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## Software Update Notification

### Zetasizer Software v 7.02

<b>Product</b>	<b>Part No. - Issue</b>
Software suite	PSS0012-33

<b>Product</b>	<b>Part No. - Issue</b>
Zetasizer series	PSW0085/7.02
Firmware	PFW0044/1.34.002

<b>Manuals</b>	<b>Part No. - Issue</b>
Zetasizer Nano series	MAN0485/1.1
MPT-2	MAN0318/4.0
Zetasizer APS	MAN0425/1.0
Zetasizer $\mu$ V	MAN0428/1.0

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## 1. Overview

This document details the release of software PSS0012-33. This is the Zetasizer software version 7.02.

It covers the additions and improvements as well as issues fixed in this release of the software.

If you are upgrading from any version before 7.01, you should also read the SUN issued with version 7.01.

## 2. Computer

### 2.1. Operating system support

Version 7.02 is compatible with Windows 7 32 and 64 bit. It is believed to be compatible with Windows XP Professional SP3 but note that it has not been fully tested with that operating system

**Note:** Windows XP 'Home' and Windows Vista versions are not supported

### 2.2. Minimum computer requirements

Intel Dual Core or hyper threaded processor, 2GB RAM, 150MB free hard disk space, 1024 x 768 screen resolution running in 16 bit colour mode, CD-ROM drive, 1 free USB port, Windows XP Pro SP3 or later operating system.

The software and system can be used with a laptop computer with a free USB port.

### 2.3. Recommended computer requirements

Intel Core 2 Duo, 2GB RAM, 160GB hard disk drive, 1024 x 768 screen resolution running in 32 bit colour mode, CD-ROM drive, 1 free USB port, Windows 7 operating system.

## 3. Installation

It is assumed that you have authority to install or update software within your company's SOPs. If you do not have this authority please consult with your I.T. support department before proceeding.

It is assumed that you have Administrator rights for the computer. This is required by the installation process.

Installation of the software must be performed with the instrument switched off or not connected.

### 3.1. Windows 7

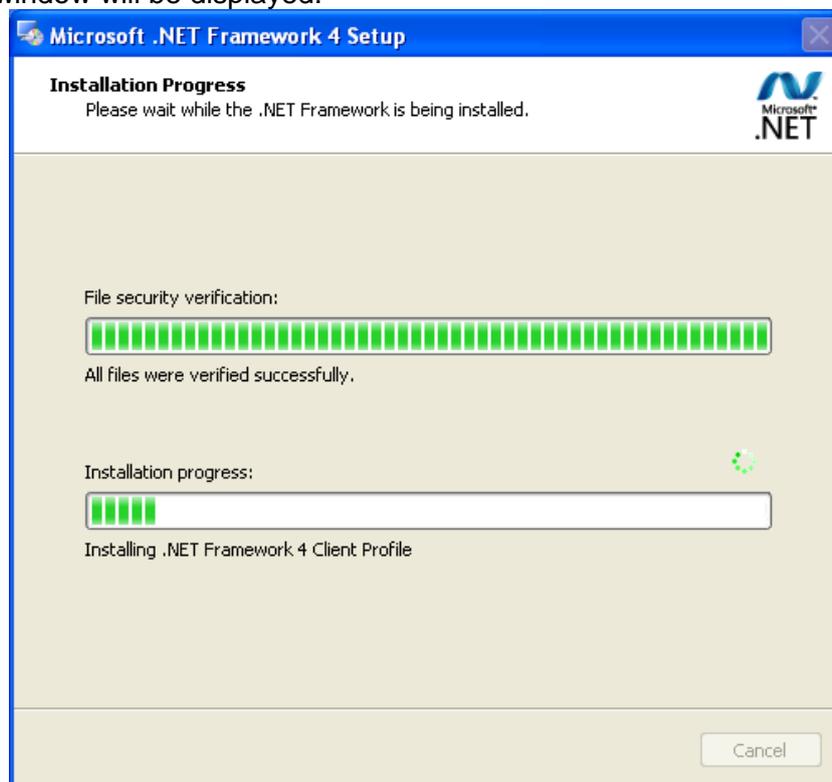
The software suite comes on an auto-loading CD-ROM. Inserting the CD into a system configured to auto-run a CD will run the installation program automatically. If your system does not support this feature run the setup program from the root directory of your CD drive.

**Note:** For Zetasizer Series software, Windows 7 will not allow an installation if the user does not have administrator access. This is in line with Microsoft's Logo policy and is standard practice.

**Note:** You must either switch-off the Zetasizer or unplug the USB cable from the PC or Zetasizer before installing the software.

### 3.2. .Net Framework 4

The Microsoft .Net Framework 4 must be installed for the Zetasizer software to run. This is installed during the Zetasizer software installation progress. Completion of this stage of the installation can take a few minutes, and in the case of Windows 7 64 bit can take over 10 minutes. Whilst the .Net Framework is being installed the following window will be displayed:



### 3.3. Connecting the Zetasizer to the PC

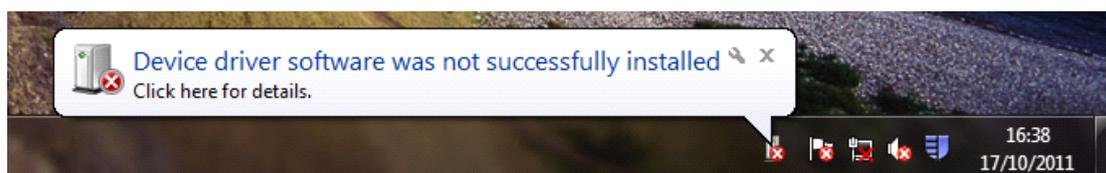
With the software installed the instrument should be connected via the USB port, and the system switched on.



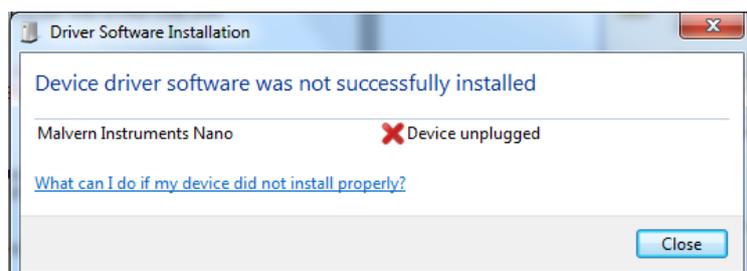
If you are connecting to a Zetasizer APS or Zetasizer  $\mu$ V, the name used to identify the hardware will be displayed as “Malvern Zetasizer” rather than “Malvern Instruments Nano”.

This should be left with the default selection of ‘Install the software automatically’ and the ‘Next’ button should be selected so that file transfer begins. Once file transfer has completed the ‘Finish’ button should be selected to complete the installation.

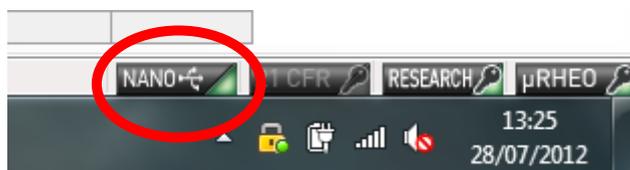
Windows will indicate that the new hardware is installed and ready to use. In Windows 7, when the Zetasizer Nano is installed, it is possible that the message ‘Device driver software was not successfully installed’ in the message in the bottom-right hand corner of the screen, as in the image below.



Alternatively, the following message may appear.



These messages can be safely ignored as long as, when the Zetasizer software is started, the 'Nano' icon is enabled as in the image below.



### 3.4. Zetasizer APS and Zetasizer $\mu$ V users

The New Hardware Wizard will appear a second time as these instruments require two drivers to be installed. Use the steps described above to install the second driver.

### 3.5. Running the software

When the software is started the first time, the following dialog box will appear. Click on the appropriate system to select it. This dialog will not appear the next time the software is started.



The instrument type can be changed at any point by selecting the menu item; 'Tools', 'Options', 'Instrument type'. Once the instrument type has been changed the software must be restarted for the change to take effect.

## 4. Uninstall procedure

The software can be uninstalled using the standard Add/Remove feature in the Windows 'Control panel'.

## 5. Additions

### 5.1. Support for the new DTS1070 disposable folded capillary cell

This version of the software support the new version of the folded capillary cell, DTS1070, which is the direct replacement for the previous

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DTS1060/DTS1060C/DTS1061 cells. The DTS1070 now becomes the default cell for all Zeta potential derived measurements.

## 6. Improvements

### 6.1. Flow Mode edit results facility

The flow mode edit result facility has been updated with the main purpose of making it easier to use. This has included adding the ability to turn off automatic data filtering and adding an additional export data feature specific to the Flow Mode result.

### 6.2. Zetasizer APS and Zetasizer $\mu$ V

The Zetasizer Software v7.02 includes software modifications to work with the latest firmware included with the Zetasizer APS and Zetasizer  $\mu$ V instruments.

### 6.3. Cell selection enhancements

The way in which cell selection is performed within the SOP Editor has been enhanced. Cells are now grouped by type (e.g. Glass cuvettes, Disposable Capillary cells etc.) rather than individually.

### 6.4. Saving data files to a USB drive (see also section 8.14)

A warning has now been incorporated into the software which indicates that due to the continually saving nature of the Measurement files, running the software directly onto a removable USB drive can result in loss of data if the drive is removed whilst the software is still being run.

### 6.5. Updated help files

The help files have been updated to provide information on the new software features.

## 7. Bug fixes

Numerous bug fixes have been implemented to improve software stability and quality. These include but are not limited to those in the table below:

“Save As” dialog in the report designer now defaults to the relevant language directory under the reports directory.
The Count Rate Meter for the Zetasizer APS and $\mu$ V displays correctly when set to 0 and 100%.
When editing a result to use a complex dispersant, the viscosity value is now calculated correctly.
The software has now been updated so that the modulator turns off when aborting a Zeta Potential measurement.
Fixed an issue that could cause a software error when measuring Molecular Weight on a $\mu$ V instrument.
Fixed issues where cells were selectable in the SOP Editor, which were not valid for the selected measurement type.

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## 8. Known Issues

### 8.1. Workspaces

A selection of new workspaces have been created for the new measurement types. A number of reports from other workspaces have also been updated.

However, due to the way the software is updated, these may not appear if a current Zetasizer user is having their software upgraded.

New workspaces can be imported by selecting the 'import workspace' option in the workspace selection menu.

Workspaces are stored in the following directory:

C:\Users\[username]\Documents\Malvern Instruments\Zetasizer\Export Data

To simply update all workspaces in the Zetasizer software, navigate to the folder:

C:\Users\[username]\Documents\Malvern Instruments\Zetasizer

and delete all "EN-US File" file types.

### 8.2. PCs with single core CPUs may lock up when connected to an APS or $\mu$ V

Some PCs, running the Zetasizer software, may lock-up or freeze when connected to an APS or  $\mu$ V. The APS and  $\mu$ V both require a PC with at least two cores or alternatively, a CPU that is Hyper-threading (HT) enabled. Therefore, it is advisable to run the software on a PC that meets the recommended specification detailed earlier in this document if the PC is to be connected to either a Zetasizer APS or Zetasizer  $\mu$ V. The Zetasizer Nano is not affected by this issue.

### 8.3. USB detection

USB detection occurs automatically on new computers. On older computers the instrument is not always detected automatically and the instrument icon in the bottom right-hand corner of the status bar will remain greyed-out. This is fixed by closing the application, restarting the computer and restarting the software.

### 8.4. Missing parameters in user reports

The parameter dictionary has been updated in version 7 of the software and some of the parameters have changed. For reports that the user may have created containing the affected parameters, the parameters will become undefined. This can be seen when a report is opened and the parameter displays the text 'No parameter has been selected' or if the nothing is shown next to the text label (i.e. the value appears blank). To fix this problem for each parameter carry out the following steps:-

- 1) Double-click on the affected parameter to bring up its property dialogue.
- 2) Click the 'Select' button to display the 'Select a parameter' dialogue.
- 3) Select the relevant parameter.

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**N.B.** Remember to correct the affected parameters on both the screen and page layout views

### 8.5. Results

The analysis algorithms for the calculation of size, zeta potential and molecular weight, including data filtering, are being continually improved. The effect of this is that if data taken from a previous version of software is edited, the result may change, even if only the sample name is edited. This is because the algorithms themselves are not stored with the record. This does not apply to parameters stored with the record such as the viscosity, and refractive index etc. as the same parameters are always used in the recalculation of the edited result.

This does not of course change the result of the stored record, as after editing a new record is created. To tell if a record is the original or has been edited, the parameter 'Is edited' can be added to a report or the record view. This can be found in the measurement audit information section of the parameters list. It will display 'False' if the record has not been edited.

### 8.6. SOP sample settings can be lost on software upgrade

The SOP sample settings will be copied to a backup location during the installation process. To maintain these settings with the new installation, the following process should be followed:

Once the files have been backed up and the new software installed, to incorporate these settings, the relevant files need to be manually copied by the user to the correct location to replace the installed files.

To do this the following steps need to be followed:

1. Ensure that you are logged onto the computer as an administrative user
2. Run the Zetasizer software once then close it down so there are no copies of it running.
3. Use Windows Explorer to copy the files:

SampleProperties.cfg  
CompoundProperties.cfg  
IonicSpecies.cfg

to the relevant location. The locations of the files depend on the operating system:

#### Windows XP

Copy from C:\Documents and Settings\All Users\Application Data\Malvern Instruments\Zetasizer<date/time of install> to overwrite files in C:\Documents and Settings\All Users\Application Data\Malvern Instruments\Zetasizer

#### Windows 7

Copy from C:\ProgramData\Malvern Instruments\Zetasizer<date/time of install> to overwrite files in C:\ProgramData\Malvern Instruments\Zetasizer

N.B. The Application Data folder is a hidden folder. To view it on Windows XP you need to access the Control Panel then select Folder options->View and then enable the option to Show hidden files and folders.

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N.B. The ProgramData folder is a hidden folder. To view it on Windows 7 you need to access the Control Panel then select Appearance and Personalization->Folder Options->Show Hidden files and folders and then enable the option to Show hidden files, folders and drives.

N.B. If the installation process is terminated prematurely, the backup from the last installation is maintained in the following directory:

Windows XP - C:\Documents and Settings\All Users\Application Data\Malvern Instruments\Zetasizer\_BACKUP

Windows 7 - C:\ProgramData\Malvern Instruments\Zetasizer\_BACKUP

### **8.7. Zetasizer APS and Zetasizer $\mu$ V driver issues (Does not affect Zetasizer Nano series)**

#### **Version 6.30 to Version 6.34**

The drivers included with the software for the 6.3x releases for the Zetasizer APS and Zetasizer  $\mu$ V are incompatible with some of the earliest instruments. This is expected to affect only Zetasizer  $\mu$ V. This issue manifests as an inability to connect to the instrument. These issues will be handled on a case by case basis and if identified, should be referred to Product Management via the Helpdesk.

#### **Version 6.34 to Version 7.01 (Windows XP only)**

Version 6.34 of the Zetasizer software updated the USB driver for the Zetasizer APS and Zetasizer  $\mu$ V instruments to version 20.2.0.5. However it has been noticed that this new driver is not fully compatible with Windows XP. Shutting down the computer with the instrument on and connected will result in it restarting instead. The solution to this problem is to turn off or disconnect the instrument before shutting down the computer.

#### **Version 7.02 and beyond (Windows XP only)**

Version 7.02 of the Zetasizer software updated the firmware for the latest Zetasizer APS and  $\mu$ V instruments. However, there is an issue reconnecting to these instruments after a disconnection with the Windows XP operating system. If the instrument is unplugged from the PC whilst the software is running then when the USB cable is plugged back into the same port, the software will fail to reconnect. The solution to this problem is to plug the USB cable into a different port, this should then allow the software to detect the instrument and connect successfully.

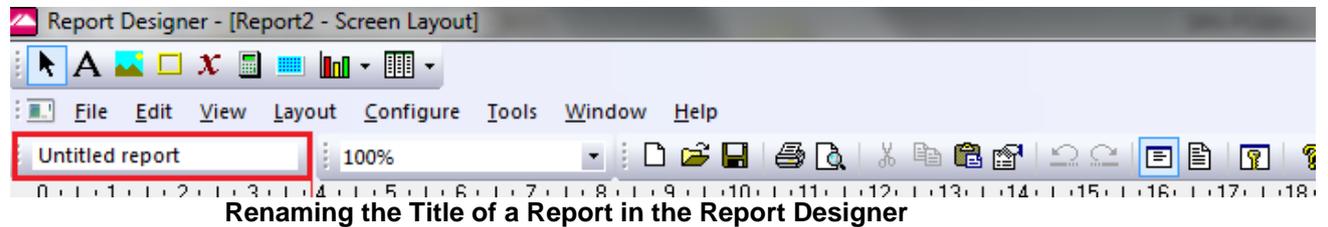
### **8.8. PC entering sleep mode can disconnect the Zetasizer**

If the PC should enter sleep mode while the Zetasizer is connected and running, the connection will be lost and the measurement fail. It is recommended to disable the sleep function while the Zetasizer is being used.

### **8.9. Creating and editing results in the Report Designer**

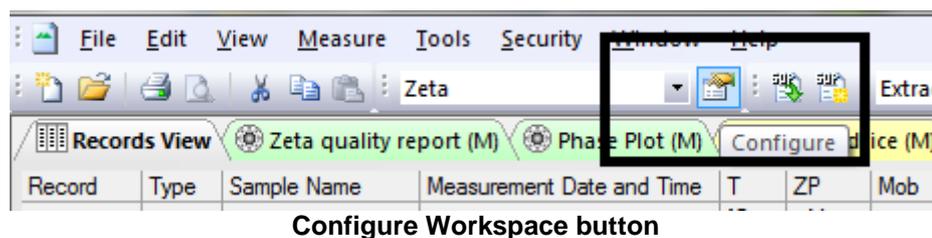
Version 6.21 of the Zetasizer software updated the way in which reports were generated. The following procedure should now be followed whenever creating a new report:

If creating a new report or editing an existing report, the report title must be changed and ideally should also be unique, as it is this title, not the filename, which is displayed inside the workspace editor. To change the report title, edit the field in the report designer as shown in the following screenshot.

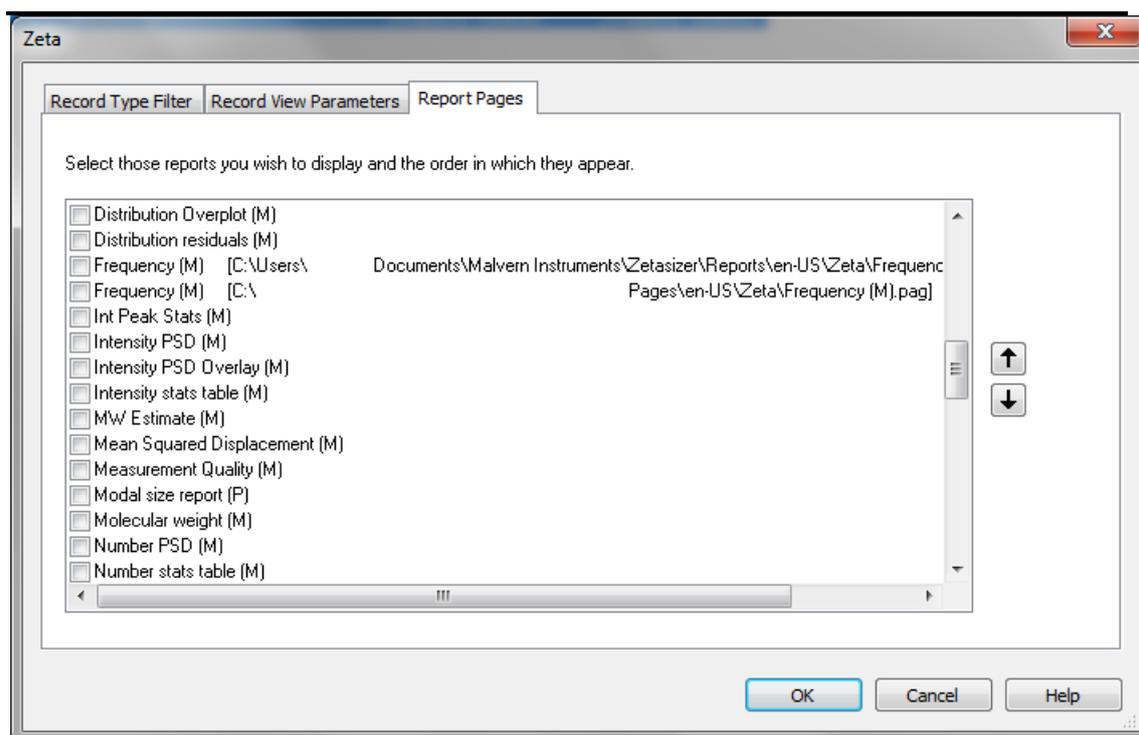


Once the report has been finished, in order for the software to load it, it needs to be saved into the Reports directory under the relevant language, i.e. it needs to be saved in the "Documents\Malvern Instruments\Zetasizer\Reports\en-US" or "Documents\Malvern Instruments\Zetasizer\Reports\ja-JP" directory depending on the language selected.

Once steps 1 and 2 are preformed then the new\updated report will be visible in the workspace editor inside the main Zetasizer software. Simply press the configure workspace button on the main toolbar and then go to the "Report Pages" tab.

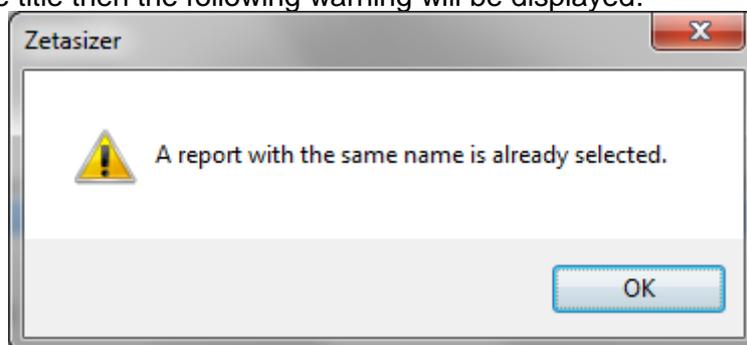


If there are any reports with duplicate titles visible to the software then they will be listed in the Report Pages tab with their file location (see the following image).



**Duplicate Reports in the Workspace Editor**

Only one duplicate report can be shown in the workspace at a time, if it is desirable to have both reports visible in the workspace then the title of one of the reports should be altered as outlined in step 1. If the user tries to select more than one report with the same title then the following warning will be displayed:



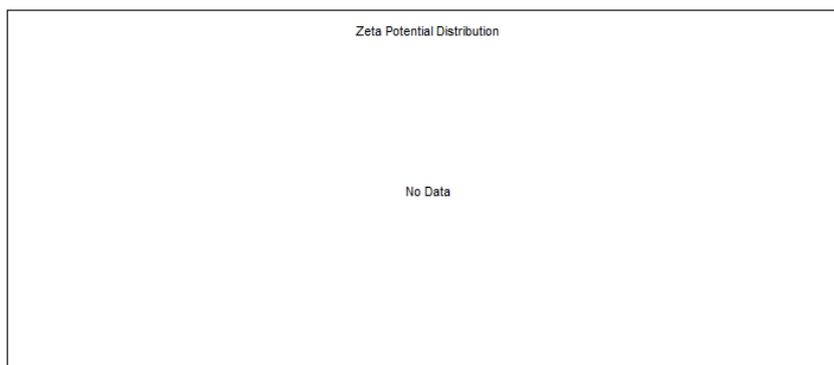
**Duplicate Report Warning**

### 8.10. Viewing monomodal Zeta records in the Report view

When viewing zeta records created with the monomodal data processing analysis model, in a report, "No Data" will be displayed in any Zeta Potential specific charts. The charts should say "Monomodal Measurement" as there is data available. See example below.

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Result quality: **Good**



**Example of a monomodal record being displayed in a Zeta Potential Distribution chart**

### **8.11. Aborting measurements when lid is opened**

If, during a measurement, the lid is opened, all of the safety cut offs will work as expected, but the measurement will continue to completion rather than aborting.

### **8.12. Enabling Feature keys when switching instruments**

Occasionally, it has been observed that feature keys can be disabled after detaching one instrument and then attaching a different instrument. This problem can be resolved by restarting the Zetasizer software.

### **8.13. 21CFR audit trail update and link to Windows login**

The 21CFR audit trail does not update if the Windows user is changed from the original user that installed the 21-CFR key. This is the case in both Windows 7 and Windows XP. The workaround is that users must log on to the PC using the account which installed the software and then log into the Zetasizer software using their own personal login.

### **8.14. Saving data to non-local fixed drives**

It should be noted that the software does not support saving directly onto non-local drives unless the drive can be guaranteed to be 100% available. This is because the software is continually reading and writing to the active measurement file and if the connection to the drive is lost then the file can become corrupted and measurement data lost.

It is suggested that users interact with a local file and then save this file to a network location once the session has been completed.

### **8.15. High Temperature dispersant on standard instrument**

It is possible to create a High Temperature dispersant (temperature above 92 degrees), for use on the High Temperature model of the Zetasizer Nano, which can then be selected for use on the standard model. When the measurement is run, if the

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temperature is outside the range for the current model, a message will be printed in the log and the measurement will be performed at 25 degrees.

## 9. Customer deliverables

### 9.1. Application software suite

The software is contained on one CD-ROM. The disk is labelled PSS0012/33

#### 9.1.1. Disk contents

- Operating software
- Zetasizer User manual
- MPT-2 manual
- USB drivers
- Software Update Notification (SUN) with changes from previous software version
- Adobe Acrobat Reader