RELEASE NOTES

VibroSight ® software
version 2.9.7

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REVISION RECORD SHEET

SW version / RN edition	Date of issue	Written and modified by	Description	Signature
2.9.7 / 1	1 July 2013	P. Ward	This document corresponds to VibroSight version 2.9.7.	PW

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Technical content approved by	Engineering	J. Theraulaz	1 July 2013	JT
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Document released by	Technical Publications	P. Ward	1 July 2013	PW

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PREFACE

About these release notes

This document provides important information about the VibroSight ® software from Meggitt Sensing Systems. It is applicable to all VibroSight-based condition monitoring and machinery protection systems using the versions of software described by this document, namely:

VibroSight software version 2.9.7 (CD part number 609-004-000-017).

This document contains information about changes to the software since the previously released version (VibroSight 2.9.6), such as new features and improvements, solved problems and bug fixes, and hardware and software compatibility.

For more general information on the actual software, or the entire condition monitoring system (CMS), refer to the following Meggitt Sensing Systems (MSS) documentation:

VibroSight software data sheet (MSS document ref. 660-020-005-210A)

Getting started with VibroSight installation guide (MSS document ref. 660-010-006-215A)

VibroSight help

VibroSight application notes and technical notes.

Users who are familiar with previous versions of VibroSight may also find it useful to refer to the respective release notes included in their installation.

Structure of the release notes

This document presents information in the following order: general items first, then in terms of the software modules that constitute VibroSight, such as Configurator, Server, Vision and so on.

You should read those sections that are most relevant to you and then keep the document for future reference.

Version identifiers

A complete VibroSight software product version number has four components x.x.x build x (or x.x.x.x) that provide the following information:

- Major release identifier: **x**.x.x build x (or **x**.x.x.x)
- Minor release identifier: x.**x**.x build x (or x.**x**.x.x)
- Update identifier: x.x.**x** build x (or x.x.**x**.x)
- Build identifier: x.x.x build **x** (or x.x.x.**x**).

The version identifiers for installed software appear in the Help About box (obtained using **Help > About …** in any VibroSight software module).

Terminology

To distinguish between the different Meggitt Sensing System products that can be used with the VibroSight software, the following terminology is used in this document:

- VM600 card – to refer to the VibroSight-software compatible cards that are installed in a VM600 rack. The currently available VM600 card pairs that are designed for operation with the VibroSight software are the XMC16 / XIO16T, XMV16 / XIO16T and XMVS16 / XIO16T.

  Where VM600 card is used in this document, it refers to XMC16 / XIO16T, XMV16 / XIO16T and XMVS16 / XIO16T cards, unless otherwise stated.

- VibroSmart DMS module or VibroSmart DMS device – to refer to VibroSight-software compatible modules or devices that are used in a distributed monitoring system. The currently available VibroSmart DMS modules and devices that are designed for operation with the VibroSight software are the VSI010, VSN010 and VSV300.

  Where VibroSmart DMS module is used in this document, it refers to VSI010 and VSV300 modules, unless otherwise stated.

  Where VibroSmart DMS device is used in this document, it refers to the VSN010 device, unless otherwise stated.

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1. Licensing

In general, the licence key required to enable purchased product options remains unchanged for updates between patch level releases (for example, from version 2.9.6 to version 2.9.7).

However, a new licence key is required for upgrades between major and minor version releases (for example, from version 2.8.x to version 2.9.7).

To obtain a new VibroSight licence key file or for further information on licence keys, contact Meggitt Sensing Systems customer support. See section 7.

2. New features

General

2.1. VibroSight databases no longer require a data source name (DSN)

Starting with VibroSight 2.9.7, in order to make the software easier to use, a VibroSight database no longer requires a data source name (DSN).

A DSN is a data structure used in computing to describe a connection to a database. It has a logical name and typically contains the following information about a specific database: database name and location (directory), name of the driver used to access the database and the user id and password required to access the database (if required). The DSN's logical name is used by open database connectivity (ODBC) software to refer to and connect to a database.

For backwards compatibility, VibroSight 2.9.7 can continue to operate with DSNs if that is the users preferred way of working. However, deprecating VibroSight's requirement for DSNs has several advantages, notably:

- DSN-free operation makes it easier to use VibroSight databases on different computers, that is, just copy the database file and the database configuration file to a computer and double-click one of them to start a VibroSight Server using the database.
- DSN-free operation avoids problems concerning access rights to the Windows Registry (where DSNs are stored), for example, due to different user account control settings and privilege levels on Windows computers.

For these reasons, DSN-free operation is now the recommended way of working with VibroSight and a DSN is no longer created by the following operations, by default:

- Saving a configuration as a VibroSight server/database.
- Copying a VibroSight database using the database copy command (VibroSight System Manager or command-line).

Subsequent work with a VibroSight database generated in one of these ways will therefore be DSN-free, by default.

To accompany this change to DSN-free operation, the following file name extensions have changed in VibroSight 2.9.7:

- `.vssrvcfg` is the new file name extension used by VibroSight database configuration files (replacing `config`).
- `.vssrvdb` is the new file name extension used by VibroSight database files (replacing `.db`).

2.1.1. Updating an existing VibroSight project for operation without a DSN

To update an existing VibroSight project for operation with VibroSight 2.9.7 without a DSN, the following procedure should be followed:

1. Use a Windows Explorer to change the file name extension of the VibroSight database configuration file from `*.config` to `*.vssrvcfg` and to change the file name extension of the VibroSight database file from `*.db` to `*.vssrvdb`.

   If VibroSight 2.9.7 is installed on the computer, Windows Explorer file association will automatically associate these new file types with VibroSight Server.

2. Use a text editor program to open the VibroSight Server database configuration file (`*.vssrvcfg`), search for `DataSource` (the database source name) and replace the existing name with the name of the VibroSight Server database file (`*.vssrvdb`).

   The full file name including the filename extension must be included within the double quotation marks for `DataSource`.

3. Optionally (to keep the computer clean), the ODBC Data Source Administrator (32-bit) can be used to delete (Remove) the System DSN for the database from the computer.

The VibroSight database can then be used as normal. For example, double-click the VibroSight Server database configuration file or database configuration file in a Windows Explorer to start a VibroSight Server using the database.

2.1.2. Updating an existing VibroSight project for operation with a DSN

To update an existing VibroSight project for continued operation with VibroSight 2.9.7 with a DSN, the following procedure should be followed:

1. Use a Windows Explorer to change the file name extension of the VibroSight database configuration file from `*.config` to `*.vssrvcfg` and to change the file name extension of the VibroSight database file from `*.db` to `*.vssrvdb`.

   If VibroSight 2.9.7 is installed on the computer, Windows Explorer file association will automatically associate these new file types with VibroSight Server.

2. Use the ODBC Data Source Administrator (32-bit) to edit (Configure) the System DSN to use the new `*.vssrvdb` file name extension (that is, the Database file field on the Database tab).

The VibroSight database can then be used as normal. For example, double-click the VibroSight Server database configuration file or database configuration file in a Windows Explorer to start a VibroSight Server using the database.

2.1.3. Other implications

If the VibroSight Host Service is being used to run a VibroSight Server as a Windows service, then in VibroSight System Manager, the existing VibroSight Server as a Windows service should be deleted using VibroSight Server Unregister and a new VibroSight Server as a Windows service should be created using VibroSight Server Register using the new file name extensions: `*.vssrvcfg` and `*.vssrvdb`. This is necessary because any existing VibroSight Server as a Windows service would have been created using the old file name extensions `*.config` and `*.db`.

In addition, the data management of VibroSight applications could also be affected, for example, as script files used to manage databases (copy, purge, etc.) would have been created using the old file name extensions.

NOTE: DSNs can be used to help restrict access to a VibroSight database using the User ID and Password fields on the Login tab of the System DSN, configurable using the ODBC Data Source Administrator (32-bit).

With DSN-free operation, this functionality can be replicated in the VibroSight Server database configuration file (manual editing required – contact Meggitt Sensing Systems or more information), which is one reason why users could prefer to continue working with DSNs.

2.2. Default initial settings for new unit sets

When a new unit set is created (**Tools > Unit Preferences**, then **Manage Unit Sets**, then **New**), either metric units or imperial units can be selected as the initial default settings for the unit set.

2.3. Communications through a firewall

In VibroSight systems using a firewall, that is, where Windows Firewall is turned on:

- If VibroSight Server (default TCP port: 55000) is configured to be allowed through the firewall, then all VibroSight client applications are able to communicate with a VibroSight Server.
- If VibroSight Host Service (default TCP port: 50000) is configured to be allowed through the firewall, then VibroSight System Manager is able to communicate with a VibroSight Host Service.

Previously, in systems using a firewall, it was also necessary for incoming Internet Control Message Protocol (ICMP) echo requests to be allowed through the firewall but the use of ICMP has now been replaced entirely by TCP.

2.4. Updated VibroSight database script files

The VibroSight database script files (a collection of Windows batch files) introduced in VibroSight 2.9.6 in order to enable the quick analysis of VibroSight databases have been updated as follows:

- The old scripts no longer work as the `-c` command-line option of VibroSight server is no longer supported.
- A new script was added that unassociates the VibroSight database scripts form the database files (*.db) on a computer if the script is not being used.

VibroSight System Manager

2.5. VM600 card identification by front panel LEDs

A new **Locate (front panel LEDs)** command has been added under Maintenance in the Actions window for the card selected in the System Explorer window, which allows VM600 cards to be identified in a rack from System Manager.

Like the existing **Front Panel LED** button found on the card parameters node in VibroSight Configurator, the **Locate (front panel LEDs)** command causes the STATUS and DATA LEDs on the front panel of the card to blink orange, allowing the card to be more easily located and identified. (After approximately 15 seconds, the blinking stops and the LEDs indicate the operational status of the card.)

2.6. Database copy selectively by data type

When copying a database using the Copy tool in the Database group box or from the command-line, it is now possible to further refine the data selected to be copied based on the type of data (data type).

When using the Copy tool in the Database group box, the Selection Options window of the database copy wizard includes check boxes that allow specific types of data to be individually selected (included) or cleared (excluded): Variables, Spectra, Waveforms, Orbits, Alarms and Events, System Data. By default, all types of data are selected (included).

When using the command-line, the `-datatype` option allows either all or a combination of specific types of data to be included. For more information on this option, refer to the *VibroSight* help or type `vibrosightdatacopy -help` at a Windows command prompt, in the `VibroSight 2 Bin` folder: `C:\Program Files\Meggitt\VibroSight 2\Bin>vibrosightdatacopy -help`.

2.7. Database copy selectively by hierarchy

When copying a database using the Copy tool in the Database group box or from the command-line, it is now possible to further refine the data selected to be copied based on the hierarchy in the Hardware view or the Machinery view.

When using the Copy tool in the Database group box, the Selection Options window of the database copy wizard includes option buttons and a configurable Hardware/Machinery view that allows specific

nodes to be individually selected (included) or cleared. By default, all data in the hierarchy is selected (included).

When using the command-line, the `-hierarchy` option allows either all or a combination of specific types of data to be included. For more information on this option, refer to the *VibroSight* help or type `vibrosightdatacopy -help` at a Windows command prompt, in the `VibroSight 2 Bin` folder: `C:\Program Files\Meggitt\VibroSight 2\Bin>vibrosightdatacopy -help`.

2.8. Optional compression when backing up or copying a VibroSight database

When a VibroSight database is backed up or copied using the appropriate database command in VibroSight System Manager or the command-line equivalent, an option to automatically compress the generated (destination) files is now available.

The zip archive file format is used by default (`-zip`), but other archive file formats can be used by specifying an external data compression / file archiving software tool (`-c`).

VibroSight Configurator

2.9. Improved consistency checks for VibroSmart VSV300 modules

For VSV300 modules, the following improvements have been made to the consistency check tool:

- For input channels, the Sensor OK Check is restricted to:
    - a minimum step size of 100 mV when the signal transmission mode is voltage
    - a minimum step size of 0.5 mA when the signal transmission mode is current.
- For asynchronous absolute bearing (AAB) vibration processing blocks, the ratio of the low-pass filter to the high-pass filter (LP/HP ratio) is restricted to:
    - 1000 (for example, 3000 Hz and 3 Hz) for measurements using one integration, that is, a velocity output based on an accelerometer input
    - 100 (for example, 300 Hz and 3 Hz) for measurements using two integrations, that is, a displacement output based an accelerometer input.

VibroSight Server

2.10. Performance improvement due to amplitude only spectra

In order to improve the performance of VibroSight Server specifically (and therefore a VibroSight-based system in general), the amount of data traffic required to be handled has been significantly reduced by allowing VM600 cards to provide spectra with either:

- an amplitude spectrum only (without any phase information)
- or a complete spectrum (with both amplitude and phase information).

NOTE:	Complete spectra are still generated and processed internally by VM600 cards where required for calculations and the generation of measurements such as vectors. However, by default, all dynamic processing block spectra – for both Principle Mode and Auxiliary Mode – transferred between VM600 cards and a VibroSight Server are now amplitude only in order to reduce the data traffic.

In VibroSight Configurator, the Spectra and Waveforms parameters node (under each dynamic processing block) has an **Include Phase** check box, that has been added under Spectrum of the Principle Mode and Auxiliary Mode tabs, under Waveform and Spectrum Processing, that can be selected in order to provide a complete spectrum.

NOTE:	Enabling complete spectra by selecting **Include Phase** will increase the rate of growth and the size of a VibroSight database.

Previously, VM600 cards generated and sent a complete spectrum (with both amplitude and phase information).to VibroSight for all configured spectra, even if the phase spectrum was not being used and was subsequently ignored by VibroSight.

2.11. New features and stabilisation related to pre-trigger and post-trigger data logging

New features and general stability improvements related to the pre-trigger and post-trigger data logging of data by a VibroSight Server (for example, triggered by a time-based data logging rule with Pre Logging selected).

For example, post-trigger data logging is now supported (previously, it was pre-trigger only), dynamic data (waveforms and spectra) can now be included, VibroSight Server no longer asks VM600 cards for overlapping data if it has previously obtained some of the data from an earlier event, and the writing of data to the VibroSight database has been optimised for robustness, scalability and speed.

NOTE:	Enabling complete spectra by selecting **Include Phase** will also increase the rate of growth and the size of a VibroSight database due to pre-trigger and post-trigger data logging.

VibroSight Event Viewer

2.12. Opening an existing VibroSight Event Viewer project

Double-clicking an existing VibroSight Event Viewer project file (`*.vsevtvi`) will start an instance of VibroSight Event Viewer and automatically open the Event Viewer project.

2.13. VibroSight Event Viewer notifications

VibroSight Event Viewer now provides a pop-up message for each new event in the Windows notification area (bottom right of the Windows Taskbar) in order to reduce the probability of a user missing an important VibroSight system event.

When exiting (closing) VibroSight Event Viewer, a dialog box is presented that allows VibroSight Event Viewer to be minimized to the Windows notification area (rather than exited) which allows the pop-up messages on events to continue to be displayed.

The duration of the pop-up can be configured using the VibroSight Event Viewer's user preferences (**Tools > Options**, under Interface options). While clicking on a pop-up in the notification area will jump to (display) the main VibroSight Event Viewer window.

3. Solved problems and bug fixes

General

3.1. Stabilisation and bug fixes related to device discovery

General stability improvements and multiple bug fixes related to the new proprietary implementation of the zeroconf protocols that is used for device discovery.

3.2. Improved tacho measurements

The filtering implemented on the VM600 XMx16 card firmware has been improved in order to reduce the occurrence of the sporadic speed spikes that have been reported on tacho measurements in rare situations. See also section 4.5.

VibroSight System Manager

3.3. Problem copying a VibroSight database using an automated copy job due to registry access errors

When copying a VibroSight database using an automated copy job process that calls VibroSight database commands such as database copy (VibroSightDataCopy.exe), the database copy operation could fail at the “create destination database and DSN step”. For example:

```
12:00:07 AM   Operation: Create Destination Database and DSN: In progress

Error encountered during step: Create Destination Database and DSN.

Access to the registry key
'HKEY_LOCAL_MACHINE\Software\ODBC\ODBC.INI\CopyU1R1_20130225000000' is
denied.
```

The operation of the VibroSight software is correct and this problem is being seen due to issues with the underlying Windows operating system access rights on the computer. For the example above, the user account executing the DSN creation operation did not have the appropriate access rights to create the required registry key.

However, such problems are now eliminated as VibroSight 2.9.7 has removed the requirement for a DSN for VibroSight databases. See section 2.1.

3.4. Problems manually refreshing the Devices view in the System Explorer

When using the Refresh button on the toolbar at the top of the Devices view in order to manually refresh the view of VibroSight-compatible devices available on the network, the Devices view could sometimes display a one-row “gap” in the view (list). After which, if the view was refreshed again, the Devices view displayed a white background with a red square with a diagonal red cross, requiring that System Manager is exited and restarted to recover. This bug has been corrected.

VibroSight Configurator

3.5. Bug fixes related to math processing block inputs

Multiple bug fixes related to the addition and editing of math processing block inputs, with improvements to the associated dialog boxes and data entry fields.

3.6. VibroSight OPC client unable to see available OPC servers

VibroSight OPC clients were unable to automatically discover the available OPC servers on certain computers. This problem was traced to OpcEnum.exe (the OPC Server Enumerator program that is required for OPC communications) not being available on the computers concerned.

As part of the installation process, the VibroSight installation wizard now automatically checks to see if the “OPC Core Components Redistributable (x86)” and “OpcEnum.exe”are available on the computer. If these items have not previously been installed and they are required by the VibroSight installation’s application, then the VibroSight installation wizard can be used to install them. Also included other minor bug fixes, so this problem has now been corrected.

3.7. Some fields not available to be edited

Under certain circumstances, some fields remain unavailable (greyed out) when they should be available, with the result that the parameters concerned cannot be edited. This problem was typically seen when using copy and paste operations to edit a configuration in the Hardware view. This bug has now been corrected.

VibroSight Vision

3.8. Mimic timestamp displays in 12-hour clock only

The timestamp Mimic control object used to display the time of the most recently received value in a Mimic document was displayed time in the 12-hour clock only.

This bug has been corrected such that the timestamp is now displayed in the 12-hour clock or the 24-hour clock, following the format of the underlying Windows time settings. For example, on Windows 7 operating systems, refer to the Date and time formats in the Region and Language settings (under Control Panel).

3.9. Problems with Mimic control object links

There were problems with the target links of Mimic control objects (to external objects or project documents) used for Mimic navigation, such as the link reverting to the VibroSight Vision Launch Pad and not allowing itself to be changed subsequently, or the link not being saved and being unavailable when the VibroSight Vision project was subsequently reopened. This bug has been corrected.

3.10. Mimic value indicators not being displayed correctly

Under certain circumstances, value indicators were not being displayed correctly in Mimics. As an example, the colour of the severity level associated with an alarm was not displayed correctly in the bar of the bar graph (always red instead of green) for OVR variables. And the colour of the severity level associated with an alarm was sometimes not displayed correctly in the bar of the bar graph for 1X and 2X variables, depending on the previous setting of the variable selector object.

In addition, for certain variables the value indicators themselves were sometimes not drawn correctly (badly scaled) so that the bar of the bar graph and any associated text value were difficult to read.

All of these bugs have been corrected.

VibroSight Event Viewer

3.11. Incorrect timestamps for user-generated events

When an existing event is selected and a user-generated event is created with the Time of Selected Event selected as the Date and Time, the user-generated event was created with an incorrect timestamp. That is, the timestamp for the user-generated event was actually offset by −2 hours from the existing selected event. This bug has been corrected.

3.12. Problems specifying data entities for an Event Filter

For the Entities Selection of an Event Filter, it was not easy to specify the required data entities because of the functionality of the Select All and Unselect All toolbar buttons. For example, if all the siblings of the current node were selected, selecting the current node with Select All resulted in the parent node being selected, and if all the siblings of the current node were deselected, deselecting the current node with the Deselect All toolbar button deselected the parent node. Also, after changing the state of the current node with either the Select All or Unselect All toolbar button, some of the parent node's children were selected and some were not, while others were neither selected nor deselected (that is, shown as grey). These bugs have been corrected.

3.13. Misleading field name in Event Filter

For the Criteria Selection of an Event Filter, when Live data was specified under Time Range, the text string "Update Rate" was displayed in error for the data field that actually specifies the duration of the live data buffer ("Buffer Duration"). This bug has been corrected.

4. Known issues

4.1. VibroSight Server and Host Service restart required after changes to network adapter

If the configuration of a network adapter is changed (for example, enabled or disabled, connected or disconnected) on a computer running VibroSight, then the VibroSight Servers and Host Services running on the computer must be restarted in order for the network adapter to be recognized by the VibroSight discovery mechanism.

4.2. Length limitation of VibroSight Server instance names

Since VibroSight 2.9.6, VibroSight Server instance names are limited to 18 characters, whereas up to 27 characters were allowed in previous versions. This constraint is enforced during the creation of new server instances with VibroSight 2.9.6 or later.

However, existing server instances may be non-compliant (too long) and no longer run after an upgrade of the VibroSight software. In such cases, the server instance name should be manually edited in the VibroSight database configuration file (`*.config` or `*.vssrvcfg`) to be 18 characters or less. Changes may also be required in any VibroSight software that references the server instance name, for example, associated VibroSight Vision Projects.

For automated database copies that append a timestamp (_yyyyMMddHHmmss) to the Server instance name, the number of characters that remain available for VibroSight Server instance names is deduced to 3. Alternatively, the server instance name can be shorted after the database copy is complete.

4.3. VibroSight client connections to local and remote VibroSight Servers are mutually exclusive

When a VibroSight Server is running on a (local) computer, a VibroSight client, such as VibroSight Configurator or VibroSight Vision running on the same (local) computer cannot connect to a VibroSight Server running on a different (remote) computer.

4.4. VibroSight Servers listen to a single IP address

VibroSight Servers use one specific IP address for connections to VibroSight clients. This IP address can be set to any of the available LAN adapters or logical addresses on the host computer, such that all traffic is directed through this address. However, this prevents concurrent connections from VibroSight clients running on other computers through different IP addresses.

4.5. Sporadic speed spikes on tacho measurements from VM600 cards

In rare situations, sporadic spikes can occur on tacho measurements from XMC16 / XIO16T, XMV16 / XIO16T and XMVS16 / XIO16T card pairs, yielding individual readings of non-plausible high values. In addition, when an affected tacho measurement is used as the speed reference by processing blocks using order-tracking this may lead to short glitches of non-valid data on dynamic

data, although this is flagged by the data quality indication. However, the spikes may influence plot scaling in VibroSight Vision. See also section 3.2.

4.6. Gaps in logged Modbus data

When data logging with pre-trigger is used (for example, a time-based data logging rule with Pre Logging selected) or database operations such as a database copy or a database purge command occur at the same time as standard data logging, gaps can appear in the Modbus data that has been logged at a standard rate.

These gaps in Modbus data are related to the computation of alarms when data is written to the database, which can be slow and can prevent some subsequent Modbus data from being handled correctly, especially when VibroSight Server is busy with other data intensive tasks.

5. Compatibility

NOTE: Refer also to the latest version of the *Getting started with VibroSight* installation guide or the *VibroSight software* data sheet for further information on VibroSight's prerequisites and compatibility.

As part of the VibroSight software installation process, the installation wizard will automatically check to see if the "Microsoft Visual C++ Redistributable Package" (see section 5.1.5) and the "OPC Core Components Redistributable (x86)" (see section 5.1.6) are available on the computer.
If these items have not previously been installed and they are required by the VibroSight installation's application, then the VibroSight installation wizard can be used to install them.

5.1. VibroSight software

VibroSight 2.9.7 is a minor version release in the 2.x.x series and replaces VibroSight 2.9.6.

Compatibility with existing databases is achieved using the database **Update** tool (from VibroSight System Manager's **Database** tools) which supports the continued used of configurations and data from previous versions. See section 6.1.1.

5.1.1. Microsoft Windows operating systems

VibroSight 2.9.7 is compatible with 32-bit versions and 64-bit versions of Microsoft ® Windows ® operating systems.

NOTE: Since VibroSight 2.9.0, VibroSight can run on 64-bit versions of Windows in order to help eliminate memory and performance issues that can occur due to the limitations of the 32-bit memory space.

However, VibroSight 2.9.7 is 32-bit software that runs on x64 Windows in the same manner as it does on 32-bit windows, that is, VibroSight is "x64-compatible" software (not "native x64" software).

See the appendix of this document for detailed information on VibroSight software and Windows operating system compatibility.

5.1.2. Microsoft .NET Framework

For most Windows operating systems, VibroSight 2.9.7 requires that the Microsoft .NET Framework 4.5 is installed on the computer.

NOTE:	Microsoft .NET Framework 4.5 is required since VibroSight 2.9.4. Microsoft .NET Framework 4 (Standalone Installer) is required for VibroSight 2.9.2 and 2.9.3. Microsoft .NET Framework 3.5 SP1 is required for VibroSight 2.9.1 or earlier.

See the appendix of this document for detailed information on VibroSight software's Microsoft .NET Framework requirements.

5.1.3. Apple Bonjour

Since VibroSight 2.9.6, Apple ® Bonjour is no longer required, as a proprietary implementation of the zero configuration networking (zeroconf) protocols is now used for all required networking operations: VibroSight hardware (VM600 cards and VibroSmart DMS modules and devices) and software module discovery, VibroSight Server to hardware communications and inter-module communications.

5.1.4. Sybase SQL Anywhere 11 software

VibroSight uses the Sybase ® SQL Anywhere 11 database software in its standard configuration. VibroSight 2.9.7 remains compatible with the previously deployed version of SQL Anywhere, namely SQL Anywhere version 11.0.1.2044.

NOTE:	VibroSight requires the 32-bit version of SQL Anywhere 11 on both 32-bit and 64-bit Windows operating systems. It is strongly recommended that only the 32-bit version of SQL Anywhere 11 is installed on the computer running VibroSight.

NOTE:	Updating SQL Anywhere to version 11.0.1.2867 is **mandatory** in order to avoid potential memory issues (fixed by Sybase). A software update (patch) included on the Sybase CD must be run in order to update Sybase SQL Anywhere from version 11.0.1 to version 11.0.1.2867: *SA11_Full_Win32+x64.1101_2867_EBF.exe*. See section 6.2.

(If Sybase SQL Anywhere 11 is not updated to version 11.0.1.2867, VibroSight 2.9.7 will still run but a warning message will be displayed by the VibroSight Server.)

5.1.5. Microsoft Visual C++ Redistributable Package

If a VibroSight OPC Server is to be used, VibroSight 2.9.7 requires that the Microsoft Visual C++ Redistributable Package is installed on the computer, in order to install and register the Visual C++ libraries used by VibroSight OPC servers.

If required, this package can easily be installed as part of the VibroSight software installation process. Refer to the latest version of the *Getting started with VibroSight* installation guide for more information. Alternatively, it can be installed directly from the Prerequisites folder of the VibroSight CD. It is also available for free from the Microsoft website.

NOTE: The Microsoft Visual C++ Redistributable Package is required since VibroSight 2.9.4, if OPC servers are being used.

The 32-bit version of the package ("vcredist_x86.exe") must be installed on both 32-bit and 64-bit Windows operating systems, as the VibroSight OPC server is a 32-bit application.

5.1.6. OPC Foundation OPC Core Components Redistributable

If a VibroSight OPC Client or OPC Server is to be used, VibroSight 2.9.7 requires that the OPC Core Components Redistributable from the OPC Foundation is installed. The redistributable must be installed on OPC client computers in order to allow connections to remote OPC servers and it must be installed on OPC server computers in order to allow OPC clients to browse for running OPC servers.

If required, this redistributable can easily be installed as part of the VibroSight software installation process. Refer to the latest version of the *Getting started with VibroSight* installation guide for more information. Alternatively, it can be installed directly from the Prerequisites folder of the VibroSight CD. It is also available for free from the OPC Foundation website.

NOTE: The OPC Core Components Redistributable is required since VibroSight 2.9.4, if OPC clients or OPC servers are being used.

The 32-bit version of the package ("OPC Core Components Redistributable (x86)") must be installed on 32-bit Windows operating systems and the 64-bit version of the package ("OPC Core Components Redistributable (x64)") must be installed on 64-bit Windows operating systems.

5.2. VM600 cards

5.2.1. Firmware

There are firmware updates for some VM600 cards corresponding to VibroSight 2.9.7.

The latest firmware for the CPUR card remains:

- Applications: applications-640-012-001-003.tgz
- Base System: base-system-640-011-001-003.tgz.

The latest firmware for the XMC16, XMV16 and XMVS16 cards is now:

- Applications: applications-640-010-001-007.tgz
- Base System: base-system-640-003-001-008.tgz.

Therefore, for current versions of the XMC16, XMV16 and XMVS16 cards, firmware upgrades are required. See section 6.3.1.

Improvements to the latest firmware include allowing VM600 cards to provide spectra with either an amplitude spectrum only or a complete spectrum with both amplitude and phase information (see section 2.10) and improved filtering for more reliable and robust tacho measurements (see section 3.2).

5.3. VibroSmart DMS device

5.3.1. Firmware

There are no firmware updates for the VibroSmart DMS modules and devices corresponding to VibroSight 2.9.7.

The latest firmware for the VSI010 module remains:

- 642-002-001-002.xmsifw.

The latest firmware for the VSN010 device remains:

- 642-004-001-002.redboxfw.

The latest firmware for the VSV300 module remains:

- 642-001-001-003.xtranfw.

Therefore, for current versions of the VibroSmart DMS modules and devices, no firmware upgrades are required.

6. Upgrade procedure

This section describes the procedure for upgrading a VibroSight system from a previous version. Perform the steps in the given sequence in order to complete a system upgrade.

NOTE: It is strongly recommended to verify the version of firmware running in the related hardware (VM600 cards and VibroSmart DMS modules and devices) before starting a VibroSight system upgrade, in order to establish if any firmware updates are also required. See section 6.3.3.

6.1. Upgrading the VibroSight software

NOTE: Since VibroSight 2.9.6, VibroSight Server instance names are limited to 18 characters (previously, it was 27). So VibroSight installations with VibroSight Server instance names of more than 18 characters will experience problems with VibroSight 2.9.7 until the existing VibroSight Server instance names (and any references to them) are manually edited to be 18 characters or less. See section 4.2.

1. If it is not necessary for the VibroSight-based system to remain operational during the upgrade procedure, back up any important (required) VibroSight databases in the following way:
   - Exit all VibroSight software modules (clients and servers) – no VibroSight software modules, such as Vision, Configurator or Server, should be running.
   - Copy the three files (`*.db, *.config` and `*.log`) from the directory where your database files are located to another location, for example, to a specific backup directory.

   NOTE: The default data (data path) directory is `C:\VibroSight Data`

   Or if it is necessary for the VibroSight-based system to remain operational for as long as possible during the upgrade procedure, back up any important (required) VibroSight databases in the following way:
   - Exit all VibroSight software modules (clients) – no VibroSight software modules, such as Vision or Configurator, should be running.
   - Start VibroSight System Manager and use the database  **Backup** tool from VibroSight System Manager's  **Database** tools, and follow the instructions presented by the Database Backup Wizard.

   NOTE: It is necessary to be logged in to System Manager as 'Admin' in order to have the user rights to access the database tools:

   Select your  VibroSight Host (computer) in the System Explorer tree structure and click  **Login** (from VibroSight System Manager's  **Access Rights** tools).

NOTE: Refer also to the *Backing up a database* topic in the *VibroSight help*.

2. Make backup copies of any important (required) VibroSight Vision projects in the following way:
   - Create an archive file (for example, `*.zip`) containing all of the files (`*.xml` and `*.xmsproj`) in the directory where your project files are located.

NOTE: The default project directory is:
`C:\Documents and settings\username\My Documents\VibroSight\Projects`

3. Ensure that no VibroSight software modules are running.
4. Remove the currently installed version of the VibroSight software (for example, VibroSight Standard Edition) using Windows Add or Remove Programs, in one of the following ways:
   - Click **Start > Settings > Control Panel** and then double-click **Add or Remove Programs**.
   - Or click **Start**, click **Control Panel** and then double-click **Add or Remove Programs**.
5. Install the latest version of the VibroSight software by inserting the VibroSight CD into the CD/DVD drive of the computer and follow the instructions presented by the VibroSight installation wizard.

NOTE: Refer to the *Getting started with VibroSight* installation guide for detailed information on installing the VibroSight software – including prerequisites and compatibility.

6. Restart VibroSight Server and ensure that the required communications are enabled. For example, enable card and module device drivers according to the hardware in the system:
   - For example, click **Data > Acquisition > XMC16/XMV16 Card Driver** or **Data > Acquisition > VibroSmart Module Driver**.
7. Restart VibroSight Vision and ensure that live data is being received from the hardware and displayed in Vision.
8. The VibroSight system is now up and running.

6.1.1. Updating the internal structure of a VibroSight database

When VibroSight Server is started, it checks the status of the database and will automatically inform the user if any internal structures of the database need to be updated before proceeding.

1. Update a VibroSight database in the following way:

   - Start VibroSight System Manager and use the database  **Update** tool from VibroSight System Manager's  **Database** tools, and follow the instructions presented by the Database Update Wizard.

NOTE:	It is necessary to be logged in to System Manager as 'Admin' in order to have the user rights to access the database tools: Select your  VibroSight Host (computer) in the System Explorer tree structure and click  **Login** (from VibroSight System Manager's  **Access Rights** tools).
NOTE:	Refer also to the *Updating a database* topic in the  *VibroSight help*.

6.2. Upgrading the Sybase SQL Anywhere 11 software

VibroSight software is compatible (and extensively tested) with Sybase SQL Anywhere versions 11.0.0 and 11.0.1.

However, with the release of SQL Anywhere version 11.0.1.2867, Sybase has fixed some previously known memory issues. Therefore, it is **mandatory** to upgrade all VibroSight systems to this version of SQL Anywhere 11.

Determine the version of the SQL Anywhere 11 database engine installed on a computer in the following way:

1. From the Start menu, click **Start > All Programs > SQL Anywhere 11 > Sybase Central**.

   The Sybase Central window appears. Sybase Central is a GUI-based management tool for Sybase products.

2. Click **Help > About Sybase Central**.

   The About Sybase Central windows appears, displaying the version information for SQL Anywhere 11 (and any other installed Sybase products).

NOTE:	Refer also to the *Determining the version of SQL Anywhere 11 installed on a computer* topic in the  *VibroSight help*.

If SQL Anywhere 11 version 11.0.0 is installed on the computer, it is necessary to first remove version 11.0.0, then install version 11.0.1 from the Sybase CD.

If SQL Anywhere 11 version 11.0.1 is installed on the computer, simply update to version 11.0.1.2867 by running the software update (patch) included on the Sybase CD.

When SQL Anywhere 11 software version 11.0.0 is installed on the computer:

NOTE: Do not use the SQL Anywhere 11.0.1 setup to upgrade directly to software version 11.0.1 from software version 11.0.0. Instead, it is necessary to upgrade the Sybase database software as follows:

1. Remove SQL Anywhere 11.0.0, using the Windows Add or Remove Programs tool.

2. Install SQL Anywhere 11.0.1, using the Sybase SQL Anywhere 11.0.1 CD.

Refer also to the *Getting started with VibroSight* installation guide for information on installing the Sybase software.

1. Exit all VibroSight software modules (clients and servers) – no VibroSight software modules, such as Vision, Configurator or Server, should be running – as this also stops the SQL Anywhere 11 database engine.

   The lightning icon that appears in the notification area (at the far right of the task bar) to indicate that a Sybase database engine is running should no longer be shown.

2. Remove the currently installed version of Sybase SQL Anywhere 11 using Windows Add or Remove Programs, in one of the following ways:

   - Click **Start > Settings > Control Panel**, then double-click **Add or Remove Programs**
   - Or click **Start**, click **Control Panel** and then double-click **Add or Remove Programs**.

   And remove SQL Anywhere 11.

3. Restart the computer.

4. Install Sybase SQL Anywhere VibroSight 11.0.1.2044 by inserting the Sybase CD into the CD/DVD drive of the computer and following the instructions presented by the SQL Anywhere 11 installation wizard.

5. Restart the computer.

   Without this final computer restart, VibroSight Server may not be able to start the SQL Anywhere 11 database engine.

When SQL Anywhere 11 software version 11.0.1 is installed on the computer:

1. Update to Sybase SQL Anywhere VibroSight 11.0.1.2867 by inserting the Sybase CD into the CD/DVD drive of the computer, running the *SA11_Full_Win32+x64.1101_2867_EBF.exe* software update (patch) and following the instructions presented by the SQL Anywhere 11 installation wizard.
2. Restart the computer.

6.3. Updating the VibroSight hardware

Appropriate files and tools are included in the installation package to allow VM600 cards (CPUR, XMC16, XMV16 and XMVS16) and VibroSmart DMS devices (VSI010, VSN010 and VSV300) to be updated to the latest standard, in order to take advantage of improvements to the VibroSight software.

6.3.1. VM600 card firmware

The latest VM600 card firmware files are copied to a directory on your computer as part of the VibroSight installation process.

NOTE:	For example, the default firmware directory for VM600 cards is: `C:\Program Files\Meggitt\VibroSight 2\Firmware\VM600`

The firmware files for a VM600 card can be found in the appropriate subfolder and identified by their .tgz file name extension. For example, the `XMV16` subfolder contains the applications and base system firmware for use by XMV16 cards. Any additional firmware updates received from Meggitt Sensing Systems should also be stored in these directories.

Table 1 shows the compatibility between VibroSight software and VM600 card hardware (that is, XMC16, XMV16 and XMVS16 card pair firmware).

NOTE:	It is strongly recommended to use the most recent version of the VM600 card firmware that is compatible with the version of VibroSight software being used.

Table 1: VibroSight software and VM600 card firmware compatibility

	VM600 card firmware						
VibroSight client-server software (VibroSight version CD part number)	Applications (*.tgz)						
	640-010-001-001	640-010-001-002	640-010-001-003	640-010-001-004	640-010-001-005	640-010-001-006	640-010-001-007
	Base-system (*.tgz)						
	640-003-001-002	640-003-001-003	640-003-001-004	640-003-001-005	640-003-001-006	640-003-001-007	640-003-001-008
2.5.0 609-004-000-006	✓						
2.7.5 609-004-000-008	✓	✓					
2.8.0 609-004-000-007	✓	✓					
2.9.0 609-004-000-010			✓				
2.9.1 609-004-000-011				✓	✓	✓	
2.9.2 609-004-000-012				✓	✓	✓	
2.9.3 609-004-000-013				✓	✓	✓	
2.9.4 609-004-000-014				✓	✓	✓	
2.9.5 609-004-000-015				✓	✓	✓	
2.9.6 609-004-000-016				✓	✓	✓	
2.9.7 609-004-000-017							✓

6.3.2. VibroSmart DMS device firmware

The latest VibroSmart DMS device firmware files are copied to a directory on your computer as part of the VibroSight installation process.

NOTE:	The default firmware directory for VibroSmart DMS devices is: `C:\Program Files\Meggitt\VibroSight 2\Firmware\VibroSmart`

The firmware files for a VibroSmart DMS device can be found in the appropriate subfolder and identified by their .*fw file name extension. For example, the `VSV300` subfolder contains the firmware for use by VSV300 modules. Any additional firmware updates received from Meggitt Sensing Systems should also be stored in these directories.

Table 2 shows the compatibility between VibroSight software and VibroSmart DMS device hardware (that is, VSI010, VSN010 and VSV300 device firmware).

NOTE:	It is strongly recommended to use the most recent version of the VibroSmart DMS device firmware that is compatible with the version of VibroSight software being used.

Table 2: VibroSight software and VibroSmart DMS device firmware compatibility

	VibroSmart DMS device firmware			
VibroSight client-server software (VibroSight version CD part number)	**VSI010**	**VSN010**	**VSV300**	**VSV310**
2.8.0 609-004-000-007	642-002-001-001.xmsifw	642-004-001-001.redboxfw	642-001-001-001.xtranfw	Not available yet
2.9.1 609-004-000-011	642-002-001-001.xmsifw	642-004-001-001.redboxfw	642-001-001-002.xtranfw	Not available yet
2.9.2 609-004-000-012	642-002-001-001.xmsifw	642-004-001-001.redboxfw	642-001-001-002.xtranfw	Not available yet
2.9.3 609-004-000-013	642-002-001-001.xmsifw	642-004-001-001.redboxfw	642-001-001-002.xtranfw	Not available yet
2.9.4 609-004-000-014	642-002-001-001.xmsifw	642-004-001-001.redboxfw	642-001-001-002.xtranfw	Not available yet
2.9.5 609-004-000-015	642-002-001-001.xmsifw	642-004-001-001.redboxfw	642-001-001-002.xtranfw	Not available yet
2.9.6 609-004-000-016	642-002-001-002.xmsifw	642-004-001-002.redboxfw	642-001-001-003.xtranfw	Not available yet
2.9.7 609-004-000-017				

6.3.3. Updating the firmware using VibroSight System Manager

When performing VibroSight software upgrades, it is strongly recommended to systematically upgrade the firmware of VM600 cards and VibroSmart DMS devices to the latest compatible version.

Failure to perform a necessary VibroSight card firmware update may lead to incoherent system behaviour and affect the proper functioning of data acquisition in a system. It is only in systems where the firmware running on the VM600 cards and VibroSmart DMS devices already corresponds to the latest available version that no firmware update is required. Therefore, it is strongly recommended to verify the version of firmware running on the hardware before starting a VibroSight system upgrade, in order to establish if a firmware update is also required.

NOTE: Changing the firmware of the VibroSight hardware is a special administrative task that can – if performed unintentionally – affect the proper functioning of data acquisition in a system.

It is therefore strongly recommended to change the firmware of the VibroSight hardware only when it is necessary. For example, when the devices must be updated to be compatible with a VibroSight software upgrade.

Update the firmware on a VibroSight device using the  **Change Firmware** tool (from VibroSight System Manager's **Maintenance** tools):

1. Ensure that the computer running the VibroSight software is on the same network as the hardware (VM600 card or VibroSmart DMS module or device) to be updated.
2. Start VibroSight System Manager and navigate to the Devices tree structure in the System Explorer window.

   The Devices tree lists all of the VibroSight compatible hardware that VibroSight can see on the network. If there are no VM600 cards or VibroSmart DMS devices in the tree structure or some cards are missing, verify your network connections.
3. Select the card or device that requires its firmware to be changed.

   The Actions tool window updates to show the available tools.
4. Click  **Change Firmware** in the Maintenance tools group of the Actions window.

   The Change Firmware dialog box appears.
5. Click the **Add** button and select the new firmware files for the card or new firmware file for the device.

NOTE: The Change Firmware dialog box automatically opens the firmware folder corresponding to the VM600 card or VibroSmart DMS device selected.

`.tgz` files are for VM600 cards and `.*fw` files are for VibroSmart DMS devices.

6. Click the **Finish** button to start the firmware upgrade process.

   For VM600 cards and VibroSmart DMS devices, the firmware upgrade process can take up to 5 minutes, during which:

   - The IP address beside the device's serial number in the Devices tree structure can disappear.
   - The LEDs on the front panel of the device can change to reflect the status of the upgrade.

7. Repeat steps 3 to 6 for each device that requires a firmware update.

NOTE: Although the firmware for each VibroSight device must be changed individually using the **Change Firmware** tool, as each device updates its firmware independently of the VibroSight software (once the process has started), firmware updates can be performed on several devices in parallel.

8. After the firmware upgrade, verify that the VibroSight system is acquiring data from the cards.

NOTE: Refer also to the *Changing the firmware* topics in the *VibroSight* help.

The **Change Firmware** tool can be used to load a VibroSight device with any version of firmware. It is therefore possible to change a device's firmware to any previously available version, as well as the latest update.

This feature can be useful in certain situations, for example, swapping spare VibroSight hardware between different VM600 racks or VibroSmart DMSs, where systems are operating with different versions of VibroSight.

6.4. Final check

After upgrading the VibroSight software, it is recommended to open the configuration and run a consistency check in order to ensure that the configuration has not been inadvertently modified by any changes to the VibroSight software, internal database structure and firmware for the hardware (VM600 cards and VibroSmart DMS modules).

7. Customer support

7.1. Contacting us

Meggitt Sensing Systems worldwide customer support network offers a range of support including Technical support and Sales and repairs support. For customer support, please contact your local Meggitt Sensing Systems representative. Alternatively, contact our main office:

Customer support
Meggitt SA
Route de Moncor 4
PO Box 1616
CH-1701 Fribourg
Switzerland

Telephone: +41 (0) 26 407 11 11
Email: energysupport@ch.meggitt.com
Web: www.meggittsensingsystems.com

7.2. Technical support

Meggitt Sensing Systems technical support team provide both pre-sales and post-sales technical support, including:

- General advice
- Technical advice
- Troubleshooting
- Site visits.

7.3. Sales and repairs support

Meggitt Sensing Systems sales team provide both pre-sales and post-sales support, including advice on:

- New products
- Spare parts
- Repairs.

Appendix

VibroSight software and Windows operating system compatibility

	Windows XP and Windows Server 2003 R2	Windows Vista and Windows Server 2008	Windows 7 and Windows Server 2008 R2	Windows 8 and Windows Server 2012
VibroSight software compatible?	Yes, but not recommended for new installations as Microsoft support for Windows XP SP3 ends on 08 April 2014	Yes, but not recommended. Windows Server 2008 R8 should be used instead of Windows Server 2008	Yes – recommended for new installations	To be announced

Microsoft .NET Framework versions pre-installed on Windows operating systems

	Windows XP and Windows Server 2003 R2	Windows Vista and Windows Server 2008	Windows 7 and Windows Server 2008 R2	Windows 8 and Windows Server 2012
Microsoft .NET Framework pre-installed on Windows operating system	None on XP. .NET Framework 2.0 on Server 2003 R2	.NET Framework 3.0	.NET Framework 3.0 SP1	.NET Framework 4.5

VibroSight software's Microsoft .NET Framework requirements

VibroSight software version	Windows XP and Windows Server 2003 R2	Windows Vista and Windows Server 2008	Windows 7 and Windows Server 2008 R2	Windows 8 and Windows Server 2012
VibroSight 2.9.1 or earlier	.NET Framework 3.5 SP1	.NET Framework 3.5 SP1	.NET Framework 3.5 SP1	.NET Framework 3.5 SP1
VibroSight 2.9.2 and 2.9.3	.NET Framework 4	.NET Framework 4	.NET Framework 4	.NET Framework 4
VibroSight 2.9.4 or later	.NET Framework 4 [1]	.NET Framework 4.5	.NET Framework 4.5	.NET Framework 4.5