with directions –X, -Y, -Z can be combined to 3D signals, too. Negative directions will be taken into account by inverting the sign of the corresponding data.

- In data acquisition and presentation mode you can select marginal points. If you define a group for this marginal points in APS point mode, you can move these points towards the center of the object, to avoid problems caused by the laser beam touching the margin of the object.

- On PSV-400-H4 systems the signal enhancement algorithm was extended to the time domain. When signal enhancement is active and a factor of four over-sampling or higher is possible, spikes in the time signal are detected and automatically removed by using a linear interpolation. This only takes place, if the spike is shorter than two samples in the resulting time signal.

- The signal processor was extended by several functions (NumValues, Points, ArgMin, ArgMax, ReIndex, ExtractX, Round, Ceil, Floor, + for strings). There is an option for displaying the formulae instead of the results in the cells. A complete list of all functions is available, that allows to insert the function directly into the edit field for the current formula.

- On systems with Radeon X1800GTO graphics board or higher you can specify a transparency for the graphics overlaying the live video.

Improvements:

- Desktop versions of the software support floating network licenses using a network hardlock.

- When your software maintenance period is about to expire, a notification message will be displayed.

- All software components and the setup program are digitally signed.

- The application icons and splash screens were updated.

- The amplitude correction for a generator signal can be activated using the GeneratorAcqProperties object in the Basic Engine.

- When several windows are opened for the same file, a window number is displayed in the title bars of the windows.

- The amount of pre-trigger used in a measurement is listed in the file info.

- It is possible to work with time traces as large as 32 megasamples in the signal processor. Larger time traces can be processed by using the Extract function.

- The optimization of the scan order was improved.

- The SteppedFastScan.bas macro now works for PSV-3D systems.

- If the time delay of the vibrometer controller range can not be corrected completely due to the setting of the low pass filter, a warning message is displayed.

Supported Hardware and Operating Systems:

- Microsoft Windows Vista (32-Bit) is supported for the desktop versions of the software.

- The National Instruments data acquisition boards PCI4461 and PCI4462 are supported.

- The MSA-E-500 junctions box is supported.

- The MSA-I-500 scanning head is supported.

Bug Fixes:

- cr3701: When using overlap the number of acquired averages was not always equal to the number of averages set on the general page of the A/D settings dialog.

- cr4077: On PSV-400-M2-20 systems it was possible to set an invalid large number of samples for high sampling frequencies via the Basic Engine. This caused an error message when starting the measurement.

- cr4858: The usage of prefixes for physical units (μ, m, k, etc.) was not always consistent for original and user defined datasets.

- cr5024: On MSA systems the PSV software could not be started in presentation mode after the PMA software started the signal generation.

- cr5045: The ticks at the x-axis of the color gauge in the gauge bar were not always correct.

- cr5061: In profile mode it was possible to work with individual points (select, invalidate, change indices etc.).

- cr5065: Time signals in single point files measured in acquisition mode ZoomFFT or time signals of aborted measurements were not always correctly displayed in the signal processor.

- cr5070: When exporting a frequency band list and importing it again there could be a message that the frequency values would be adjusted.

- cr5073: The GetDataSection() method of the AnalyzerView object did not return

the correct error message when invalid parameters were passed to the method.

- cr5092: The GetDataSection() method of the AnalyzerView object of a SigProWindow did not always return the correct data.

- cr5093: When passing the value –1 to the first parameter of the GetDataSection() method the application crashed instead of returning an error.

- cr5099: When selecting the generator signal "Burst Random" for time mode and specifying a large number of samples, a misleading error message was displayed.

- cr5115: When using the MSA-E-40x junction box the MI6030 internal generator was activated during its settling time.

- cr5131: When pasting the file name of a .svd file to the file open dialog while the file filter for signal processor files was active, the application could crash.

- cr5147: It was possible to activate other windows when displaying the print preview.

- cr5148: Some keyboard shortcuts did not work when the video window of a .pvd file was active.

- cr5150: Horizontal cursor lines were not always drawn completely during continuous data acquisition.

- cr5156: When "round values" was active, it was not possible to scroll long time traces or time traces of ZoomFFT measurements to their end in data acquisition mode.

- cr5189: While saving the animation to an .avi file the part of the presentation window displaying the geometry components flickered.

- cr5195: When displaying the video window of a .pvd file, pressing Ctrl+C or executing edit / copy could lead to a crash of the software.

- cr5197: The "Save as" command of a .pvd file containing a video image did not save the image to the new file.

- cr5217: When swapping Vibrometer Controllers 1 and 2 and these controllers were of different types, the beam control bar was not updated correctly.

- cr5226: When using a VDD-E-600 controller and selecting the wrong junction box, a misleading error message was displayed.

- cr5228: When using an OFV-534 sensor head there was a misleading error message displayed when switching to the scanning head page of the preferences dialog.

- cr5238: When importing spectra that contained a 0 Hz frequency line the display in the analyzer window was not correct when a logarithmic x-axis was selected.

- cr5249: The low pass filter range "off" was not always displayed on the vibrometer page of the A/D settings dialog.

- cr5256: The software calculated H1 and H2 functions between reference channels when using principal component analysis (MIMO).

- cr5258: The scan point status "hidden" was not always set correctly if some of the scan points had no valid 3D coordinate.

- cr5271: When using averaging in measurement mode time and some of the time blocks used for averaging had an over-range, the averaging did not always work as expected.

- cr5297: After panning the analyzer with the middle mouse button in display mode dB, the un-zoom button was not enabled.

- cr5311: When changing the range of the y-axis in the signal processor, the setting was not applied correctly in all cases.

- cr5314: When exporting geometry elements of a combined file that contained only bands, there was an error message displayed.

- cr5318: When preferences were changed while the geometry laser was active, the auto-focus button disappeared from the beam dialog bar.

- cr5322: When a file was referenced in a signal processor document, and the same file was then opened in the software, the file might be opened with read only protection.

- cr5323: When aborting a scan in acquisition mode time and using averaging, the last scan point could receive the status "valid", although the last scan point had no complete time trace.

- cr5340: When a folder, that was added to the browser as a project folder, was deleted from the hard-disk while the software was not running, the software displayed an error message at the next start.

- cr5342: When using the simulation of the internal generator, selecting the generator signal "White Noise" could lead to a hang of the software.

- cr5345: When setting the z-range for the data on the data page of the display properties dialog and the units displayed right to the edit field had a prefix, the scaling was not correct any more when starting an animation.

- cr5351: When leaving APS point mode the generation of triangles for higher order imported geometry elements could lead to a crash of the software.

- cr5352: In APS mode the menu entries for exporting the geometry to the universal file or ME'Scope format were enabled, although the export is only possible outside APS mode.

- cr5362: If all scan points had the geometry status "interpolated", the 3D coordinates were not saved and restored correctly.

- cr5367: When exporting files to the universal file format and the file filter *.* was selected, there was no warning displayed, when an existing file was overwritten.

- cr5375: The Abscissa() function in the signal processor did not always work as expected right after a signal processor document was opened.

- cr5385: When setting the focus values manually on a PSV-400-3D system, these focus values were lost, when changing the preferences. When loading settings saved on a system with PSV-E-400-3D junction box containing manual focus values on a system with PSV-E-400-1D junction box, a misleading error message was displayed.

- cr5398: When the mouse cursor entered the 3D alignment dialog while panning the live video window with the left mouse button, the panning stopped and the mouse cursor switched back to an arrow.

- cr5405: When switching to time domain animation of a user defined signal after displaying a user defined spectrum, the start and end values of the time domain animation were not set correctly.

- cr5436: When using parallel projection, the scan range was not always displayed correctly.

- cr5437: The calculation of the geometry status "hidden" did not work correctly for very small objects.

- cr5440: The software was slow when inserting user defined signals to files that contained a large number of user defined signals.

- cr5444: When copying and pasting a user defined signal to the same file, the data was lost.

- cr5452: The results of the 3D alignment were wrong in rare cases, when the target quality was not met.

- cr5464: The software was slow when a large time trace was displayed in the analyzer and the display was scrolled while a cursor line was moved.

- cr5481: After activating auto-scale un-zooming while acquiring large time traces did un-zoom the x-axis instead of only the y-axis.

- cr5518: Depending on the names of the objective lenses entered on the objective lens calibration page of the preferences dialog, the correct lens was not always selected in the beam dialog bar.

- cr5529: When displaying the warning about large scan files, the scan point status "disabled" was not taken into account correctly.

- cr5530: When selecting a different junction box on the devices page of the preferences dialog, the ICP setting of the channels was not always reset.

- cr5560: In an image of a presentation window copied to the clipboard parts of the gauge readout could be visible on the analyzer part of the window.

- cr5567: When defining profiles for files measured on MSA or MSV systems, the x-axis was labeled "unknown", not "displacement".

- cr5604: On MSA or MSV systems with digital camera, the laser did not follow the mouse correctly when moving the laser in y-direction with the middle mouse button pressed.

- cr5612: To undo the results of a drag & drop operation in the signal processor, you had to execute undo twice.

- cr5615: When importing a 3D geometry while editing point connections in APS point mode, the software crashed.

- cr5627: On systems with PSV-E-40x-3D (1D) junction box the laser did not move during the scan, when only Vib Left or Vib Right was activated on the channels page of the A/D settings dialog, because the channels were automatically marked as reference channels.

- cr5640: User defined signals in files measured in fast scan mode could not be exported.

- cr5651: When using the software on systems with two monitors some dialogs were not displayed after restarting the software when using only a single monitor.

- cr5660: For combined files created from files containing 1D data it was possible to display the phase in 3D view.

- cr5661: The squares marking selected points in 3D view not always occluded the color-coded squares of the scan points.

- cr5666: When displaying user defined datasets with units containing exponents, the

scaling of the color gauge bar was not correct.

- cr5672: When activating the "Auto" mode for assigning coordinates to points with the geometry scan unit in the 3D alignment dialog, the coordinates of the alignment points were not kept.

- cr5678: The "For Each" statement could not be used to traverse the LineSettingsCollection and the RangeSettingsCollection objects in the Basic Engine.

- cr5683: After switching from the PSV-E-400-1D junction box to the PSV-E-400-3D junction box, the arrow buttons in the beam control bar moved the laser of the wrong scanning head.

- cr5701: When double-clicking an empty cell in the signal processor or double-clicking a cell while selecting several cells with the Ctrl-key pressed, an error message was displayed.

- cr5707: On systems using the PSV-E-401 or PSV-E-401-3D junction box it was not possible to move the laser using the Basic Engine.

- cr5738: When the screen was locked on a MSA system while the software was in acquisition mode, an error message was displayed when unlocking the screen. Moreover the live video on the display of the MSA-I-400 scan head was corrupted.

- cr5744: When saving a settings file by overwriting the very same file in the browser an error message was displayed.

- cr5748: After executing the VDD test mode or changing the 2D or 3D alignment using the Basic Engine a temporary file created during these operations was not deleted.

- cr5774: After creating new folders in the browser, opening files sometimes did not work.

- cr5800: Settings saved while performing a 2D or 3D alignment did not contain a valid alignment. Now a warning message is displayed in this case.

- cr5806: When displaying time data and no scan point was selected, the combo box allowing to select the direction of vibration was not always visible.

- cr5812: When selecting different settings of different files in the browser (e.g. scan point definition in the first file and A/D settings in the second file) and then loading the settings, only the first settings were loaded.

- cr5830: The animation did not work correctly, when the number of animation frames on the display page of the preferences dialog was set such, that the

animation resolution in degrees was no integral number.

· cr5837: When entering an invalid value in a table on one of the pages of the settings or preferences dialogs, an error message is displayed. When you selected cancel, you had to click twice to close the dialog.

· cr5840: On the channels page of the A/D settings dialog it was not possible to empty the field for the point index.

· cr5841: The readability of texts of selected entries of color selection combo boxes was low.

· cr5876: It was not possible to add a profile line when pan or zoom mode was active.

· cr5886: When displaying the phase of 3D data in 2D view and switching to 3D view, the legend still displayed phase, although the 3D view displayed no phase any more.

· cr5889: The assignment of scan points to geometry components was lost when entering and leaving APS standard mode without applying any changes.

· cr5892: After changing preferences while the 3D view was active in acquisition mode, the live video was displayed and it was not possible to activate the 3D view any more.

· cr5902: When switching the view of a presentation window from single point to average while a scan point was selected, this scan point was still selected, although the average spectrum was displayed in the analyzer and not the spectrum of the scan point.

· cr5929: The names of the HighpassFrequency and LowpassFrequency properties were wrong in the Visual Basic Engine Manual.

· cr5972: The properties ScaleAmplitudeValueMax and ScaleAmplitudeValueMin of the AreaViewSettings object always returned a value of –1 in the Basic Engine.

· cr5977: After moving the splitter bar of a presentation window to the top Ctrl+C lead to a crash of the software.

· cr5994: The color codes displayed in the legend of a presentation window for the display type imaginary were not always correct.

· cr6002: When opening files created with a PSV software version lower than 7.0, that had been converted to the current file format, an error message was displayed.

· cr6020: The signal processor displayed an "unknown error" message in cells referencing data of reference channels of PSV-3D systems.

- cr6036: The dialogs appearing when copying data from presentation windows did not restore the last chosen option when the view mode of the presentation window had changed.

- cr6040: When deleting the last user defined dataset from a file that contained only band data, an error message was displayed.

- cr6050: The scan points created by the "refine grid" command in the APS point mode did not have interpolated focus values.

- cr6061: It was not possible to change the camera settings of the 3D view of presentation windows via the Basic Engine.

- cr6064: The files created be the "save bands" command did not contain an average spectrum.

- cr6065: After copying a user defined average spectrum to a file containing only the entire bandwidth band, error messages were displayed.

- cr6093: It was not possible to use an OFV-534 sensor head at an MSA-400 system.

- cr6100: Changes to the z-scale on the data page of the display properties dialog were not applied, when switching to a different page and then closing the dialog by clicking "OK".

- cr6108: On systems with digital camera in rare cases the laser spot was visible in the snapshot stored in the scan files.

- cr6112: When pasting a user defined averaged time signal (i.e. a time signal with point index 0) to a file, the software crashed.

- cr6138: When displaying the video image of a single point .pvd file, the "Video Properties" entry in the context menu of the video image was enabled, although only the "General" page of the "Display Properties" dialogs was available.

- cr6140: Scaling the z-range on the "Data" page of the "Display Properties" dialog of a presentation window manually for the maximum but not for the minimum could cause a double minus sign for the minimum when a minus sign for the maximum was entered.

- cr6215: The GetDataSection() method of the AnalyzerView object did not work correctly for user defined datasets.

PSV Software Changes between Version 8.42 and Version 8.41

Bug Fixes:

- cr5348: The software crashed when exporting a signal from the signal processor to the ASCII format when the signal was displayed in dB.

- cr5516: On systems with PSV-E-400 or PSV-E-400-3D junction boxes with Quatech USB to RS232 adapters in rare cases the software hung when switching to the data acquisition mode.

- cr5547: The software crashed when displaying a long list of files in the "Create combined file…" dialog and pressing on the "Link" or "Copy" button.

- cr5568: In FastScan files it was not possible to invalidate points.

- cr5618: On PSV Systems with the latest type of video camera (FCB_IX45CP) the laser beam did not follow the mouse when moving the beam with the middle mouse button in coordinate alignment mode while the camera was zoomed.

- cr5690: When signals of the Vibrometer channel of measurements with averaging mode magnitude were copied as signal processor data the function type was cross power instead of spectrum.

- cr5714: It was not possible to access the geometry scan unit via scripting in the PSV acquisition mode.

- cr5769: On MSA and MSV systems the laser beam did not move correctly when re-measuring valid points when re-measure, signal enhancement and speckle tracking was active and no averages were selected. This could lead to data that was an average of data measured at correct and incorrect laser positions.

- cr5772: On PSV-3D systems the software did not calculate the 3D point coordinate by triangulation when a new point was set in APS point mode while the scan head left or right was selected.

- cr5788: The export to the ME'Scope format of user defined data sets that did not contain data for all scan points did not work.

PSV Software Changes between Version 8.41 and Version 8.4

Improvements:

- A new junction box type PSV-E-400-1D is selectable on PSV-400-3D systems. Selecting this junction box allows to operate PSV-400-3D systems with a PSV-E-400-3D junction box but with a single vibrometer controller and scanning head.

Please note the following assignment of labels at the junction box to channel names in the software: Vib Top -> Vib, Vib Left -> Ref1, Vib Right -> Ref2, Ref -> Ref3

- It is possible to adjust the laser of the PSV-A-420 geometry scan unit. To do this please proceed as follows:

  1. Activate the vibrometer laser.

  2. Position the laser to angles 0°/0°.

  3. Mark the laser position on the object.

  4. Activate the geometry scan unit laser.

  5. Position the laser on the marked position.

  6. Select Setup / Preferences / Scanning Head.

  7. Click the Button "Current Position". The offset angles are entered automatically.

  8. You can also specify an offset for correction of the measured distance.

Bug Fixes:

- cr5025: The selection of objects in APS standard mode was not kept when switching to APS point mode.

- cr5090: On PSV-400-M2-20 systems using periodic chirp signals for the internal generator in time domain mode could lead to error messages or incorrect excitation signals.

- cr5104: Switching a channel could lead to switching the display from Magnitude [dB] to Magnitude.

- cr5114: On PSV-400-M2-20 system the internal generator did not work correctly for certain generator amplitudes.

- cr5123, c5124: In the point definition modes APS standard and APS point copy and paste of objects or points did not work.

- cr5139: After merging points in APS point mode the remaining points were not all selected.

- cr5141: In acquisition mode points of hidden geometry components could be selected.

- cr5142: The software crashed when the slider for the generator amplitude in the section channels of the beam control bar was set to its minimum.

- cr5143: The typelibrary of the software could not be imported from .NET applications.

- cr5146: The edit field on the page Time of the A/D settings dialog did not allow to enter enough digits for the maximum available number of samples.

- cr5149: The nyquist display was not scaled correctly in all cases.

- cr5158: Displaying horizontal cursor lines in acquisition mode while acquiring data could lead to a crash of the software.

- cr5172: Changing the preferences in acquisition mode could lead to a change of the active vibrometer range.

- cr5181: Selecting all scan points did not work in the 2D view of a combined file. The selection was lost after a exporting a series of scan points to the ASCII format.

- cr5182: Exporting selected points to the ASCII format or copying the points to the signal processor in the 2D view of combined files lead to wrong point indices in the exported or copied data.

- cr5184: When changing the point indices in the 3D view of the acquisition mode, this had no effect on the displayed indices.

- cr5186: The Direction() function of the signal processor did not set the direction property of the extracted signal correctly.

- cr5188: When displaying different signals in the upper and lower view of the presentation window, a saved animation did not show the correct signal in the lower view.

- cr5190: The auto scale of the signal processor's analyzer did not work correctly when changing the point index in the toolbar of the analyzer.

- cr5192: The setup program did not check for the recommended service packs of the operating system.

- cr5196: Switching between selection and zoom or pan mode in APS point mode could lead to loosing the selection.

- cr5204: While saving the animation, the area view of the presentation window flickered. A saved time domain animation did not start at the position defined by the cursor position at the time the animation was saved.

- cr5207: Using analog trigger on PSV-400-M2-20 systems could lead to buffer overruns.

- cr5211: The checkbox for the laser in the scan head control bar disappeared when

changing preferences while the geometry laser was active.

- cr5212: Using the CopyWindowSettings.bas macro on two windows of the same file could lead to different displays if filtering was active.

- cr5213: When using Multi Frame acquisition mode on PSV-400-3D systems without a reference channel an error message was displayed.

- cr5219: When saving a combined file that contained only bands as a new file an error message was displayed.

- cr5223: When switching the channel in the profile mode of the presentation window the markers of the cursor positions in the upper view of the window disappeared.

- cr5229: Point indices greater or equal 1,000,000 were not displayed correctly in the beam control bar and in the 3D view.

- cr5318: The laser auto focus button in the scan head control bar disappeared when changing preferences while the geometry laser was active.

PSV Software Changes between Version 8.4 and Version 8.32

Novelties:

- When stitching files the indices of the contained files are displayed directly on the "Create Combined File" dialog. Duplicate indices are marked in red. Duplicate indices for points with identical coordinates are tolerated. The dialog is resizable. PSV-1D files can be stitched, if they contain 3D geometries.

- The signal processor functions Sin, Cos, Pow, etc. can be applied to spectra and time trace data sets. There are new functions: Make3D, Direction, Sign, DisplayUnion, Abscissa, Resolution. Mean can be applied to complex data. IFFT can be applied to real data. Units and axes names are changed automatically for the functions FFT, IFFT, Integrate and Differentiate. References to cells can be inserted by left clicking on the cell while pressing the Alt-key. A wizard dialog is available for all functions that can be inserted via the toolbar. Undo and redo is supported. Paste works for cells that contain formulas. Copy of empty cells is disabled. There is no description for cells any more. All editing of cells happens in the formula edit field. For numerical and string constants, the '=' at the beginning is not necessary any more. Only datasets with data are copied to the signal processor, points that have no data are not copied and do not appear in the point list of the signal processor's analyzer. Error messages and the manual have been improved. The performance has been improved for formulas in cells that were referenced

more than once.

- Point data (spectra and time traces) can be imported from universal file format and ME'Scope files. The "Properties of Signals to Import" dialog allows to change the properties of the signals and to combine signals at different nodes and of different directions to a single user defined signal. The signals are stored as user defined signals in scan or single point files. For scan files the node numbers of the signals and the point indices of the geometry in the scan file have to match.

- The former APS modes standard, professional, point and point 3D have been replaced by the two modes standard and point. The APS standard mode allows to define geometries by drawing poly-lines, rectangles and ellipses with rectangular, radial and hexagonal grids. The point mode allows to import geometries (optional) and to work with individual points and connections between points. Both modes allow to define 2D and 3D geometries. Manual assignment of laser focus values is possible after leaving the APS mode for any set of points. Before that the assignment was limited to figures of the former APS professional mode. The PSV-S-APSEx software option is not necessary any more to assign focus values, PSV-S-APS is sufficient.

- The analyzer provides two new types of cursors: a band cursor and harmonic cursors. The band cursor allows to calculate minimum, maximum, RMS, mean, standard deviation of the values between the cursor lines. Moreover it allows to display a curve fitted to the peak between the cursor lines together with the frequency of the peak maximum and the width of the peak at –3 dB. Up to 12 cursor lines can be displayed at the harmonics of the base frequency. All cursor types allow to display horizontal lines at the intersection of the cursor lines with the data values. The values displayed in the legend can be configured via cursor properties dialogs. The cursor values can be copied to the clipboard.

- Geometry components can be defined in acquisition and presentation mode. The components can build a hierarchy of arbitrary depth. Every component has a name, a description, optional child components and associated scan points. The associated scan points can be selected or hidden from display. The component definitions are stored together with the scan point definition. When stitching files, the component definitions of the contained files are copied to the combined file. The component definitions are loaded during the import of geometries in the universal file format and are used during export to the universal file format, if possible.

- User defined signals can be exported to the universal file format or ME'Scope files. The Usr, Usr X, Usr Y, Usr Z channels can be selected on the "Universal File Format Export" or "ME'Scope File Export" dialogs. The dialog "Properties of User Defined Signals" accessible via the properties command in the signal menu of the Usr channels allows to set all properties of user defined signals. The list of properties has been extended by the function type, the direction, the reference

direction and reference point index. Moreover this dialog allows to delete several or all user defined signals.

· The section "Channels" was added to the scan head control bar in acquisition mode. The current voltages at the active input channels of the data acquisition board are displayed as color bars relative to the input range of the board, while the acquisition is running. It is possible to automatically adjust the ranges of the connected vibrometers or the input range of the channel. Moreover it is possible to directly change the output voltage of the generator. The scan head control bar manages two independent visibility lists for the sections in the bar: one for acquisition and one for the case, when no acquisition is running.

· On MSV, MMA and MSA systems it is possible to calibrate the objective lenses. On the page "Lens Calibration" of the preferences dialog you can specify the number of pixels per distance on the measurement object for every objective lens. You can add calibrations for additional lenses. You can change the lens calibration for measured files in presentation mode, too. To calculate the coordinates of the scan points the software uses their position on the video image. The middle of the video image defines the origin, the orientation of the coordinate axes is defined by the direction of the vibrometer channel. The coordinates do not depend on the 2D alignment any more. This allows for coordinates that are directly comparable to the coordinates used by PMA and TMS. The position of the laser displayed in the scan head control is now given in per cent of the maximum possible deflection of the laser beam.

· The PSV object model was extended to provide access to settings of analyzer and presentation windows via the Basic Engine. This allows to control position, size, view styles, displayed data, cursors etc. of the windows. Settings can be easily copied to other windows. Methods and properties provide access to the displayed data and the various cursor values. A new sample macro "CopyWindowSettings.bas" was added to demonstrate this.

Improvements:

· The PSV software can be operated with restricted user rights. Only some actions like changing the junction box require write access to the local machine part of the registry. Example files are installed to the folder "C:\Documents and Settings\All Users\Application Data\Polytec\PSV\8.4". Analysis and browser settings are stored in the folder "C:\Documents and Settings\<USER>\Application Data\Polytec\PSV\8.4". Acquisition settings are stored in the folder "C:\Documents and Settings\<USER>\Local Settings\Application Data\Polytec\PSV\8.4". dB references are stored in the folder "C:\Documents and Settings\<USER>\Application Data\Polytec\PolyFile\3.2".

· In APS point mode and 3D alignment mode it is possible to import point

coordinates in an ASCII format.

- When defining geometries, all elements containing more than four points and concave elements with four points are split into triangles.

- The data page of the display properties dialog of presentation windows allows to set the z-range separately for the left and right parts of double displays. Units of the limits are shown.

- When opening a time data scan file that was acquired without trigger, a warning message was displayed. Now this message is displayed only once at the start of the animation.

- For the 3D view in acquisition mode it is possible to hide the scan points.

- When the software starts, the hardware is initialized faster, especially for PSV-3D systems. When switching to presentation mode all hardware resources are freed. This allows to operate the hardware on MSA systems e.g. with the PMA or TMS software, while PSV is in presentation mode.

- When opening a scan file with 2D geometry the 3D view displays a direct view of the object independent of the vibration direction of the data.

- If speckle tracking is active, the software moves the laser on a small circle. The radius of this circle has been doubled to optimize the reduction of speckle effects.

- It is possible to set the vibration direction in presentation windows for all 1D channels, not only for the vibrometer channel.

- It is possible to register or deregister the type library of PSV by applying the appropriate command line switches: "psv.exe /Regserver" or "psv.exe / Unregserver".

- The message displayed when loading settings for a not matching junction box or acquisition board has been improved.

- On the data page of the analyzer properties dialog the positions of the line style and marker lists have been swapped.

- While resorting data for time domain animation, cursor mode, or displaying user defined data sets the animation is stopped for better performance.

- The properties of the virtual camera used for the area view of the presentation windows are stored separately for 2D and 3D view.

- The live video window in acquisition mode can be zoomed with the mouse wheel.

- When switching to the Nyquist display the frequency range is limited by the

visible part of the x-axis in the other display modes. Therefore you can limit the frequency range by first zooming the x-axis and then switching to the Nyquist display.

·   Importing geometries is possible via the context menu of the file to import in the browser.

·   The PDA displays the current mode of the software (acquisition, presentation, APS, alignment) and displays a wait cursor while an auto focus is in progress. In certain modes of the software some buttons on the PDA are disabled.

·   A color video image is stored in the scan files. You can choose to display this color video image as monochrome or color in presentation mode by adjusting the corresponding setting on the data page on the display properties dialog.

·   The auto scale button in the toolbar of the analyzer keeps its state after clicking it. If auto scale is active, any time new data is displayed in the analyzer, the y-axis is automatically scaled if the new data exceeds the current range of the y-axis or covers less than half of the range.

·   On the devices page of the preferences dialog it is possible to select the type of the connected camera (PAL, PAL S-Video, NTSC, NTSC S-Video, Digital).

·   The scan speed was improved for PSV-400-M2-20 systems for sampling rates above 5.12 MHz.

·   The largest possible bandwidth in FastScan acquisition mode was increased to 100 kHz for PSV-400-M2 and PSV-400-M4 systems and to 1 MHz for PSV-400-M2-20 systems.

·   The number of displayed digits for the positions of the cursor lines in the legend of the cursors was increased.

·   Round values adjusts the zoom range of the analyzer to the next minor tick of the axis. In general this provides a better zoom range. Round values is possible for logarithmic axes. While panning the zoom range, round values does not adjust the zoom range.

·   The calculation of partial coherences was removed for the principal component analysis (PCA, MIMO). The calculation method used did not provide correct results for partially correlated inputs. As a replacement a new example macro "PrincipalInputs.bas" allows to perform a principal inputs analysis and to calculate the virtual coherences. The calculated data is stored as user defined data sets.

·   When the geometry of the scan points contains points that are hidden from the laser by other parts of the geometry (point status "hidden"), the software shows a warning message when the scan is started, but the scan points can be measured.

- The ASCII export allows to export all bands and all scan points to a series of ASCII files. Data displayed in analyzer and presentation windows can be copied to the clipboard in ASCII format.

- It is possible to copy point data to the clipboard for the use in the signal processor, even if the presentation window shows the data in domain "RMS". The point data of the corresponding signal in the "FFT" domain is copied.

- When switching channels, the software tries to display the same type of signal that was displayed before. If this is not possible, now the software displays either the original signal of the data acquisition channel or FRF or H1 for combined channels instead of the first available signal.

Supported Hardware:

- The OFV-2500 vibrometer controller is supported.

- The MSI RX1800 GTO Graphics board is supported.

- The PSV-E-401 and PSV-E-401-3D junction boxes are supported.

- The PSV-300-3D junction box is not supported any more.

Bug Fixes:

- When acquiring time series with more than 1 MSamples the signal generation of the internal generators stopped, if Periodic Chirp or Pseudo Random were selected as generator waveform.

- The command "Data Properties..." in the context menu of the analyser was enabled, even when no data was shown.

- VDD systems, that perform the test mode automatically (VDD-E-600 and OFV-5000 with DD600), displayed after a restart of the software not the previously selected signal in the analyser but always the displacement signal of the vibrometer channel in the time domain.

- On VDD systems the channel page of the "A/D settings" dialog could display a calibration factor different from 1. This did not influence the acquired data.

- When using overlap on page frequency on the A/D settings dialog, the actual number of averages could be lower than the target number of averages.

- For data acquired in MultiFrame mode the line and marker style was restored for the average frame only.

- When saving changes to a file with an older file version was canceled, some of the

changes were lost.

- The time signal stored in a MultiFrame single point file was not displayed after deactivating the display of the average frame in domain FFT.

- While measuring in continuous mode, it was not possible to change the line style.

- No online help topic was displayed when pressing F1 while the "Create Combined File" dialog was shown.

- Export of graphics to the formats postscript (.eps) or Word Perfect (.wpg) did not work correctly.

- When defining frequency bands the correct mouse cursor was not shown all the time.

- The PhysicalUnit.dll did not appear on the components page of the about dialog.

- When the signal was changed while the analyzer was in frequency band selection mode, the cursor button was activated in the toolbar.

- When the signal was changed in the analyzer the cursor type changed.

- When selecting a frequency band in the analyzer, it was not possible to delete the band by pressing the delete key.

- The signal processor did not accept ',' as a decimal point character on the Signal Description dialog.

- The software did not respond any more, when calling the signal processor's FFT function with certain parameter values.

- Time domain averaging did not work correctly when SE was active and the number of averages was higher than 512.

- The estimate for the measuring time was wrong while re-measuring scan files.

- Some parts of the browser window were not painted correctly when switching between applications or changing the size of the application window.

- It was not possible to expand single point files (.pvd) in the browser e.g. to load settings.

- When Principal Component Analysis (MIMO) was activated on the general page of the A/D settings dialog a warning was displayed to activate multiple channels (MIMO) on the generator page, even when the generator was not active.

- The PSV software could crash when switching between contained files of a

combined file in 2D view.

- Messages for invalid parameters on the display properties dialog of presentation windows could appear more than once.

- When changing the color of the legend on the general page of the display properties dialog of presentation windows the entries for the selected point disappeared in the legend.

- When the splitter between area view and analyzer view of a presentation window was moved to the top of the window, the view mode switched to object.

- The wrong context menu was shown in the status point view style of the presentation window on a scan point that was invalidated.

- There were several error messages when the software tried to save changes to a file that was in use by another software. Now there is a single message and the file stays in the modified, but not saved state.

- When a presentation window in view mode single scan point, average spectrum or profile was opened automatically when restarting the software, the splitter between the upper and lower view was not moved correctly when resizing the window.

- When one of the parameters of the signal processor's extract function was an expression, the properties of signal description were not always set correctly.

- When starting the software a second time while the application window was minimized, an error message was displayed, instead of activating the main window of the running application.

- The display on the PDA was not updated, when a different scanning head was selected in the PSV software on PSV-3D systems.

- When the analyzer displayed several FFT lines in the same pixel column, the cursor did not always show the largest value of the these FFT lines in the legend.

- There could be errors in the communication between the PDA and the PSV software.

- A profile line that intersected with a point lead to the display of a line segment not a point in the analyzer view.

- A profile line that intersected with a line lead to a display in the analyzer only, when markers were shown.

- The time domain animation stopped when zooming the x-axis of the analyzer view.

- When copying cells in the signal processor that contained strings it could happen,

that not the complete strings were copied.

· Vibrometer controllers with decoders with more than 10 ranges could not be remote controlled.

· On operating systems with Japanese user interface the letter 'μ' was not always displayed correctly.

· Copying the data displayed in the signal processors' analyzer to a cell of the analyzer did not work correctly, when the analyzer displayed the data of more than a single cell.

· On rare cases the software crashed on exit from the acquisition mode. This was connected to a problem with the hand set PSV-Z-051.

· For analyzer line style histogram, the lines of the difference cursor did not snap to the middle of the bins in all cases.

· If the phase angle for the display type instantaneous value was changed using the keyboard, the displayed amplitude value in the legend was not updated.

· The warning message about a missing trigger when choosing the generator signals burst random or burst chirp was shown, even when the generator was not active.

· When both PSV-S-FFT64 and PSV-S-FFT128 was set in the hardlock, the software limited the maximum number of FFT lines to 6400.

· During opening and closing analyzer windows not all windows graphics objects were released. After thousands of operations this could lead to display errors.

· ICP could be activated on the channels page of the A/D settings dialog for PSV-400-M2-20 systems, but the acquisition board and the junction box do not support this.

· The browser did not correctly display tool tips for partially visible entries, while scrolling.

· The browser did not deselect multiple selected entries, when clicking on one of the selected entries.

· On PSV-400-M2-20 systems the data acquisition could take place while the mirrors of the scanning head still moved the laser beam. This only occurred for sample frequencies below 5.12 MHz and analog trigger or external trigger with a large number of time samples.

· Panning of the analyzer zoom region worked jerkily when round values was activated.

- After copying a user defined signal in time domain with more than a single frame to the signal processor, the signal processor only displayed a single frame of the signal.

- When re-measuring a file the average spectrum was not calculated correctly.

- On PSV-400-M2-20 systems a user defined waveform for the internal generator could not be set via the Basic Engine.

- The software showed an error message when iterating over scan points with the handset PSV-Z-051 and the 2D alignment was not valid.

- Loading the A/D settings changed the camera zoom.

- There was an error message for certain bandwidth settings in FFT acquisition mode, when the active waveform of the internal generator of PSV-400-B systems was white noise.

- The refine grid command in APS point mode produced points with identical 3D coordinates, if for the new point there was only a single neighbor point with valid 3D coordinates.

- ASCII export wrote non-zero values for not measured time samples at the end of time traces that were only partially measured and that were longer than the maximum number of displayed samples in the analyzer.

- When an OFV-5000 controller and an OFV-3000 controller were connected and then the connections were swapped on the devices page of the preferences dialog, the software did not display any velocity or displacement ranges of the OFV-3000 controller.

- Clicking on the down arrow of the frequency band list of the presentation window and using the page up and page down keys to select a band could lead to a wrong band displayed in list.

- Adding or removing profile lines in a second window of the same file did not change the profiles in the first window.

- The "Assign Focus Fast" and "Assign Focus Best" command did not automatically switch the lasers on.

- The software crashed in rare cases when the entries in the signal selection trees of the universal file format and ME'Scope export dialogs were expanded.

- If the number of channels in the channel menu of an analyzer or presentation window exceeded 36, the additional channels were not shown in the menu.

- After renaming a folder in the browser, the folder was not shown in the browser any more.

- Renaming a file in the browser to a name that already existed, caused double entries in the browser.

- Not all keyboard commands worked in the browser, when a presentation window was open.

- On multi-core or hyper threading processors data acquisition did not run stable. This was due to a bug in the Windows operating system. The installation program of the software installs a workaround.

- The comment entered in the ME'Scope export dialog was not saved to the ME'Scope file.

- On PSV-400-3D (1D) systems an error message about an invalid 2D alignment for the scanning heads left and right was shown at the start of the measurement, even if the channels of these scanning heads were not active or marked as reference.

- Not all keyboard commands worked in the edit fields in the legend of the presentation window.

- The file dialogs shown for the "Save As…" and "Save Bands…" commands did not have edit fields to change the user, project and the comment stored in the file.

- Copying signals from the FFT domain of a band-only scan file and pasting into a signal processor cell lead to an error message. In a band-only scan file no point data is available, therefore no signals can be copied.

- The software displayed an error message when copying and pasting point data to a file with not matching point indices. Now all data at matching points is copied, data at not matching points is ignored.

- If the animation was active in a single window this animation stopped after the "Animation Start All" command.

- It was possible to enter '\' or '/' for a file name when renaming a file in the browser.

- The "Validate", "Invalidate", "Validate All Points" commands were enabled, even if the file contained no point data (bands only file).

- When switching from cursor mode of a user signal back to an original signal in a bands only file an error message was displayed.

- During acquisition it was possible to rename or delete the measurement file via the browser or to load settings.

- When selecting all bands in the frequency band editor and copying and pasting these bands, there was an error message shown.

- Dragging and dropping files in the same directory was possible in the browser.

- When opening a second window for a presentation window in profile mode and switching profile mode on and off in both windows not all toolbar buttons and commands were disabled correctly in both windows.

- For combined files the distance labeled D in the legend of the presentation window was not the distance from the position of the scan point to the scan head the point was measured with but to the scan head position of the first contained file.

- The comment entered for a file was not copied to the comment field of the ME'Scope and universal file format export dialogs.

- The "Save As…" command was enabled for files contained in combined files in acquisition mode, but the command did nothing.

- The browser did not update correctly when folder names in project folders were changed e.g. with the windows explorer.

- In view mode single scan point, when selecting multiple scan points in the area view of the presentation window and then clicking on the analyzer, the index of the scan point disappeared in the legend of the analyzer.

- If an error message was shown when calculating a formula in the signal processor, it could happen, that the memory needed for the data was not freed until the software was restarted.

- When deleting files with several different extensions via the browser, the number of files in the displayed message was not correct.

- Changing the thickness of the isolines had no effect.

- There was an error message when a vibrometer controller with velocity and displacement decoders was connected to the vibrometer channel and a controller with only a velocity decoder was connected to a reference channel and the quantity for the vibrometer channel was set to displacement on the channels page of the A/D settings dialog.

- On German operating systems scan points could not be disabled via the context menu in APS mode.

- In rare cases the software hung up when leaving the acquisition mode or exiting the software.

PSV Software Changes between Version 8.32 and Version 8.31

Improvements:

- The MultiFrame page of the A/D Settings dialog has been moved right to the general page.

- Scanning mirror movement was adjusted for MSA-I-400 scan heads.

Supported Hardware:

- The orientations of the scan heads on the PSV-A-T31 tripod are taken into account when pressing the tripod button on the Setup / Preferences / Scan head page.

- Junction Boxes with four- or eight-port Ionetworks USB to serial adapters.

Bug Fixes:

- When using 16:9 format monitors or when the PSV software was not in maximized window mode it could happen that all alignment points moved to the top left corner of the alignment window when entering the alignment mode. This could lead to invalid alignments.

- There was a limitation on the number of reference channels for PCA (MIMO) mode.

- Displaying data for reference channels of measurements on an eight channel PSV-3D system could lead to a crash of the software.

- When defining frequency bands under certain conditions the start or the end of the band moved by a single frequency line when releasing the mouse button.

- Importing a universal file format geometry file exported by Hypermesh (IDEAS) did not work.

- On systems with MSA-E-400 junction box, OFV-5000 vibrometer controller and OFV-551/2 sensor head, the scan head MSV could not be chosen on the Setup / Preferences / Scan head page.

- Using squared units in signal processor did not work correctly. The unit μm^2 e.g. had to be interpreted as μ(m^2).

- The signal processor displayed the error message "invalid pointer" for certain parameter values of the Filter function.

- The signal processor displayed misleading error messages for certain parameter

values of the Resample function.

·   The signal processor's Differentiate function produced a spike at the first sample under certain conditions.

·   When the analyzer displayed data with frames (user defined datasets or MultiFrame mode files) panning with the middle mouse button did not work while the mouse was dragged but only when the button was released.

·   In profile view mode it was possible to change the distance to the object.

·   The title of a presentation window set on the General page of the Display Properties dialog was not shown correctly on the print out and saved graphics.

·   The select all points command did not select all points in point status view mode, when some points were invalidated.

·   After stopping the animation in profile view mode it was not possible to change the direction of the channel any more.

PSV Software Changes between Version 8.31 and Version 8.3

Supported Hardware:

·   A PDA based application (optional) can be used to control the laser beam and to define alignment points and scan points remotely. The PDA is connected to the data management system via a WLAN access point.

·   The Vibrometer Controller VDD-E-600 is supported. On Preferences / Devices select the junction box "VDD-E-600" to use it.

·   A new version of the geometry scan unit PSV-A-420 is supported, that allows to remote control the filter in the beam path of the laser. The beam control bar allows to switch the filter on and off when the distance sensor is active. Moreover the filter will be automatically applied if too much light is reflected back from the surface of the object under test during a geometry scan.

·   The lens 3.6x is supported for MSA-I-400 scan heads.

Bug Fixes:

·   During re-measure a scan did not finish, when some points had status overrange and signal enhancement was not active, or the measurement was done in acquisition mode time.

- If an OFV-5000 controller contained a displacement decoder (e.g. DD-500) and a DD-600 decoder, the DD-500 decoder could not be remote controlled.

- The software crashed when a VPI scan head was used and a vibrometer controller was remote controlled.

- Using a reference vibrometer controller on a PSV-3D system could lead to a crash of the software when changing the serial port number of the reference controller connection.

- The communication with the geometry scan unit could fail.

- When exporting a response channel of a PSV-3D measurement other than Vib-3D to universal file or ME'Scope format, an error message was displayed.

- When switching from a reference channel to the Vib-3D channel of a PSV-3D measurement the could be an error message, when the animation was active.

- During animation the usage of main memory increased steadily and the memory was not freed until the application was closed.

- In cursor mode making points invalid and valid again and switching channels in between lead to displaying the measurement value 0.

- The ASCII export of the point status area display in presentation windows did only contain the first letter of the point status.

- When combining files containing points with status disabled, the average spectrum was not calculated correctly in all cases.

- When working with multiple frames (e.g. files in acquired in MultiFrame mode or user defined datasets) the analyzer did not always display the corrected data when switching between channels or signals.

- If the grid color in the analyzer window was "Standard", a change of the line style for the grid was only applied, if a title was set for the analyzer.

- The page range of the analyzer properties dialog did not always display the range of measurement values correctly, if this range was small compared to the absolute value.

- When moving a scan point in APS single point mode using the arrow keys or the mouse, the laser position was not updated.

- After changing the preferred scan direction in on the preferences / scan head dialog the scan order was not re-calculated.

- When changing the direction of the vibrometer channel in acquisition mode, the

3D view did not reflect the changes.

- When using a direction different from +Z for the vibrometer channel, the default point-of-view for the 3D view was not positioned at the scan head.

- The status hidden was not updated after a modify selected points / triangulate 3D coordinates command (PSV-3D only).

- The state of the optics section of the beam control bar was sometimes set to minimized when switching to acquisition mode.

- The analyzer did not always initialize the visible range of the x-axis correctly when the x-axis was shown in logarithmic scale.

- When switching to the 3D view on a system without the software option PSV-S-ImpGeo (geometry import) there was an error message.

- In the readout of the presentation window there was a double line visible when displaying data of MultiFrame files.

- When performing the 2D alignment on a small section of the total scan range the limitation of the scan range was not always displayed correctly in APS mode.

- When switching from 3D view to 2D or 3D alignment mode the alignment points were not displayed correctly on the live video window.

- The laser did not follow the mouse pointer when the size of the live video window was changed and the scan points were hidden.

- When opening a new analyzer window, the setting for the logarithmic x-axis was not kept.

- If the mouse cursor left the live video window while the left mouse button was pressed to select scan points, the selection of scan points continued when the mouse cursor re-entered the live video window, even if the mouse button was not pressed any more.

- When accessing the MeasPoint property of the DataPoint object of a combined file via scripting, an error message was displayed.

PSV Software Changes between Version 8.3 and Version 8.22

Novelties:

- In data acquisition mode a 3D view is available, if you are working with 3D

geometries. Therefore, you can check the geometry visually already in acquisition mode. The 3D view allows to display the scan range, point indices and wire frame in presentation and acquisition mode.

· In data acquisition mode you can display extended point status information. The information is grouped as "Scan", "Geometry" and "Focus". The status information is displayed as color codes in and outside of the APS modes.

· In data acquisition and presentation mode points can be selected by different criteria. This includes selection by point indices and status. More than one point can be selected. You can select the points in 2D and 3D view by dragging a rectangle with the mouse.

· In data acquisition mode the selected points can be edited. Among others, the following actions are available: changing the point indices (also in presentation mode), modification of 3D coordinates, interpolation of 3D coordinates and focus values from the those of the neighbor points, geometry scan, "Assign focus values best" (i.e. a focus scan), disabling points for a scan.

· In APS point modes the following functions are available: points that lie near to each other and have a direct connection can be merged, additional points can be added to refine the grid, connections between points can be generated automatically.

· With the PSV-E-408 junction box for PSV-400-H4 and PSV-400-3D systems you can use up to 8 data acquisition channels. To ease setting the parameters for data acquisition the tables of the "A/D Settings" dialog provide copy and paste functions.

· When importing 3D geometries into APS Point 3D mode these geometries can exceed the size of the live video image. This eases the successive measurement of parts of large objects from different measurement positions.

· In presentation mode PSV-3D measurement can be stitched, if the measurements fulfill certain requirements. To do this, you create a combined scan file, where you can copy or link several single measurement files. In 3D view the measurement data and the combined geometry are displayed. All the usual analysis methods are available for combined files.

· For Polytec scan, single point and settings files, the browser displays the contained information. This includes the contained files of a combined file, geometry definition, data acquisition settings, window settings, and frequency band definitions. Several actions are available for the displayed elements. This functionality replaces the settings manager.

Improvements:

- For Vibrometer Controller OFV-5000 with firmware version 2.0 or higher time delays of the decoders will be corrected by the calculation of the spectra during data acquisition.

- Signal Enhancement for PSV-3D has been improved. The weighting not only takes the z direction into account but all spatial directions.

- Beam control in data acquisition mode displays the signal level of a connected reference vibrometer controller and allows to set the focus of the laser. With activated PSV-A-420 geometry scanning unit laser the signal level of the laser will be displayed continuously. The lasers can be switched on and off individually if the junction box or vibrometer sensor head supports this. The section "Optics" can be minimized in the same way as the other sections. The laser focus can be changed in smaller steps.

- In PCA mode (MIMO) partial coherences are available in addition to multiple coherences. The limitation that all reference channels must have the same physical quantity has been removed.

- In data acquisition mode you can export the geometry definition to the universal file and ME'Scope format.

- Setting a point at the current laser position in APS point modes is possible by pressing Ctrl+L. Connections of points are selected, when they intersect the tracking rectangle in addition to lie in the rectangle. In all APS modes objects can be selected by a tracking rectangle. When shift is pressed at the same time, objects selected before keep their state. When changing to APS Point 3D mode a suggestion has been added to the message on how to keep the geometry even on PSV-1D systems. Processing speed of the APS modes has been improved especially for large numbers of measurement points.

- The camera of the scan head is listed on the page "Devices" on the dialog "Preferences". The warning displayed when no camera is found can be disabled. The default setting for a reference vibrometer controller has been changed to none.

- Displaying the distance D of a measurement point to the scan head has been harmonized. In all cases the distance to the intersection of the laser in 0°/0° direction with the front late of the scan head is displayed. When using PSV-3D the distance is to scan head top.

- In data acquisition mode the live video window has a toolbar outside the APS modes, too.

- Optimization of the scanning order has been improved.

- As we do not support Windows NT any more, we can use a more current version

for the file format. This eliminated limitations when storing large numbers of measurement points and signals.

- "Assign focus values fast" has been improved for high signal levels, e.g. when measuring on retro tape.

- In MultiFrame mode up to 360 frames can be measured. The analyzer displays all frames, but frames with numbers above 12 cannot be switched on and off individually.

- The frequency range for ZoomFFT on PSV-400-M2 und M4 systems has been extended to 2 MHz.

- At the end of a scan the scan duration and the current time is displayed.

- If the laser of the geometry scan unit is active, the laser is positioned using the 2D alignment of scan head top, even when the measurement points have valid 3D coordinates. This is equivalent to the positioning during geometry scan.

- The internal generator of PSV-400-H4 and PSV-400-3D Systems is able to output generator signals on 4 channels. Up to now only 3 channels were supported.

- The command "Delete All" has been removed from the context menus in the alignment modes for single alignment points to avoid accidental use.

- The browser detects frequency band definition, amplitude correction, and user defined wave form files and marks these files with corresponding icons. Frequency band definitions can be dragged and dropped on opened scan files and the frequency band editor. Within the browser files can be copied by drag & drop. After the installation the browser displays the folder "My Documents". Project folders can be added via a context menu and the file menu. The full pathname of a file or folder is displayed in the status bar.

- The documentation for and the message of the signal processor have been improved. A printing function has been added. The calculation of spectra is possible with up to 1048576 FFT lines. Input starting with '=' is always interpreted as formula. Modifying a signal processor file created with an older program version leads to a warning message, that you might not be able open this file with the older version any more.

- Modifications to scan and single point files (comment, direction of vibration, distance to object under test, profile lines) will be marked by an additional '*' in the title bar of the window. The changes can be applied or rejected when closing the file. Read only files can be modified, too, but the changes cannot be saved. Modifications due to changing point indices, invalidating or validating points, and calculating bands will be saved at once.

- In 3D view you can rotate in all modes including select, zoom and pan by pressing shift and the middle mouse button. For 3D geometries the 3D eye point will be initially set to the position of the camera during measurement.

- Using the basic engine in data acquisition mode the scan heads, coordinate alignments, geometry definition, and junction box can be accessed. In presentation mode the presentation windows are contained in the windows collection.

- The installation program has been redesigned.

- The hardlock detection has been redesigned. This allows a faster program start and combined hardlocks for MSA systems (PSV and TMS software).

- The analyzer has been redesigned. The ASCII export saves all time data of a time signal, even if it cannot be displayed completely at the same time.

- The comment of a file can exceed 6 lines.

- When the junction box is used by a different application, e.g. by the PMA software, a suitable message is displayed during program start.

- Using the command line parameter /nosplash it is possible to suppress the splash screen on startup.

- The keys picture up and down to select the frequency band in presentation window do not switch to cursor mode any more.

- When adding a user defined data set to a file, a progress bar is displayed.

Supported Hardware:

- The MSA-E-401 junction box is supported.

Bug Fixes:

- When using frequencies above 1 MHz von PSV-400-M2-20 systems in FastScan mode not always the correct frequency was set.

- On PSV-400-H4 and PSV-300-3D systems with internal NI6711 generator the signal generation did not start synchronously to the first trigger pulse.

- On PSV-400-M2, M4, and M2-20 systems over range was not detected correctly in any circumstance.

- A scan with a large number of averages and FFT lines could cause a "buffer overrun".

- The internal generator did not generate a Burst Random signal for a one averaging

block when averaging was active. The start of the Burst Random signals was not synchronized to the Sync output of the generator.

· Switching remote controlled OFV-5000 vibrometer controllers on and off in presentation mode could lead to a situation where changes of the controller settings were not transmitted to the controller after having switched to acquisition mode. No error messages were displayed in this case.

· On PSV-400-3D systems a disturbed connection to the vibrometer controller top could under specific conditions cause a situation, where not all controllers had the same settings any more. This falsified the following measurements.

· When opening a new analyzer window, setting the minimum value of the x axis had no effect.

· The setting "Round values" did not work correctly in any circumstance.

· With high point density, e.g. of long time traces, the distances displayed between the points were not correct in the horizontal direction.

· When the memory was not large enough to display a file with long time traces, several error messages were displayed. Nevertheless, the file was opened, but the analyzer did not show anything.

· After a zoom in y and in x direction the section of a time trace displayed in the analyzer was not updated during a measurement.

· When scrolling a time trace in x direction during a measurement the new section was not calculated correctly.

· Zooming with a very small zoom rectangle had no effect on the analyzer.

· Using logarithmic display of the x axis with a high number of FFT lines could cause an incorrect display in the analyzer.

· The default range for the dB display of power spectra in the analyzer was not correct.

· Switching the PCA mode (MIMO) on or off had no effect on the signal menu of the analyzer until a measurement was started.

· When zooming the y axis of a phase display the ticks changed from 90° to 50° or 100° stepping.

· The page "Ranges" on the dialog "Analyzer Properties" was not shown for nyquist displays.

· The display of overlapping bands was not correct in the analyzer.

- When the animation angle in the legend of the presentation window was changed, the instantaneous value display of the profile lines was not updated.

- The buttons in the toolbar of the analyzer were not always active in presentation windows.

- During the animation of profile lines auto scaling of the analyzer did not work correctly.

- Horizontal profiles lines on rectangular point grids had steps in the analyzer.

- On PSV-400-B systems the analyzer did not show the measurement data any more, when the internal generator was switched off and on again.

- Under specific conditions the analyzer displayed the peak frequency of a frequency band one pixel beside the corresponding FFT line.

- When copying and pasting a graphic from the analyzer to Microsoft word, the aspect ratio of the graphic was changed.

- Changing the color of profile lines had an effect in the analyzer but not on the area pane of the presentation window.

- The resample function of the signal processor caused a shift of the time trace.

- When all points in a scan file were deselected, the signal processor did not update the cells linked to the data of the file correctly.

- Copying and pasting from a file to the signal processor and back did not work correctly in any circumstance. Moreover, not always all memory was freed.

- The "Signal Description" and "Extract" commands were available in the signal processor, even if the corresponding cell didn't contain any data.

- When the signal description of a cell was deleted, the cell in the signal processor was not updated.

- Not all functions of the signal processor showed the type of the parameters.

- The signal processor did not update the cell, when one of the parameters of the CopyVibData function changed.

- When data from a file were copied to the signal processor, this file was read only when it was closed and opened again.

- When the selection in the signal processor changed to an empty cell, the list of the point numbers still displayed the point index of the previous cell.

- If the area pane of the presentation window displayed RMS domain data, the point data could not be copied to the signal processor.

- The signal processor did not always use the 0 dB reference displayed at the y axis.

- The signal processor did not update an average spectrum that was changed by invalidating points in the corresponding presentation window.

- When copying data from points that were not measured to the signal processor, no or inadequate error messages were displayed.

- In cursor mode the area pane of the presentation window did not display the data that corresponded to the current position of the cursor in the analyzer in any circumstance.

- When displaying user defined data or time data in cursor mode, the box for selecting the frequency bands did not show "Cursor" at all times but a frequency band.

- The progress bar displayed during resorting the data, e.g. when switching to cursor mode, did not work correctly.

- The magnitude [dB] display of the area pane of the presentation window was not updated in cursor mode, when the cursor position in the analyzer changed.

- If in the basic engine a file was opened for write access via Polytec File Access, and e.g. because an error was raised, the file was not closed, the file could not be opened any more until the software was restarted.

- Executing PolyFile.CalcBands in the basic engine could cause an error.

- Using the basic engine it was not possible to load user defined generator signals for the generator.

- Under specific conditions points were visible outside objects in APS professional mode.

- Moving a group of point objects arranged on a regular grid could cause slightly irregular point positions in APS point mode.

- Loading a geometry definition with measured 3D coordinates could change the positions of the points on the video image under specific conditions.

- The universal file geometry import failed, if some datasets existed but were empty.

- When the distance measurement fails while setting a point in APS point mode 3D, a message is displayed. The button "Retry" on the message box had no effect.

- On PSV-3D systems a measurement could not be started with an inactive Vib 3D channel.

- The message "The following devices are remote controlled but not connected to an acquisition channel: PSV 3D" was displayed, even if a connection of the channel to the device existed.

- When using the junction box PSV-400-3D(1D) only one of the channels Vib Top, Vib Left, Vib Right could be connected to the vibrometer controller. The list only contained "VibController 1" but not PSV 3D.

- After switching from a PSV-3D junction box to a PSV-3D(1D) junction box and back, the calibration factor and the physical quantity could not be changed any more for the reference channel.

- If the bandwidth of the data acquisition settings exceeded the maximum bandwidth of the current vibrometer controller range, for the OFV-5000 vibrometer controller no warning message was displayed.

- In VDD mode a measurement without an active vibrometer channel was impossible.

- The COM port number for the serial RS232 connection to a vibrometer controller could not exceed 8.

- Using the PSV-3D(1D) junction box and a reference vibrometer controller could lead to inadequate error messages when leaving the Setup / Preferences dialog.

- If the path of an amplitude correction file was shown on the generator page of the "Acquisition Settings" dialog but the file did not exist any more, you could not switch the generator on, even if usage of the amplitude correction file was set to off.

- Deactivating the generator on the generator page of the "Acquisition Settings" dialog did not guarantee that the generator was off at the start of a measurement in any circumstance.

- Reading the amplitude correction file for the generator did not work correctly under specific conditions.

- The internal generator NI 6711 of PSV-400-H4 and PSV-3D systems stopped signal generation after switching the bandwidth under specific conditions.

- Signal generation of the NI6711 and MI6030 internal generators stopped, when the dialog Setup / Preferences was opened and closed with cancel.

- Data export or calculation of frequency bands could take very long when the

animation was running at this time. Now the animation is stopped automatically.

- When exporting to the ME'Scope file format the unit of the denominator for FRF-, H1- and H2 signals was missing.

- The command "Save as…" displayed an error message when saving a read only file.

- The command "Save as…" did not save the correct version number to the file.

- Saving animations could not be cancelled.

- The tooltip of the auto focus button on the beam control bar did not show the correct laser focus value in any circumstance.

- In PCA mode (MIMO) the coherence was shown in RMS domain.

- All types of files could be dragged and dropped on the application window, regardless if PSV could open this type of file.

- The setting "Auto Align" was activated after every program start.

- In 2D alignment mode the "Auto Align" mode did not work correctly if the live video image was zoomed.

- The overlap setting was not displayed in file info.

- When the windows security screen was shown, e.g. after pressing Ctrl+Alt+Del while the live video window was minimized, the software crashed on exit.

- During a scan not all buttons of the application toolbar could be used.

- In acquisition mode the menu scan was only visible if the live video window was active.

- The scan head MSV (NTSC Camera) was missing.

- Having a valid 2D alignment, the laser did not move when clicking on the live video image, if the vibrometer channel was not active.

- When the section "2D Point" was minimized during application start, there was a drawing problem on the beam control bar.

- Stopping a scan during re-measure could cause a scan point status to switch to not measured.

- The software internally used a to large minimum working distance for the focusing of the scan heads PSV-I-400 MR and LR.

- The automatic search for the camera was limited to COM ports 1-6. Now all existing COM ports are searched.

- On Windows XP systems the Options / Components dialog did not show the correct version numbers of the components in any circumstance.

PSV Software Changes between Version 8.22 and Version 8.21

Bug Fixes:

- When displaying area data of PSV files with 3D vibrations, the color scale was not used completely when selecting the display type Magnitude [dB].

- In MultiFrame mode the analyzer did not display the frame boundaries on time signals at all or not correctly. The measurement was not affected.

- Display of 3rd octave bands in the analyzer in presentation mode was wrong when using display type Magnitude [db(A)].

- For VDD you could not activate the acquisition modes ZoomFFT or FastScan.

- On PSV-400-M2-20 Systems measurements with averaging stopped after the first scan point or during continuous mode, respectively. This error was caused by a problem in the driver of the Spectrum MI3025 data acquisition board. Therefore please update the Spectrum driver on these systems.

- On PSV-400-M2-20 Systems with sampling rates above 5.12 MHz (2 MHz bandwidth) the external trigger and pre and post trigger did not work correctly.

- On PSV-400-M2-20 Systems in time mode there were error messages during data taking for certain settings with sampling rates below 5.12 MHz.

- On PSV-400-M2-20 Systems and MSA systems with generator board spectrum MI6030 a sync signal was generated only for the first block of generator signal burst random.

- For scan head VPI the software displayed +- 20 degrees at the end of the scanning mirror range. This has been corrected to +- 12.5 degrees.

- When the MSA-E-400 junction box was used by the PMA software, there was a misleading error message displayed at the start of the PSV software and a different junction box was automatically selected.

- Displaying measurement data in cursor mode lead to memory leaks when switching between different signals. This caused increasing memory usage until the

PSV software exited.

- The 2D alignment of PSV-3D used a method, that should have been used only for PSV-1D.

Improvements:

- On the display of the MSA-I-400 scan head now the live video image, the signal level of the laser vibrometer and an indicator, if the laser is on, can be displayed. You find the settings for this in acquisition mode on the dialog page Setup / Perferences / Scanning Head.

PSV Software Changes between Version 8.21 and Version 8.2

Bug Fixes:

- On MSV Systems with digital Basler BCAM camera, there was a shift between the point positions on the video image in acquisition mode and presentation mode. This has been fixed for the acquisition of new files. The error cannot be fixed for existing files.

- When exporting measurement files acquired in MIMO mode (Principal Component Analysis, PCA) to the ME'Scope and Universal File Formats, the function types of FRF's were not correct.

- In measurement files acquired in MIMO mode (Principal Component Analysis, PCA) with more than one response channel, the H1 functions were swapped.

- Measurement points with status Overrange did not participate in the animation, even if interpolation was on.

- The positions of points and surface elements in presentation mode were not as precise as in acquisition mode. This has been fixed for the presentation mode. Therefore the error is fixed for all existing files, too.

- The display of 3D geometries in some cases showed holes in object surfaces.

- In certain situations the definition of connection elements in APS point mode failed.

- Invalidated data was taken into account for filtering in presentation windows.

- For 3D geometries that contained points with identical coordinates these coordinates were partially set to 0/0/0.

- On PSV-400-M2-20 systems with high frequency Spectrum MI3025 acquisition boards, the start of the internal MI6030 generator during "Waiting for Trigger" lead to a hang of the software.

- The 3D alignment was not available on systems without PSV-S-ImpGeo software option.

- A OFV-5000 Controller with DD600 decoder but without digital decoder (VD07 or DD500) could not be remote controlled.

PSV Software Changes between Version 8.2 and Version 8.12

Novelties:

- With the geometry scan unit PSV-A-420 it is possible to measure 3D coordinates for scan points. The object coordinate system can be defined with a 3D alignment. The 3D alignment uses the geometry scan unit for easier definition of the coordinate system e.g. by defining the origin, a point on an axis and a plane of the coordinate system on the live video image.

- 3D coordinates are supported for 2D geometries. You can specify the orientation of the coordinate system by setting the direction of vibration. Moreover, you can enter the distance to the object under investigation. The software then calculates the 3D coordinates from the scanning mirror angles and the distance assuming a flat object under investigation perpendicular to the 0°/0° direction of the laser beam. These coordinates are available in acquisition and presentation mode and are used during export to ASCII, universal file format and ME'Scope files. The direction of vibration and the distance can be adjusted in presentation mode.

- The visualization of area vibration data has been redesigned. The software uses hardware acceleration on graphics boards that support this. Surface, isoline, status and scan point displays are available in 2D and 3D display modes. The settings for 3D geometries and 3D displays of 2D geometries have been unified. It is possible to display the complete video image together with the geometry in 3D display modes. Points can be selected in 3D display modes. Several points can be selected at the same time.

- The cursor mode allows to display data at the specified frequency on the geometry of the object under investigation without having to define bands. You can use the single cursor of the analyzer or an edit box in the readout of the presentation window to change the frequency. Phase animations and all other analysis methods of the presentation window are possible as with bands. Please note that cursor mode is limited by the amount of RAM in you system. The software needs to load

the spectral data of all measurement points into memory to display the data in cursor mode.

· The project browser allows to inspect folders and files of the file system, including network folders. Shortcuts to any folders of the file system can be added to the browser. Files can be directly opened from the project browser. The active folder of the browser is used as default path for all file open and save dialogs. This allows for a project oriented workflow. All measurement and related files such as animations, graphics, macros can be organized in a user definable folder or folder structure.

· The signal processor (optional) allows to analyze data in the presentation mode. A new document type provides spreadsheet functionality for handling data. Any data from measurement files can be copied to cells of the spreadsheet. A single cell can hold spectra or time data from any number of scan points. Other cells can be filled with formulas. Functions like add, subtract, multiply, divide, FFT, inverse FFT, digital filters, re-sampling, statistics (max, min, mean, standard deviation), etc. can be applied to the data. An attached analyzer displays the results. Data from several cells can be combined into a single display in the analyzer allowing for easy comparison of data. Results can be copied back into measurement files and stored as user defined data sets. This allows to display the processed data on the geometry of the object under investigation. Data can be linked instead of copied such that the data gets updated when the selection of scan points changes in the source document window.

· For systems with ATI 9000 or ATI 9600 graphics boards auto alignment is available in acquisition mode. During alignment you can choose to position the laser beam automatically to the clicked position on the live video image. Using the handset (PSV-Z-051, optional) you can teach in alignment and scan points. The software will find the position of the laser spot on the video image and place the alignment or scan point on this position. After geometry import it is possible to position the scan points exactly on the position of the laser spots on the live video image.

Improvements:

· The analyzer is able to display more than 0.5 MSamples at the same time. The maximum number of possible samples depends of the amount of RAM in your system. On the setup / preferences / display page you can select how many samples should be displayed at the same time. If the file contains more data, this data will be reloaded during scrolling. ASCII export will export all data that can be displayed at the same time with full zoom out.

· The universal file import of geometries supports datasets 780 and 781.

· The software checks for file versions. It displays warnings if existing files are

modified such, that they cannot be opened with older software versions any more. When opening files the file version will be checked against the current program version. If the file has been modified with a more recent version than the version you are currently working with, a message is displayed.

· In VDD I/Q mode the display of the overrange status has been added.

· The optimized processing for VDD is available on Intel Pentium processors in addition to AMD Athlon processors.

· On the setup / preferences / scanning head page the depth of sharpness factor for re-focusing during the scan (PSV-400 only) can be set to values larger than 100% allowing for very precise re-focusing at the cost of lower speed.

· In APS 3D point mode the modify coordinates command (PSV-3D only) can be applied to more than one selected point at the same time.

· The "Assign Auto Focus Fast" command has been made more robust. If the auto focus fails, up to two more points of the geometry are tried. Moreover, the signal level is taken into account to enhance the precision of the measured focus values.

· The sample macro SteppedFastScan.bas has been added. It allows to combine data of a sequence of fast scans to a single measurement file using user defined datasets. The data measured at the different frequencies can be displayed over the frequency in the analyzer for every scan point.

· The x-axis of the analyzer in profile mode has the unit meter.

Supported Hardware:

· The geometry scan unit PSV-A-420 is supported.

· The dimmer (optional) of the OFV-551 and OFV-552 sensor heads can be remote controlled with a slider in the beam dialog bar.

Bug Fixes:

· The frequency used sometimes differed from the specified frequency, when using the user defined generator signal.

· Using a 2 MHz bandwidth with NI 611x acquisition boards leads to error messages for some generator signals of the internal generator. Not all generator signals are available at this bandwidth because the internal generator is limited to 1 MHz bandwidth.

· The generator amplitude correction file did not get loaded when the content changed but the filename stayed the same.

- There could be a jitter in the internal generator time signal of PSV-400-H4 systems for certain sampling frequencies.

- On PSV-400-B systems generator frequencies only up to 11 kHz could be used in ZoomFFT mode.

- The PSV software could hang when the scan menu was pulled down at the end of a scan.

- Points that were not re-measured were marked as optimal, when re-measuring a file with signal enhancement.

- There was no correct error message on PSV-400-H4 systems when the external trigger was used for sample frequencies above 102.4 kHz.

- The over range detection for VDD on AMD Athlon processors was too sensitive.

- The 3D alignment did not work correctly in all situations. This was caused by a limited generation of start values for the scan head orientation when starting the alignment algorithm.

- A misleading error message was displayed, when starting a measurement on a PSV-3D system without a valid 3D alignment

- On PSV-3D systems the mirror settling time of the top scanning head only was taken into account for the waiting time between scan points.

- On PSV systems (not PSV-3D) the context menus in the 3D alignment did not show the correct commands.

- The "Select and change existing point" mode in the 3D alignment did not work after a switch to presentation mode and back.

- The analyzer continued to display the I/Q signal, when switching from VDD I/Q mode to time mode

- The laser was focused unnecessarily often, when the focus position was near to infinity during a scan. This lead to unnecessarily long scan durations.

- Moving the laser with the middle mouse button did not work correctly in zoomed state.

- Moving the laser with the middle mouse button did not work on MSV systems.

- The import of geometries from universal file format files could fail due to a not correct interpretation of the dataset 164.

- On systems with digital Basler BCAM camera (MSV-400) the brightness setting

was lost when switching to point definition mode.

· On systems with digital Basler BCAM camera (MSV-400) not the whole live video image was available for defining geometries in APS mode.

· Many context menus could not be tracked with the right mouse button.

· In some cases the analyzer did not display the whole frequency range for user defined data.

· Not all entries of the file info were correct when displaying the info for .pvd files.

· The file info did not show time and date for a measurement file.

· The animation / start all command did not set the start angle and the animation speed to common values.

· The profiles in the analyzer showed at the ends and at corners two points with slightly different y values.

· The cursor read out showed values if the cursor was outside the profile lines.

· Deleting a profile from a file had no effect when reopening the file.

· While animating a large time data file switching from 2D to 3D view mode could take a very long time.

· Zooming in and out and scrolling time data could lead to a missing display of the data in the analyzer.

· Zooming the y range in the analyzer while measuring long time traces stopped the automatic scrolling.

· After zooming the x range of the analyzer when displaying long time traces scrolling in x could lead to a change of the zoom factor.

· Setting the range of the x axis on the analyzer properties / ranges page did not work correctly for time signals with more the 0.5 MSamples.

· Bands that were pasted into the frequency band editor caused a recalculation of the peak frequencies. This was not desirable if you wanted to compare different measurements at exactly the same frequencies.

PSV Software Changes between Version 8.12 and Version 8.11

Supported Hardware:

- The digital displacement decoder DD-500 for the OFV-5000 Vibrometer controller is supported.

- The sensor heads OFV-551, OFV-552 and OFV-525 are supported.

- The MSA-E-400 junction box is supported. The video settings allow to control the illumination of MSV/MMA systems that have illumination control unit.

Bug Fixes:

- The high and low pass filter settings of a remote controlled Vibrometer controller were not restored correctly after a restart of the PSV software.

- When displaying area time data (time data animation) for the signal "Voltage" it could happen that not voltage values did get displayed but values of the unit set for the corresponding acquisition channel (e.g. "Velocity").

- When closing presentation windows in presentation mode the software could crash.

- If no coordinates were assigned to alignment points during a 3D alignment no error message was displayed.

- On systems with digital Basler BCAM camera (MSV/MMA) the dynamic range of the camera was not completely used. Now the brightness slider of the video settings controls the shutter time of the camera allowing for a considerably larger dynamic range.

- The PSV software crashed when displaying user defined datasets where the start of the frequency axis was larger than the mean of the start and end of the axis.

- When using the command "Assign focus fast" (PSV-400) there was no error message displayed when the given distance to the scan head was smaller than the minimum focusing distance of the PSV-I-400 scan head.

- Using scripting (PSV-S-VBEng) it was not possible to assign a user defined signal to the generator.

- For profile lines of various lengths it could happen, that the cursor could not be position on the whole length of all profile lines.

PSV Software Changes between Version 8.11 and Version 8.1

Supported Hardware:

- The Measurement Computing D/A board PCIM-DDA06/16 for the mirror control and digital input/ouput is supported.

- The OFV-5000 Controller with firmware version 1.22 is supported.

Bug Fixes:

- After a restart of the PSV software the selected scan head angles were reset to 0 degrees. The previously selected angles were lost.

- The 3D coordinate alignment dialog did not show an error message when clicking on "Calculate" and the coordinates had not been assigned.

- The Gate Input did not work on systems with PC430 data acquisition board.

- The event ScanStateChanged in macros did not get called by the Scripting Basic Engine.

- An installation of PSV 8.1 on systems with installed PMA 1.21 software lead to a not running PMA 1.21 installation.

- The scripting method GetDecoders of the VibrometerAcqProperties object returned the decoder name together with the decoder description. Now the method returns the decoder name only.

- On systems without software option PSV-S-ImpGeo the command "Assign Auto focus fast" resulted in an error message.

- The start of an animation in view 3D geometry lead to a loss of the transparency setting of the video image.

- When exporting to universal file or ME'Scope the vibration direction of the point data of channels Vib X, Vib Y and Vib Z of PSV-3D systems was always +Z.

PSV Software Changes between Version 8.1 and Version 8.0

Novelties:

- It is possible to open measurement files in acquisition mode for re-measuring selected scan points in the files. If your analysis of a measurement in presentation mode reveals some scan points that you would like to re-measure, invalidate these points in presentation mode and open the file for re-measuring in acquisition mode. The software will repeat the measurement at these points.

· A principal component analysis (optional) for PSV-400-H4 and PSV-300-H systems allows to calculate FRF's in a MIMO (multiple input, multiple output) measurement setup with up to three simultaneous excitations. These FRF's can be used to perform a modal analysis on the data e.g. with Vibrant's ME'Scope or other software packages. Please have a look into the MIMO chapter of the theory manual for further details.

· It is possible to import 3D geometries in acquisition mode. The universal file format (UFF) and ME'Scope structure files are supported for import. Before you can import 3D geometries you have to perform a 3D coordinate alignment to relate the position of the scan head in space to the object coordinate system of your 3D geometry.

· The support of the auto focus capabilities of the OFV 505 / PSV-I-400 interferometers has been improved. You can assign the focus values to the scan points in a new 'fast' mode. In this mode the software selects the nearest and farthest scan point to the scan head, performs an auto focus at these points. Afterwards, the focus values for the other scan points in between are calculated. As a prerequisite you either have to import a 3D geometry or you have to specify the distance to the measurement object in acquisition mode.

· On the A/D settings dialog's channel page you can specify the direction of vibration for all channels (+-X, +-Y or +-Z). Moreover, you can specify the point index for the driving point for reference channels. Both will be used for the export in universal file or ME'Scope format. You can change the settings at the time of export, too.

· Digital Demodulation (VDD, optional) is supported by selecting the front ends VDD-Z-011 or VDD-Z-010. You can use either a OFV-5000 controller with DD-600 decoder, a VDD-650 or a VDD-660 system.

· The user defined data sets available via PSV-S-VBEng scripting software option and Polytec File Access have been improved. You can add user defined time domain data to original FFT domain data and vice versa, single point data to fast scan mode files and point average data to original time domain data. You can add scalar user defined data to 3D geometries. 3D vector user defined data is not supported. Note that we have slightly changed the programming interface compared to PSV 8.0. You have to use the GetPointDomainsEx and GetPointAverageDomainsEx methods of the PolyFile object with the correct build flags to create and access user defined data sets. Please have a look at the Polytec File Access manual or the sample macros installed in the Macros folder of the PSV installation directory for details.

· Polytec File Access includes a vector math, signal processing and statistics library, that allows e.g. to calculate FFT's, inverse FFT's, digital filters, window functions,

min, mean, max, standard deviation etc. We have added new sample macros demonstrating the use of this library. Please have a look at the Polytec File Access manual and the Macros folder in your PSV installation directory.

- The basic engine scripting supports the OFV-5000 controller. As the controller is dynamically checked for the built in decoders and ranges the programming of decoders and ranges has been changed from working with fixed enumerator values to strings. You can query the available decoders and ranges, decide which decoder and range to use and then set this range. This is the preferred method for earlier controllers, too. Moreover you can query the controller for the built in high pass and low pass filters.

Improvements:

- Both the universal file and ME'Scope export dialog store the selection of which data to export so that you will find the same selections again when re-entering the dialog. Note that this is only possible for files with the same number of channels, the same domains and signals.

- On PSV-400-M2-20 high frequency systems you can select the input impedance either to be 50 Ohm or 1 Mega Ohm on the A/D settings dialog's channels page.

- The SaveAs method of Polytec File Access has been extended. E.g. you can choose to save original data or user defined data only. Please have a look into the Polytec File Access manual for details.

- The ChannelAcqProperties scripting object has been extended by two properties providing the parameters and the RMS correction factor of the current window function.

- The Theory Manual has been revised and extended by chapters about MIMO, digital filters, generator waveforms and the calculation of signals.

- The installation programs of PSV and VibSoft support independent parallel installations of different program versions on the same PC. Please note that this support starts with PSV 8.1 and VibSoft 4.1. If you want to install programs with lower version numbers parallel, please follow the instructions for parallel installations given above.

- The PSV and VibSoft basic engine supports parallel installations of different program versions on the same PC. The macros will use the scripting object versions of the currently used application. Please note that this support starts with PSV 8.1 and VibSoft 4.1 Macros executed with earlier program versions use the latest scripting objects installed on the PC.

- Data handling for PSV-300-F, PSV-400-M2 and M4 systems has been optimized. This results in a significantly lower system load especially when using 3 or more

channels or working with VDD systems.

- When using the 2D alignment with less than 10 points on flat objects perpendicular to the 0° direction of the laser beam, the laser beam did not hit the scan points exactly when using large vertical angles. We have improved the 2D alignment procedure to correct this effect. Please note that you might get a slight change in the alignment when you import alignment settings created by earlier program versions. In this case, repeat the 2D alignment.

Supported Hardware:

- The PSV-400-3D hardware is fully supported by the PSV software.

- The handset PSV-Z-051 is supported for PSV-400 and PSV-400-3D hardware. Note that the vibrometer controller OFV-5000 has to have a firmware version 1.21 or higher.

- The software supports the use of the laser focus wheel of the OFV 505 sensor head. Note that the vibrometer controller OFV-5000 has to have a firmware version 1.21 or higher.

- The ATI Radeon 9600 Pro graphics board is supported.

Supported Software:

- The Basler BCAM driver version 1.7 is supported. This driver should be used for digital Basler fire wire cameras (MSV-300 and MMA-300 systems only).

- The ATI Catalyst driver 3.9 is supported and recommended for ATI 9000/9600 Pro graphics boards.

Bug Fixes:

- The window function RMS correction factor was not correct for auto power, FRF, H1, H2 and coherence signals.

- When using signal enhancement the number of averages was not always sufficient to get optimal point quality.

- Setting the acquisition mode to fast scan could lead to a wrong error message about the generator settings.

- Using a HP33120A external generator and setting the amplitude to 10 V could lead to an error message.

- When loading a defective user defined generator file there was no error message.

- When using more than 100 averages there was no over range signaled on the status

bar for the averages above 100.

- When using digital filters for multiple channels this could lead to multiple messages when e.g. bandwidth settings were changed. Now only a single message appears.

- When exporting time domain data in the ME'Scope file format these data were not recognized as time data in ME'Scope.

- When displaying a time data animation zooming in and out in the analyzer window could lead to an incomplete display of the data in the analyzer window.

- Selecting a preferred scanning direction on the preferences dialog's scanning head page could lead to unselecting the check box of the pan/tilt control.

- Displaying magnitude and phase in 2D view style and switching to 3D geometry view style lead to a paired view in 3D geometry mode. There should have been no phase display in 3D geometry view style.

- When invalidating points in 2D view style and switching to 3D geometry view style this view was not updated.

- Selecting the 1/3 octave domain in the 3D geometry view style lead to a software crash.

- A 3D geometry with points only (no connections between points) did not get displayed in the 3D geometry view style in presentation mode.

- Performing an undo operation in the APS 3D point mode could lead to point coordinates x, y, z = 0.

- On PSV-300-3D systems the entry D (distance) on the 3D point section of the scan head control did not have a unit.

- When exporting the point status of a file with 3D geometry in ASCII format the header of the file was not correct.

- The PolyUFFImport.dll appeared twice in the components list of the about dialog.

- Activating the Multi Frame acquisition mode via scripting did not activate the multi frame channel Ref3.

- Executing the Method Application.Windows.Add() in a basic engine scripting macro lead to an error message and to a software crash.

- Polytec File Access did not return a readable error message when a write protected file was opened with read/write access.

- On Japanese versions of Windows 2000 and XP you could not remote control the OFV-5000 controller.

- Using a OFV-3000-S with user defined low pass filters you could not set the low pass filter in the software.

- The arrow of the vibrometer range control in the status bar was too small.

- When using the PSV software in acquisition mode without having a OFV-5000 controller connected could lead to an error message about a wrong firmware version of the controller.

- The PSV-E-400 front end was not detected on PSV-400-M2-20 systems.

- When you tried to change the ZoomFFT settings on PSV-400-M2-20 systems the software crashed.

- It was not possible to import the window layout from a settings file in the settings manager.

- Importing a settings file of file version 7.2 lead to invalid settings.

- Switching from a four channel to a two channel front end lead to an error message.

- On PSV-300-3D systems using the PSV-Z-3D (1D) front end lead to a message that some devices are remote controlled but not connected to an acquisition channel although the devices were connected.

PSV Software Changes between Version 8.0 and Version 7.45

Novelties:

- The PSV-400 hardware is fully supported by the PSV software. You can remote control the OFV 5000 vibrometer controller and the OFV 505 / PSV-I-400 interferometers. This includes the automatic laser focusing. In APS scan point definition mode (optional) it is possible to assign the current laser focus position to APS objects. The focus positions will be automatically restored during the scan measurement. Moreover it is possible to perform an automatic laser focus scan. Here at every defined scan point the optimal laser focus is determined and saved individually for every scan point.

- PSV now supports user defined datasets. An existing single point or scan measurement file can be extended by user defined datasets. Each dataset can contain up to 12 frames of data that can be displayed in the analyzer windows on

top of each other. The data can also be displayed in the area part of presentation windows. The datasets can be added to single measurement points or the average spectra over all points. The datasets are supported in FFT and time mode measurements. The datasets can be created by using the programming interface of Polytec File Access. For more details please have a look at the Polytec File Access manual installed together with the PSV Visual Basic Engine option. There are four new example macros demonstrating the generation of user defined datasets. You find these macros in the PSV installation directory in the subfolder "Macros".

- On MSV-300 systems the VDD mode (optional) is supported for scanning measurements.

- PSV allows to display data using a logarithmic dB scale. Now you can specify which measurement value corresponds to the 0 dB reference value. You can specify the 0 dB reference for every physical quantity supported by PSV. You can either specify global settings that are valid for all installed PSV or VibSoft versions or you can set the 0 dB reference for the active measurement file only. These settings will be stored in the measurement file.

- It is now possible to animate PSV-3D time mode data as displacements to the 3D geometry of the measurement object.

- The 3D geometry view style has been extended. It is now possible to select which spatial components of the data (X, Y and/or Z) are displayed as a displacement to the zero position of the 3D geometry. Any combinations are valid. You can scale up and down the displacement to the zero position independent of the color scale of the display. In addition you can choose between parallel and perspective projection, switch the lighting model on or off and quickly choose a sight (front, back, left, right, top, bottom) to the object. You can rotate the object around the line of sight.

- The 3D alignment dialog now allows to specify if you are using a mirror to align the coordinates and measure the data.

- In addition to export measurement files to the universal file format (optional) you can choose to export files to ME'Scope shape, structure and/or block files (optional). These files can directly be added to ME'Scope projects from within ME'Scope.

Improvements:

- The user interface for multi frame mode settings has been revised. Multi frame now supports the three setups 'Manual', 'Engine Cycle' and 'Frame Cycle'.

- The rendering of live video using the ATI Radeon 9000 Pro boards has been revised. PSV now supports a refresh rate of 25 Hz using analog cameras (was 8 Hz

before) and the full resolution of 1280 x 1030 pixels of the Basler BCAM camera on MSV systems (was 650 x 515 before).

· The ordering of scan points for a scanning measurement has been revised. In addition to choose a preference direction (left to right or top to bottom) for the order of scan points you can now let the software optimize the ordering with the help of a traveling salesman algorithm.

· The file open and file save dialogs now have an additional sidebar for quicker navigation to common windows folders

· The file info and frequency band dialog are now resizable.

· The were general improvements to the user interface style especially when using Windows XP.

· The end date of your software maintenance is now coded in the hardlock. You can display this information in the "Help/About PSV../Options/Software Options" dialog.

Supported Hardware:

· The PSV-E-400 junction box is supported. This junction box is connected to the PC via an USB cable and will be automatically detected by the PSV software. It supports ICP for the reference channels and differential input for all input channels. The generator signal outputs will be electrically disconnected from the internal generator when the generator is switched off. This prevents electrical spikes on the generator output of the junction box. The box supports switching the laser of the connected interferometer off. This is used by the PSV software when a snapshot of the live video is taken.

· The Basler BCAM driver version 1.6 is supported for MSV systems and enclosed on the Polytec PSV CD. This driver can be used on Windows XP, which was not possible with the previous drivers.

· The Spectrum MI.6030 generator board is supported for MSV-300-2M20 high frequency systems.

Bug Fixes:

· The peak hold averaging mode did not work correctly.

· The dB values displayed for RMS time data were not correct.

· On systems with ATI Radeon 9000 Pro board a trace of the laser beam was visible in a snapshot of the live video.

· On German operating systems it was not possible to correctly set the target quality

for the 3D alignment in the 3D alignment dialog.

- On German operating systems the command 'Modify coordinates…' in 3D point mode did not work.

- When acquiring more than 512.000 samples in time mode, the cursor readout did not show a value when placed at the right part of the time signal.

- The sampling rate of ZoomFFT mode measurements displayed in file info was wrong if the file info was displayed on a PC with a different acquisition board from the board in the PC where the measurement was originally taken. This has been fixed for new measurement files.

- Selecting an FFT average number of more than 100 and then setting the averaging mode to off lead to measurement files with no time data although the average count was below 100. Note: PSV does not store time data in single point files when you specify more then 100 averages and in scan files.

- It was not possible to focus the laser beam in the beam dialog bar when there was no logical connection of an acquisition channel to the vibrometer controller.

- When displaying measurement files in view single scan point with view style 3D geometry the channel selection in the toolbar of the analyzer pane of the presentation window was not always enabled.

- The cursor of the analyzer window did not interpolate between measurement values when the style 'Solid line' or 'Solid line & markers' was selected and the cursor was placed between measurement values.

- The initial scaling of the analyzer window did not work correctly when displaying signals containing counts or for channels where a scaling factor other than 1 was given.

- The average spectrum displayed in the lower pane of a presentation window disappeared if the area cursor in the upper pane was activated and then deactivated.

- In acquisition mode the menu bar showed the menu entries of the presentation mode when an analyzer window was active.

- When selecting 'Copy' from the edit menu while in APS point definition mode this did not copy the selected APS objects but copied a snapshot of the live video to the clipboard.

- In acquisition mode it was possible to choose to invalidate an optimal or valid scan point via the context menu. This lead to a crash of the software.

- Several cells of tables of the preferences and A/D settings dialogs were not grayed

out although you could not change any values in these cells.

- Camera and alignment settings could not be loaded in settings manager from settings files with file versions below 7.03.

- When a PSV setup was aborted during a parallel installation with an older software version this could lead to a failure when starting the older version the next time.

PSV Software Changes between Version 7.45 and Version 7.43

Novelties:

- The 3D alignment for PSV-3D systems has been extended. The 3D alignment dialog provides control on the target and current qualities of the alignment for the three scan heads and individual points of the alignment. There are new recommendations on how to provide points for the 3D alignment. Please see the extension to the software manual for PSV-3D systems.

- In 3D and 2D alignment mode it is now possible to delete all or individual alignment points. Alignment points will be restored when re-entering the alignment mode.

- In 2D alignment mode on PSV-3D systems it is now possible to switch between the scan heads while staying in alignment mode. The already defined alignment points are saved and restored when switching back to the selected scan head.

- In 3D point definition mode and in the other APS modes on PSV-3D systems it is possible to adjust the 3D coordinates of single points. You can move the 3D coordinates on a line that is the averaged direction of the three laser beams. With this feature you can optimize laser positions when the 3D alignment is not precise enough.

- For files measured on PSV-3D systems that contain a full 3D geometry and 3D vibration data a new view style "3D Geometry" in presentation windows is available. In this mode a perspective view of the 3D geometry of the measurement object is shown. Vibration data is displayed as a displacement from the zero position of the individual measurement points and as a color code. With this view style it is possible to get a 3D impression of the vibration of the measurement object. In this view style you can select the channels Vib 3D or Vib 3D & Ref1 that are a combination of the Vib X, Vib Y and Vib Z channels. Please note that this mode is available for FFT data only but not yet for time data.

- In many windows in presentation and acquisition mode context menus are

available by clicking the right mouse button in this window. The menus offer a collection of frequently used commands that are available in the current context.

- There is a new menu "Scan" in acquisition mode that provides access to the commands in the APS point definition mode, alignment mode and point status display mode. The menu is available if the live video window is active. The menu dynamically changes when the mode changes.

- The beam dialog bar in acquisition mode now displays the signal level and focus controls of all three vibrometer controllers on PSV-3D systems at the same time. It is not necessary to switch between the scan heads to adjust the focus of the laser beams any more. You can directly click on the corresponding controls on the beam dialog bar.

- It is now possible to use up to 10.000 averages. Please note that no time data is stored in files and displayed in analyzers if you use more than 100 averages. This is due to the large amount of storage the data would need in this case. The number of averages in time domain averaging with signal enhancement is limited by the amount of available memory and might be lower than 10.000.

Improvements:

- The point status "low signal" is not displayed any more. PSV 7.x version did not use this point status.

- Moving the laser beam with the middle mouse button now takes the hardware zoom of the camera and zooming into the live video window into account. The laser beam now follows the mouse more precisely, especially in zoomed state.

- On PSV-3D systems it was necessary to have a valid 2D alignment for all scan heads even if measuring in PSV-3D (1D) mode. You can start a scan if an alignment for all active channels is available, that are not marked as reference channels. For reference channels and deactivated channels you do not need a valid 2D alignment.

- Importing a new 3D alignment or improving an existing 3D alignment lead to a recalculation of the 2D position on the video image of imported or teached-in 3D points. Now a message box allows the user to skip recalculation of the 2D positions in this case.

Bug Fixes:

- In presentation mode it was possible to change the front end and the devices but not changing the connections to the vibrometer controllers. The devices page of the preferences dialog is now available in acquisition mode only.

- The header of ASCII export files of band data did not contain the frequency of the band.

- When saving a read only file via "Save As…" or "Save Bands…" etc. the software proposed a filename containing "(read only)".

- When opening a file in presentation mode the modified date (visible in windows explorer) of the file changed even if no changes to the file were made.

- When losing the connection to a vibrometer controller, no error message was shown.

- When changing the comment and/or profiles in a fast scan file these changes were not saved. You had to save the file via "Save As…" to apply the changes.

- When importing a 3D alignment via the settings manager while points had been selected in the 3D point definition mode, the point selections and the points were not drawn at the same position.

- When changing from acquisition to presentation mode and back on MSV-300-M systems, it was not possible to start an acquisition any more.

- It was not possible to import 3D point geometries from measurement files in settings manager.

- When invalidating a measurement point in a zoomed view of the presentation window the zoom factor of the scan points and the video image did not correspond to each other any more.

Supported Hardware:

- On PSV-3D systems an USB to RS232 adapter is supported to connect to the vibrometer controllers. This is especially useful to speed up the communication when displaying all three signal levels at the same time.

Supported Software:

- Windows 98 is not supported any more.

PSV Software Changes between Version 7.43 and Version 7.42

Bug Fixes:

- On MSV-300-M systems measurements did not start after changing from acquisition to presentation mode and back.

- PSV-300-U and PSV-300-H systems did produce wrong values for real signals (not complex signals) when using Peak Hold averaging mode.

- H1, H2 and Coherence signals were not imported from PSV-200 files or were not calculated correctly.

- Importing PSV-200 files of file version 5.2 could lead to wrong single point or band data.

- Vibrometer settings were not imported from PSV-200 files and therefore could not be displayed in file info.

- On MSV-300-M systems using certain combinations of bandwidth, FFT lines and internal generator signals the live video image and the video image saved in the measurement files could have been corrupted.

PSV Software Changes between Version 7.42 and Version 7.41

Bug Fixes:

- On systems with Coreco Bandit video board the wrong section was displayed when zooming into a horizontally flipped video image.

- On MSV-300-M Systems it was not possible to select the 200 mV input range of the data acquisition board.

- When invalidating measurement points of files measured in time mode the software asked to correct the (not existing) average spectrum when the file was opened the next time.

- Displaying measurements in time mode (not RMS) could lead to a crash of the software when switching to the 3D view.

- When an OFV-4000 controller was connected to and controlled by the software this lead to a crash of the software.

- When switching to profile mode and back to object mode in the presentation

window this could lead to the display of profile lines in the object mode.

PSV Software Changes between Version 7.41 and Version 7.4

Bug Fixes:

- Using the 2D Alignment e.g. for teaching in measurement points could lead to uncertain results (PSV-3D systems only).

- The hatched areas marking regions not reachable by the laser beam of the scan head have been removed in the 3D point definition mode (PSV-3D systems only).

- Changing from normal point definition mode to 3D point definition mode lead to a loss of the point definition. (PSV-3D systems only).

- The size of the measurement point markers did not scale correctly when zooming in.

- When switching the view style from 2D to 3D of a zoomed presentation window, the small overview in the legend and/or the rectangle marking the zooming section disappeared.

- A double click on the title bar of the live video window could lead to a zooming-in of the display.

- On systems with ATI Radeon 9000 Pro graphics boards with analog video camera a black border was visible at the edges of the live video.

- On systems with ATI Radeon 9000 Pro graphics boards with digital video camera (MSV systems only) the drawing performance on the live video was very low. This could lead to problems in point definition mode and for the update of the display while scanning.

PSV Software Changes between Version 7.4 and Version 7.3

Novelties:

- PSV 7.4 allows to zoom into the area displays in presentation mode and into the live video window in acquisition mode. You can pan while you have zoomed into

one of the windows.

- The toolbars of the analyzer windows have been extended by a pan mode icon. Either by switching to pan mode via the toolbar icon and using the left mouse button or by clicking and holding the middle mouse button or scroll wheel in zoom mode you can pan the analyzer display, i.e. grab and shift the zoomed display and change the position of the zoomed section.

- In acquisition mode time (optional) now up to 64 Megasamples = 67.108.864 samples are selectable (this was limited to 0.5 Megasamples = 524288 samples in earlier software versions). Please note that a lot of samples need a lot of space on disk. There are limitations to the number of samples due to the resulting file size and the physical RAM of your computer. Please see the software manual for further information. Windows NT is not recommended for use with large numbers of samples. There might be limitations depending on your computer hardware especially for high sampling frequencies on PSV-300-F systems. Using a lot of samples there could lead to buffer overruns due to the high demand of processing speed.

- On the general page of the A/D settings dialog a new averaging mode 'Peak Hold' has been added. The Peak Hold spectrum is calculated from the FFTs by calculating the maximum magnitude at each frequency line of the FFTs. Please see the software manual for further details.

- The Vibrometer page on the acquisition settings dialog has been redesigned. It shows the settings of only a single Vibrometer controller at a time, not both as in the earlier software versions. If the software is connected to two Vibrometer controllers you can easily switch between the two controllers. By selecting 'Apply to both' you can copy the settings to the second controller if both controllers are of the same type and have the same decoders built in. The frequency limits of the Vibrometer ranges are now displayed to the right of the corresponding ranges.

- While doing an alignment in PSV acquisition mode it is now possible to move the laser beam not only by the buttons on the scanning head dialog bar but also by using the mouse. The laser moves while you press down the middle mouse button (scroll wheel) and move the mouse. The laser does not follow the mouse movement exactly as the alignment is not available yet, but nevertheless this feature is quite useful to speed up the alignment process.

Improvements:

- In universal files exported by PSV software now the compatibility mode is written to the comment line at the beginning of the universal file.

- Printing and saving graphics has been improved. When printing or saving the graphics of a splitted view (e.g. presentation windows showing an area display and

an analyzer display on top of each other) you can now in addition to select the upper and lower view select both views for display on a single page.

- When using burst random or burst chirp generator signals now a warning message is shown when you have not selected the external trigger source.

- When using multiple channel generator signals these signals were calculated unnecessarily often. This could lead to a repeated display of a progress bar either by changing any acquisition setting or by importing settings while the generator was on or by switching the generator on.

- When a lot of measurement points were invalidated in a file (e.g. by invalidating all not optimal points) opening such a file could take quite a long time. This was caused by calculating the corrected average spectrum every time when the spectrum was about to be displayed. This has been improved by storing the corrected average spectrum in the file.

- Positioning the laser beam by clicking on the buttons in the scan head dialog has been improved. It could happen that the laser beam jumped at the beginning of the movement.

- 1/3 octave displays are available for combined signals (Vib & Ref) like FRF, H1, H2 and coherence. Please note that for the 1/3 octave displays first the signals are calculated and then the RMS values for the ranges are calculated.

- The labels for the 3D coordinates in the 3D view mode of the presentation windows have been changed from X, Y, Z to U, V, S. S denotes the signal axis, U the coordinate from left to right and V from bottom to top of the video window. This labeling is more consistent with future versions of PSV that will support 3D geometries and vibration signals. The same labeling is used for the columns of the files produced by ASCII export of area displays.

- For displaying area data in presentation windows new color palettes are available on the dialog "Color Palette Selection": Red-Blue, Rainbow and Yellow.

- When displaying the average spectrum in presentation windows, you can now select measurement points in the area display. This allows e.g. to invalidate points and to see the effect on the corrected average spectrum.

Bug Fixes:

- When re-measuring data the software component that calculates the averages was not re-initialized properly. This had several effects: the average count of the first re-measured scan point started at 1, even if some averages had been measured already. The signal enhancement algorithm did not fully work for the re-measured

data. The average spectrum over all measurement points had a too large weight on the re-measured points. This also causes the effect that when invalidating a measurement point in the resulting scan data, the average spectrum can not be corrected to full extend.

- Universal files exported with PSV did not work in certain compatibility modes for geometric elements that had 2 or more than 4 nodes. Elements with more than 4 nodes are divided into triangles and elements with 2 nodes are exported as trace lines and not as surfaces any more (dataset 82 instead of dataset 2412).

- Displaying single measurement point data in two presentation windows of the same file could lead to displaying data of the wrong measurement point in the second window.

- On several dialogs and other user interfaces not all strings have been displayed completely.

- When selecting a user defined waveform for external generators an error message was displayed and it was not possible to use this waveform.

- The internal generator of PSV-300-F systems did not support white noise or burst random signals in time acquisition mode for sampling frequencies above 1.28 MHz.

- When a buffer overrun occurred during a scan, the status of the last measurement point was valid even if not all average blocks of this point had been collected.

- Long lasting (more than 10 min) universal file exports could lead to a software crash when closing the window after that. Also closing windows could lead to a crash when PSV had been inactive for a long time.

- The Vibrometer ranges 125 mm/s / V and 1000 mm/s / V were missing for the OVD01 DC decoder.

- When using the Vibrometer controllers OFV3020 and OFV3020_S wrong filter settings have been displayed.

- Converting a file created with PSV versions before 7.0 could lead to renaming the file to a temporary filename.

- Uninstalling PSV 7.3 on systems with parallel installations of earlier versions could lead to uninstalling libraries that are necessary to run the earlier versions.

- Starting the frequency band calculation while the single point spectra were displayed in the presentation window could lead to a sequence of displaying all

single point spectra.

- On systems with German user interface it was not possible to select 'Winkel' as a unit on the channel page of the A/D settings dialog.

- On systems with German user interface the menu entry 'Symbolleiste' in the 'Analysator' menu was disabled.

- Selecting a measurement point with status 'not measured' and display it's single point data resulted in displaying some data of a valid point.

- It was possible to start a scan without a valid alignment (directly after the installation of the software). This lead to measurement files that could not be opened in presentation mode.

- Switching between different scan heads on the 'Scanning Head' page of the Preferences dialog could lead to a black and white video image where the images should have color and vice versa. Moreover clicking OK lead to a flipped video image.

- The Count property of the ChannelsAcqProperties object (scripting option) did report a channel count of 4 after having switched from a 4-channel front end to a 2-channel front end.

Supported Hardware:

- Support for new video board ATI Radeon 9000 Pro

- The two channel 12 bit Spectrum data acquisition board MI3025 offering sampling rates of up to 102.4 MHz on every channel is supported (optional, MSV-300-M systems only). There are limitations to the maximum sample number due to the size of the on board memory of the MI3025. Please note that you can connect this board to 50 Ohm signal sources only as e.g. the OVD30 decoder. Please see the software manual for further details.

Supported Software:

- National Instruments Driver NiDaq 6.9.3 is supported and strongly recommended for use.

- Microsoft DirectX 9 is supported and required for use.

- Windows XP is supported for analysis and acquisition systems.

- We do not recommend using Windows 98 any more for analysis purposes. We do not perform regression tests on this operating system and support is likely to come

to an end at the next release of the PSV software.

Polytec GmbH, Waldbronn, June 11th, 2008