



RELEASE NOTES

VibroSight® software
version 2.11.0



Meggitt SA
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
SWITZERLAND

REVISION RECORD SHEET

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	Department	Name	Date	Signature
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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 2.11.0 (CD part number 609-004-000-020).

This document contains information about changes to the software since the previously released version (VibroSight 2.10.1), 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. 660-020-005-213A)



Getting started with VibroSight installation guide
(MSS document ref. 660-010-006-216A)



VibroSight help






XMV16 / XIO16T extended vibration monitoring card pair data sheet
(MSS document ref. 660-020-010-206A)



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 cards that are designed for operation with the VibroSight software are the XMx16 card pairs (XMC16 / XIO16T, XMV16 / XIO16T and XMVS16 / XIO16T) and the CPUR card (for configuration only).

Where XMx16 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 between update level releases. For example, from version 2.10.0 to version 2.10.1.

However, a new licence key is required for upgrades between major and minor version releases. For example, from version 2.10.x to version 2.11.0.

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

2. Features

General

2.1. Direct measurement mode (direct data) – acquiring measurement data before an event

Measurement data is acquired from XMx16 cards using different measurement modes that can be configured for a dynamic processing block. Previously, only the principal measurement mode (Principal Mode) and auxiliary measurement mode (Auxiliary Mode) were available but the direct measurement mode (Direct Mode) is now also available.

NOTE: By default, the principal measurement mode is enabled, while the auxiliary measurement mode and the direct measurement mode are disabled.

The different measurement modes are configured at the **Spectra And Waveforms** node level for a dynamic processing block using the corresponding **Principal Mode**, **Auxiliary Mode** and **Direct Mode** tabs under **Waveform and Spectrum Processing**.

The direct measurement mode (direct data) enables a digitised continuous long-duration waveform from a dynamic input channel to be recorded on a local hard disk drive of the computer running the VibroSight Server. It is typically used to obtain a digitised waveform for up to 10 minutes before an event (Alarm Event Based data logging rule). However, it is not possible to configure alarms based on the direct data.

NOTE: Unlike the principal measurement mode (Principal Mode) and auxiliary measurement mode (Auxiliary Mode) which log data in the VibroSight Server database, the direct measurement mode (Direct Mode) records data to dedicated direct data files and folders on a local hard disk drive of the computer running the VibroSight Server.

The direct data waveform is resampled at a frequency configured by the user and is encoded using the industry standard TDMS file format. The direct data waveform is a resampled waveform taken directly from the XMx16 card itself with no processing (such as FFT, averaging or filtering) applied.

NOTE:	<p>The direct data waveforms obtained using the direct measurement mode are encoded in the TDMS (technical data management streaming) file format from National Instruments.</p> <p>TDMS is a format designed specifically for engineering data and consists of three levels of hierarchy (file, group, channel) for saving and organizing measurement data. The TDMS file format is a binary format capable of fast streaming rates.</p> <p>The presentation of direct data is not currently supported in VibroSight Vision. Third-party software capable of displaying measurement data stored in the TDMS file format is therefore required for data visualisation.</p>
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Third-party software capable of displaying measurement data stored in the TDMS file format includes:

- TDMS File Viewer, from DMC:
<http://www.dmcinfo.com/our-services/test-and-measurement-automation/pc-based-control/labview-development-and-programming/tdms-file-viewer.aspx>
- TDM Excel Add-In for Microsoft® Excel®, from National Instruments:
<http://zone.ni.com/devzone/cda/epd/p/id/2944>
- TDMS Reader for MATLAB®:
<http://www.mathworks.com/matlabcentral/fileexchange/30023-tdms-reader>

In order to be able to provide data before an event (pre-trigger data), a circular buffer of the direct data waveform is constantly recorded to dedicated a direct data buffer file on a local hard disk drive in the TDMS file format (for the dynamic processing blocks that have Direct Mode enabled). The time duration (size) of this circular buffer is configured by the user. The direct data is organized in individual files per input channel, covering 1 minute each. The file names used for the direct data files encode the hierarchical path to the input channel as well as the timestamp corresponding to the beginning of the recording in local computer time.

Every time the Alarm Event Based data logging rule configured for operation with the direct data is triggered (that is, the severity levels configured in the associated Alarm Event Based logging rule are reached), the circular buffer of direct data is copied to the direct data folder in order to provide the user with the pre-event direct data.

The direct data folder is managed by the VibroSight software as a circular buffer (queue) that can contain up to 15 blocks of pre-event direct data. If the direct data folder already contains the direct data from 15 alarm events, then when the next alarm event occurs, the oldest block of pre-event direct data is deleted in order to provide space for the latest block of pre-event direct data. (This is necessary to avoid rapidly filling the hard disk drive with data from the direct measurement mode.)

NOTE:	<p>Subfolders of the VibroSight database folder are used as the default location for the files used to record direct data.</p> <p>The default location for VibroSight database files is: <code>C:\VibroSight Data</code></p> <p>The default location for the blocks of pre-event direct data obtained for alarm events is: <code>C:\VibroSight Data\Direct Data</code></p>
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The default location for the circular buffer of direct data is:
 C:\VibroSight Data\Direct Data\Buffer

To change the default locations used by a VibroSight Server to record the direct data, change the **Output Location** and **Buffer Location** settings under **Environment \ Direct Data**, available from the **Tools > Options** menu.

In order for a VibroSight Server to record the direct data (digitised waveform) acquired by the XMx16 card in direct measurement mode:

- The duration of the circular buffer (**Buffer Length Time**) used by the direct measurement mode (direct data) must be configured in the Hardware View at the processing block level.
- The direct measurement mode (Direct Mode) must be enabled (**Output State**) in the hardware view at the Spectra And Waveforms level, under the processing block.
- An Alarm Event Based data logging rule in the Data Storage View must be configured to use the direct data waveform (**Data Entities**), the correct logging scope (**Pre/Post-Logging Scope**), the correct logging duration (**Pre-Logging Duration**) and the number of blocks of pre-event data (**Event Data Recording**).
- The recording of direct data must also be enabled at the VibroSight Server level (**Data > Logging > Direct Data Logging**).

To configure direct measurement mode data acquisition in the Hardware View:

- In the Hardware View, at the dynamic processing block level, the **Sampling Mode** (under **Resampler Settings**) must be set to Fixed Frequency.
- At the **Spectra And Waveforms** node level for the dynamic processing block, the **Direct Mode** tab under **Waveform and Spectrum Processing** is used to set the **Output State** to Enabled.
- Back at the dynamic processing block level, the **Bandwidth** (under **Resampler Settings**) and the **Buffer Length Time** (under **Direct Data Host Buffer (Settings specific to this processing block)**) are used to set the time duration (size) of the direct data circular buffer in terms of the number of samples to be acquired, according to the following formulae:

$$\text{Sampling frequency} = 2.56 \times \text{Bandwidth}$$

$$(\text{Number of}) \text{ Samples} = \text{Sampling frequency} \times (\text{Circular}) \text{ Buffer Length Time}$$

To calculate the number of samples for the direct measurement mode of a dynamic processing block, the *Sampling frequency* should be converted to Hz and the (circular) *Buffer Length Time* should be converted to seconds.

The sampling frequency calculated by VibroSight Configurator is displayed in the **Buffer Length Samples** (under **Direct Data Host Buffer (Settings specific to this processing block)**) and must be less than the **Maximum Available** of 15,360,000 (also under **Direct Data Host Buffer (Settings specific to this processing block)**) to avoid consistency check errors.

NOTE: The **Bandwidth** setting (under **Resampler Settings**) at the dynamic processing block level is common to all of the measurement modes configured for that processing block: Principal Mode, Auxiliary Mode, and Direct Mode.

To configure the Alarm Event Based data logging rule in the Data Storage View:

- In the Data Storage View, at the configuration root level, add a New Data Storage Group.
- At the Data Entities node level under the new Data Storage Group, select the waveform measurements used by the direct measurement mode in order to associate the data logging rule with the direct data. (The name can be found at the **Spectra And Waveforms** node level for the dynamic processing block, on the **Direct Mode** tab under **Output Name**.)

Note: As the direct data (digitised waveform) cannot have events or severities associated directly with them, a dedicated trigger (typical a separate extracted data entity with alarms) must also be added to the Data Entities. This trigger will then “drive” the direct measurement mode data acquisition and will also be logged together with the direct data.

- In the new Data Storage Group, add a new Alarm Event Based data logging rule.
- Configure the new Alarm Event Based data logging rule as follows:
 - Under **Severity Levels**, select the severity level or levels required to trigger this data logging rule (and therefore, to trigger the circular buffer of pre-event direct data to be copied to the direct data folder).
 - Under **Pre/Post-Logging Scope**, select either Processing Block or Logging Group. (The Data Entity scope cannot be used with pre-event direct data as it is not possible to configure alarms with direct data.)
 - Under **Pre-Logging Duration**, specify the time period leading up to the alarm event for which pre-event direct data should be recorded.

Note: The duration for which pre-event direct data can be obtained cannot be greater than the duration of the circular buffer (**Buffer Length Time**) that was previously defined.

- Under **Event Data Recording**, specify the maximum number of alarm events for which pre-event direct data should be saved.

For a specified pre-logging duration, pre-event direct data is recorded up to the specified number of alarm events. For example, if **Pre-Logging Duration** is 3 minutes and **Event Data Recording** is 10, then 3 minutes of pre-event direct data is copied to the direct data folder for each event until the count reaches 10.

Note: A circular buffer (queue) is used to record pre-event direct data, so when a new alarm event occurs after the configured maximum (**Event Data Recording**) has been reached, the oldest block of pre-event direct data is deleted in order to provide space for the latest block of pre-event direct data.

- **Post-Logging Duration** cannot be used by an Alarm Event Based data logging rule to record direct data.

Limitations of the direct measurement mode (Direct Mode):

- It can be used with the fixed-frequency sampling mode only. (The order-tracked sampling mode will be supported in the future.)
- It can be used to obtain data before an event (pre-trigger data) only. (Post-trigger data after an event will be supported in the future.)
- It acquires waveform measurements only (that is, the resampled waveform data taken directly from the XMx16 card itself).
- It is limited to waveform measurements up to a maximum of 15,360,000 samples before an alarm event. For example, with a bandwidth of 10,000 Hz, waveforms up to 10 minutes long can be obtained.
- It is limited to a maximum of 16 channels in a VibroSight configuration.
- The Alarm Event Based data logging rule used to record the direct data is limited to a maximum of 15 alarm events (default: 10).

When the local hard disk drive of the computer running the VibroSight Server becomes full, the direct measurement mode will stop acquiring data from XMx16 cards.

When more free space becomes available on the local hard disk drive of the computer running the VibroSight Server, the direct measurement mode will start acquiring data from XMx16 cards again.

In addition, the VibroSight Server window provides a command that allows the recording of direct measurement mode data to be started and stopped (**Data > Logging > Direct Data Logging**), independently of the principal measurement mode and auxiliary measurement mode data (**Data > Logging > Database Logging**).

See also section 5.2.1 Firmware.

2.2. VibroSight OPC Server support for dynamic data

VibroSight OPC Servers now support dynamic measurements such as waveforms, spectrums and orbits, which are exported as an array of scalar values.

NOTE:	All of the measurements (data) available from a VibroSight Server that are supported by a VibroSight OPC Server are listed in the VibroSight OPC Server, as VibroSight OPC Servers automatically publish all measurements.
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Previously, VibroSight OPC Servers supported the export of static measurements only. For example, extracted data entities such as scalars, vectors and phasors, which were exported as scalar values.



VibroSight Vision

2.3. Display of timestamps

Previously, VibroSight Vision displayed timestamps in local computer time only, that is, the date and time according to the local clock of the computer running VibroSight Vision.

NOTE: A VibroSight Server internally stores all timestamps in UTC. These timestamps are read and converted to other time formats when they are displayed.

The timestamps (date and time) for the measurement data displayed by VibroSight Vision can now be configured as one of the following:

- **Site time** – the date and time according to the time zone options configured for the VibroSight Server (as stored in the VibroSight Server database), including any daylight saving time adjustments.
When Site time is selected in VibroSight Vision, the time zone and daylight saving time settings configured for the VibroSight Server are used directly by VibroSight Vision.
- **UTC time** – the date and time according to coordinated universal time (UTC), which is the primary time standard used to regulate clocks and time throughout the world, including computers. Its use can help avoid confusion about time zones (time zones around the world are expressed as positive or negative offsets from UTC) and daylight saving time (UTC does not change with the seasons: the local time changes, for example, a local time of UTC+1 might become UTC+2 if the region observes daylight saving time).
- **Local computer time** – the date and time according to the local clock of the computer running VibroSight Vision (that is, the local time zone and any daylight saving time adjustments).
When Local computer time is selected in VibroSight Vision, the time zone information from the VibroSight Server is converted to the local time zone by VibroSight Vision. In addition, the daylight saving time settings (Windows > Control Panel > Date and Time) on the computer running VibroSight Vision are applied by VibroSight Vision, which is indicated by **(DST)** being displayed at the end of the **Local computer time** text string in the status bar.

By default, VibroSight Vision will use Site time for the measurement data timestamps displayed in VibroSight Vision.

To change the time zone used by a VibroSight Server, change the **Time Zone** setting under **Environment \ Time Zone**, available from the **Tools > Options** menu. Alternatively, in VibroSight System Manager, connect to the VibroSight Server and under **Configuration**, use the **Time Zone** command.

The time zone being used by the VibroSight Server is displayed in the VibroSight Server window under **Time Zone**. This information is also displayed in VibroSight System Manager, under **Information**, when it is connected to a VibroSight Server.

To change the timestamp used in VibroSight Vision, change the **Time Zone** setting under **Environment \ Timestamps** available from the **Tools > Options** menu. This setting will be saved as the default and used for all subsequent VibroSight Vision projects.

Alternatively, the timestamp can be changed by clicking the **Timestamp** displayed in the VibroSight Vision status bar. This setting will be saved as the default for the current VibroSight Vision project (session) only.

The timestamp displayed in the VibroSight Vision status bar will either be **Site time**, **UTC time** or **Local computer time**. This setting applies to the entire VibroSight Vision session, covering plots, time axes, cursor information and time ranges.

In the VibroSight Vision status bar (under **Timestamps**) and in the VibroSight Server window (under **Time Zone**), **(DST)** is included at the end of the time text string displayed if daylight saving time is being used for the date and time settings.

Moving the pointer over the **Timestamps** control displayed in the VibroSight Vision status bar displays an on-screen tip containing additional information on the time zone being used.

See also section 2.5 Configuration of daylight saving time.

2.4. Session limits

VibroSight Vision session limits have been introduced in order to ensure that a user does not create a VibroSight Vision project of such complexity that the performance of VibroSight Vision declines and they experience system responsiveness issues.

The purpose of the session limits is to limit the maximum size of a VibroSight Vision session and primarily affects the following:

- Number of views
- Plot types in views
- Data entity types in plots
- Data entity sizes in plots
- Settings of the time range.

The VibroSight Vision session limits are reached by adding more measurement data to an existing plot, adding a new plot or modifying the time range being used.

NOTE: The selected time range is shared by all plots (and views) in a VibroSight Vision project. That is, when the time range is changed, all of the plots in the project update to use the new time range.

If the session limits are reached, a message is displayed to the user: "You are already using the maximum of available resources. Please remove some plots, reduce the time range and try again."

In addition, there is a limit of 64 series per plot. If the user tries to add more, a message is displayed to the user: "The plot can contain a maximum of 64 series. There are currently XX series and you are trying to add YY."

As explained in the VibroSight software version 2.10.0 release notes, in order to reduce the possibility of performance-related issues, it is recommended to work with projects in a modular and structured way and avoid overloading individual VibroSight Vision projects with too much information. For example, use one VibroSight Vision project for live data and other separate VibroSight Vision projects for different historical data analysis tasks.

In general, best practice for working with VibroSight includes the following general recommendations for VibroSight Vision projects:

- Limit the number of live spectrogram plots and waterfall/cascade plots per project.
- Allow only one measurement (data entity) per spectrogram plot or waterfall/cascade plot.
- If multiple spectrogram plots or waterfall/cascade plots are being used in a project, allow only one of these plots to be active at a time (that is, displayed at the front of the working area and being updated).
- If polar plots or shaft centreline plots are being used in a project, do not show speed or time labels on the plot. (Right-click on a plot, click Plot Properties and clear the Labels check box on the General tab of the dialog box.)
- Reduce the overall number of measurements (data entities) being used in a single project.
- When interacting with a VibroSight Vision project, delete temporary plots that are no longer required.



VibroSight Server

2.5. Configuration of daylight saving time

Previously, only the time zone settings for a VibroSight Server could be configured (as daylight saving time adjustment settings were not available for a VibroSight Server).

Both the time zone settings and the daylight saving time (DST) adjustment settings for a VibroSight Server can now be configured in one of two ways:

- Using VibroSight Server
 - Click **Tools > Options** to display the Options window.
 - Under Environment, click **Time Zone** to display the time zone and daylight saving time settings.
 - Use the drop-down list box to select the required UTC time zone (time zones around the world are expressed as positive or negative offsets from UTC).

Note: If your time zone observes daylight saving time and you want your computer's clock to be adjusted automatically when daylight saving time changes, make sure the **Adjust for Daylight Saving Time** check box is selected.

- Alternatively, click the **Use current** button to use the Windows date and time settings, (including daylight saving time) configured for the computer as the time zone settings for the VibroSight Server.
- Click **OK** to apply and save any changes to the VibroSight Server's time zone settings.
- Using System Manager
 - Under your computer in the **VibroSight Hosts** tree structure of the **System Explorer** window, select the VibroSight Server.
 - Click the **Connect** command under **Connection** in the **Actions** window. Information about the VibroSight Server is displayed under Information and Data, and the available commands are displayed in the **Actions** window.
 - Click the **Login** command under **Access Rights** in the **Actions** window. Log in at the Admin user level in order to have access to all of the available commands.
 - Click the **Time Zone** command under **Configuration** in the **Actions** window. Use the Time Zone dialog box that is displayed to configure the the time zone and daylight saving time settings (as per the VibroSight Server above).
 - Click **OK** to apply and save any changes to the VibroSight Server's time zone settings.

The time zone being used by the VibroSight Server is displayed in the VibroSight Server window under Time Zone. This information is also displayed in VibroSight System Manager, under Information, when it is connected to a VibroSight Server.

See also section 2.3 Display of timestamps.

3. Solved problems and bug fixes

General

3.1. Improvements and bug fixes

General improvements and bug fixes throughout the VibroSight 2.11.0 software modules, including:

- Improvements to VibroSight Vision that have greatly reduced previously seen performance issues that affected the display of plots when viewing live data (typically characterised by plots being displayed with small “holes” in the data, corresponding to when the computer has reached its performance limits).
- Improvements in the use of qualifiers (rectifiers) in VibroSight Vision so that it is now clear from a plot which qualifiers are used for the measurement.
- General stability improvements and multiple bug fixes across the various software modules that constitute VibroSight.

4. Known issues

4.1. Performance issue running VibroSight without a transaction log

A transaction log is a cumulative record of all the changes made to a database since it was first created, or since the transaction log file was last truncated to remove all of the old transaction log data (which is typically done after a database backup).

A transaction log file is a separate file from the database file and the use of a transaction log is optional, but since running a database with a transaction log improves the overall performance of the database (and therefore, the VibroSight machinery monitoring system), it is recommended to use a transaction log unless there is a specific reason not to. In addition to improved performance, a transaction log is also a key component for protection against failure and for recovery of data.

In general, if the underlying VibroSight Server database (SQL Anywhere 11) is operated without a transaction log, then the performance of the database and VibroSight can degrade.

Starting with VibroSight 2.11.0, transaction logs are enabled by default and one is automatically created when a new VibroSight Server database is created. In addition, VibroSight Server displays a warning message when the underlying database is running without a transaction log.

Previously, transaction logs were disabled by default. However, the Sybase Central tool can be used to create a transaction log for an SQL Anywhere database that was created without one:

1. Start Sybase Central. For example, from the Windows Start menu, click **Start > All Programs > SQL Anywhere 11 > Sybase Central**.
2. In Sybase Central, click **Tools > SQL Anywhere 11 > Change Log File Settings**.
3. Click **Next** to continue.
4. Click the **Browse** button and use the dialog box that appears to specify the VibroSight Server database file (*.vsrvdb or *.db) for which a transaction log should be created. Then click **Next** to continue.
5. Click **Next** to continue (that is, accept all of the default settings).
6. Select the **Maintain the following transaction log file** check box and change the file name and/or location of the transaction log file to be used, as required. Then click **Finish**.

NOTE: It is recommended that you store database files and transaction log files on separate disks on the computer. If the database files and transaction log files are on the same disk, and a disk failure occurs, everything is lost.

However, if the database and transaction log are stored on different disks, then most, if not all, the data can be recovered in the event of a disk failure because you have the full database or the transaction log (from which the database can be recovered).

7. Start the VibroSight Server using the database file and verify that the transaction log file is created (using the file name and location specified in step 6).

4.2. Tachometer ratios for order-tracked measurements

When order-tracked measurements are used (Sampling Mode: Order Tracked), a tachometer input channel must be configured to provide the reference (Reference Speed) for the digital resampler.

However, if this tachometer input channel is configured with a non-integer ratio (Pulses Per Rev.), then the associated order-tracked measurements do not work correctly.

4.3. Changing a VibroSight Server's maximum RAM cache size when DSNs are not used

Since VibroSight 2.9.7, a VibroSight Server database no longer requires a data source name (DSN), so it is no longer required to use the ODBC Data Source Administrator to manage the underlying connection to the Sybase SQL Anywhere 11 database (which provided convenient access to the start line command that is used to start the SQL Anywhere 11 server).

NOTE: `dbeng11.exe -ch 600m` is the default command used to start the SQL Anywhere 11 server, where the `-ch 600m` option specifies that a maximum RAM cache size of 600 MB should be used. (This option limits the underlying SQL Anywhere's database server cache during automatic cache growth.)

However, for more complex machinery monitoring applications and larger databases, it is recommended that a maximum RAM cache size of 2000 MB (`-ch 2000m`) is used, in order to improve the overall performance of the VibroSight machinery monitoring system.

When a DSN is not used with a VibroSight Server database, the settings usually written to the DSN using the ODBC Data Source Administrator are managed by the VibroSight Server itself and stored in the VibroSight Server configuration file (`*.vssrvcfg`). However, this means that the specification of the maximum cache size to be used by the VibroSight Server database is not as convenient to access by the user.

Presently, the default command used to start the SQL Anywhere 11 server will be used unless:

- In VibroSight Configurator, when saving the configuration as a server / database, the Configure advanced settings option is used to enter a different SQL database start line command.
- In VibroSight System Manager, when copying the database, the Configure advanced settings option is used to enter a different SQL database start line command.

So when DSNs are not used with a VibroSight Server database, the VibroSight Server configuration file (`*.vssrvcfg`) must be edited manually if it is necessary to change the SQL database start line command after a VibroSight Server database has been created or copied:

1. Exit all VibroSight software modules (clients and servers) that use the VibroSight Server database to be modified.
2. Use a text editor program to open the VibroSight Server configuration file (`*.vssrvcfg`) and search for the text string `dbeng11.exe`.

3. Edit the `StartLine="dbeng11.exe -ch 600m"` command in the configuration file to use the new required maximum cache size.

For example, `StartLine="dbeng11.exe -ch 2000m"`, then save the file.

4. Restart the VibroSight Server.

If the `StartLine="dbeng11.exe -ch 600m"` command cannot be found in the VibroSight Server configuration file being used, then a “dummy” copy of the VibroSight Server database should be created using VibroSight System Manager’s Database Copy command with the Configure advanced settings option selected. A “dummy” VibroSight Server configuration file created in this way will include the SQL database start line command and can be used as an example to edit the VibroSight Server configuration file being used. (After which, the “dummy” files should be deleted.)

NOTE: It is highly recommended to make a backup copy of the VibroSight Server configuration file being used before manually editing it.

Such manual edits must be done carefully in order to ensure that the tags and delimiters used in the VibroSight Server configuration file are used correctly.

4.4. Display of timestamps

In VibroSight Vision, when the timestamps (date and time) are configured to be displayed as Site time or Local computer time and the site time or local computer time is subsequently changed on the relevant computer (for example, using Windows > Control Panel > Date and Time), this change is not reflected in the VibroSight Vision user interface until the user clicks on the **Timestamp** displayed in the VibroSight Vision status bar.

See section 2.3 Display of timestamps.

4.5. Small “holes” in plotted data for large VibroSight Vision projects when viewing live data

Depending on the complexity of a VibroSight application and the performance of the computer running the VibroSight software, the responsiveness of VibroSight Vision can decline under certain situations and affect the display of plots when viewing live data.

In particular, this performance issue has been seen with large VibroSight Vision projects containing many open plots using live data. It is typically characterised by plots being displayed with small “holes” in the data, corresponding to when the computer has reached its performance limits.

If this behaviour is seen, the recommended workaround is to:

- Reduce the number of active plots in the VibroSight Vision project in order to reduce the computational load, as only the currently displayed (foreground) plots are constantly refreshed. Plots that are hidden or minimized (background) are not active and will only be refreshed when they become visible again.
- If it is necessary to view historical data at the same time, consider using a separate VibroSight Vision session to work with the historical data, preferably on a different computer.

4.6. VibroSight Server reference clocks

In order to ensure that the time is set accurately and remains synchronized for all of the components used in a VibroSight-based system, all of the components (VibroSight Server and VM600 XMx16 cards or VibroSmart DMS devices) should be configured to use the same NTP server as a reference clock.

In the event of a problem with the NTP server such as step changes in time or excessive drift, the VibroSight Server will revert to using the local host computer clock as a backup reference clock.

However, under certain circumstances (probably related to the quality of the reference clocks used in a system), a VibroSight Server can experience problems with the reference clock that affect system operation. For example, switching from an NTP server to the local host computer clock can produce a step change in time for a VibroSight Server which can result in problems communicating with VM600 XMx16 cards, logging data and timestamping measurements.

4.7. Missing data for XMV16 and XMVS16 cards

When the order-tracked sampling mode is being used, XMV16 and XMVS16 cards have been seen to disappear (drop out) and produce no data for periods of 10, 20 or 30 seconds. After which, the card usually reappears without any intervention and normal operation resumes.

This issue is being investigated and appears to be a XMV16 and XMVS16 card firmware problem that is related to transitions in the input speed signal from “zero speed” to “non-zero speeds”.

4.8. 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.

4.9. 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 configuration file (*.vssrvcfg or *.config) 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 that remain available for VibroSight Server instance names is deduced to 3 characters. Alternatively, the server instance name can be shorted after the database copy is complete.

4.10. 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.

4.11. 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.

4.12. 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 5.1.6) and the "OPC Core Components Redistributable (x86)" (see section 5.1.7) 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 2.11.0 is a minor version release in the 2.x.x series and replaces VibroSight 2.10.1.

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 6.2.1 Updating the internal structure of a VibroSight database.

5.1.1. VibroSight Vision rework

VibroSight 2.10.0 contained significantly improvements and changes to the VibroSight Vision user interface, including a separate VibroSight Mimic client software module for mimics (that were previously available in VibroSight Vision).

NOTE: As a result of the VibroSight Vision improvements and the new VibroSight Mimic client, VibroSight Vision projects and VibroSight Vision mimics created with VibroSight 2.9.7 or earlier are not compatible with VibroSight 2.10.0 or later.

5.1.2. Microsoft Windows operating systems

VibroSight 2.11.0 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 2.11.x remains 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.

5.1.3. Microsoft .NET Framework

For most Windows operating systems, VibroSight 2.11.0 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.

5.1.4. 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 (XMx16 cards and VibroSmart DMS modules and devices) and software module discovery, VibroSight Server to hardware communications and inter-module communications.

5.1.5. Sybase SQL Anywhere 11 software

VibroSight uses the Sybase® SQL Anywhere 11 database software in its standard configuration. VibroSight 2.11.0 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+64.1101_2867_EBF.exe*. See section 6.3 Upgrading the Sybase SQL Anywhere 11 software.

5.1.6. Microsoft Visual C++ Redistributable Package

The Microsoft Visual C++ Redistributable Package is required in order to install and register the Visual C++ libraries required by a VibroSight OPC server.

If this package does not already exist on the computer, then the VibroSight installation wizard will install it automatically. (The package is included in the ISSetupPrerequisites folder on the VibroSight CD.)

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

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

5.1.7. OPC Foundation OPC Core Components Redistributable

The OPC Core Components Redistributable is required in order to configure and run VibroSight OPC clients and OPC servers correctly: 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 this redistributable does not already exist on the computer, then the VibroSight installation wizard will install it automatically. (The redistributable is included in the ISSetupPrerequisites folder on the VibroSight CD.)

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)") is installed on 32-bit Windows operating systems and the 64-bit version of the package ("OPC Core Components Redistributable (x64)") is 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 2.11.0.

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-640-010-001-008.tgz
- Base System: base-system-640-003-001-009.tgz.

Therefore, for current versions of the VibroSight-compatible VM600 cards, firmware upgrades are required. See section 6.4 Updating the VibroSight hardware.

Improvements to this latest XMx16 card firmware includes support for the direct measurement mode (Direct Mode) that is used to acquire direct data (digitised waveform) before an event.

See section 2.1 Direct measurement mode (direct data) – acquiring measurement data before an event.

5.3. VibroSmart DMS devices

5.3.1. Firmware

There are firmware updates for some VibroSmart DMS modules and devices corresponding to VibroSight 2.11.0.

The latest firmware for the VSI010 module remains:

- 642-002-001-002.xmsifw.

The latest firmware for the VSN010 device is now:

- 642-004-001-005.redboxfw.

The latest firmware for the VSV300 module is now:

- 642-001-001-006.xtranfw.

Therefore, for current versions of the VibroSmart DMS modules and devices, firmware upgrades are required. See section 6.4 Updating the VibroSight hardware.

NOTE: VibroSight 2.10.1 introduced features for VibroSmart DMS that were activated in order to ensure compatibility with future releases of VibroSmart module firmware.

However, this means that the current (or earlier) versions of the firmware for the VSI010 module are not compatible with VibroSight 2.11.0.

Improvements to the latest VSN010 device firmware includes preventing the locally administrated multicast address from going outside the high-availability seamless redundancy (HSR) ring topology, an active filter on the gateway port and blocking the MAC address 01:00:5e:00:00:05 corresponding to IP address 239.0.0.5.

Improvements to the latest VSV300 module firmware includes support for input signal inversion for position processing, improved alarm bypass (AB) and alarm reset (AR) behaviour and support for configuration file version information. Support for performing firmware updates and obtaining module status information when the module is in fail or fail safe operating modes has also been added.

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 (XMx16 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 0 3. This version of VSV300 module firmware is not compatible with configurations that were uploaded to VSV300 modules running earlier versions of firmware. Therefore, to update configured VSV300 modules in a VibroSmart DMS: (i) VibroSight System Manager's Change Firmware command should be used to update all VSV300 modules of the VibroSmart DMS with the new firmware (642-001-001-006.xtranfw), then (ii) VibroSight Configurator should be used to re-configure the VibroSmart DMS, which will require a copy of the configuration. (Updating VSV300 modules that have not been configured simply requires that the new firmware is uploaded to all VSV300 modules of the VibroSmart DMS and that the modules are subsequently configured before use.)

Updating the firmware using VibroSight System Manager.

6.1. Important notes

6.1.1. Applications using VibroSight OPC Servers require that these servers are recreated in VibroSight 2.10.1

VibroSight 2.10.1 contained an update to the VibroSight OPC Server software which means that the VibroSight OPC database file used to contain the data used by the OPC server is not compatible with earlier versions of the VibroSight OPC database file.

Therefore, when updating applications using a VibroSight OPC Server to VibroSight 2.10.1 or later, it is required to recreate the VibroSight OPC Server using the original VibroSight OPC Server configuration file (*.opcscfg). In VibroSight 2.10.1 or later System Manager:

1. Delete the OPC server.
(Select the VibroSight OPC Server under the host computer from the VibroSight Hosts tree structure in the System Explorer window and use the Delete command under the OPC Server tools in the Actions window.)
2. Recreate the VibroSight OPC Server.
(Select the host computer from the VibroSight Hosts tree structure in the System Explorer window and use the Create command under the OPC Server tools in the Actions window, using the original VibroSight OPC Server configuration file (*.opcscfg).)
3. Load the configuration on the VibroSight OPC Server.
(Select the recreated VibroSight OPC Server under the host computer from the

VibroSight Hosts tree structure in the System Explorer window and use the Load Configuration command under the OPC Server tools in the Actions window.)

4. Publish the VibroSight OPC Server.

(Select the recreated VibroSight OPC Server under the host computer from the VibroSight Hosts tree structure in the System Explorer window and use the Publish command under the OPC Server tools in the Actions window.)

6.2. 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 2.11.x until the existing VibroSight Server instance names (and any references to them) are manually edited to be 18 characters or less. See section 4.9 Length limitation of VibroSight Server instance names.

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 files (*.vssrvdb, *.vssrvcfg and optionally, *.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.




6.2.1. 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*.

6.3. 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.

6.4. Updating the VibroSight hardware

Appropriate files and tools are included in the installation package to allow VM600 cards (CPUR and XMx16) 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.

6.4.1. VM600 card firmware

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

NOTE:	For example, the default firmware directory for VM600 cards is: <code>C:\Program Files\Meggitt\VibroSight 2\Firmware\VM600</code>
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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 XMx16 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 XMx16 card firmware that is compatible with the version of VibroSight software being used.
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Table 1: VibroSight software and VM600 XMx16 card firmware compatibility

VibroSight software version CD part number	VM600 XMx16 card firmware						
	Applications (*.tgz)						
	640-010-001-002	640-010-001-003	640-010-001-004	640-010-001-005	640-010-001-006	640-010-001-007	640-010-001-008
	Base-system (*.tgz)						
	640-003-001-003	640-003-001-004	640-003-001-005	640-003-001-006	640-003-001-007	640-003-001-008	640-003-001-009
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						✓ See note 1	
2.10.0 609-004-000-018						✓ See note 1	
2.10.1 609-004-000-019						✓ See note 1	
2.11.0 609-004-000-020						✓ See note 1	✓ See note 1

Notes for Table 1 – See the next page.

Notes for Table 1

1. Updating to these versions of VM600 XMx16 card firmware requires a two step process: (i) VibroSight System Manager's Change Firmware command should be used to update the base-system firmware (640-003-001-00*.tgz) only, then (ii) the Change Firmware command should be used again to update the applications firmware (640-010-001-00*.tgz) only.

6.4.2. VibroSmart DMS device firmware

The latest VibroSmart DMS device firmware files are copied to a directory on your computer as part of the VibroSight software 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 the VibroSmart VSI010 module firmware.

Table 3 shows the compatibility between VibroSight software and the VibroSmart VSN010 device firmware.

Table 4 shows the compatibility between VibroSight software and the VibroSmart VSV300 module firmware.

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

Table 2: VibroSight software and VibroSmart VSI010 module firmware compatibility

	VibroSmart DMS device firmware	
VibroSight software version CD part number	VibroSmart VSI010 module ^{See} note 1	
	642-002-001- 001.xmsifw	642-002-001- 002.xmsifw
2.8.0 609-004-000-007	✓	
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		✓
2.10.0 609-004-000-018		✓
2.10.1 609-004-000-019	See note 2	
2.11.0 609-004-000-020		

Notes for Table 2

1. It is strongly recommended to restart a VibroSmart DMS device before updating its firmware. For example, by turning the power supply to the device off and on, or removing and re-inserting the device.

2. VibroSight 2.10.1 introduced features that were activated in order to ensure compatibility with future releases of VibroSmart DMS device firmware. However, this means that VibroSight 2.10.1 and VibroSight 2.11.0 are not compatible with the current (or earlier) versions of the VSI010 firmware. See section 5.3 VibroSmart DMS devices.

Table 3: VibroSight software and VibroSmart VSN010 device firmware compatibility

VibroSight software version CD part number	VibroSmart DMS device firmware			
	VibroSmart VSN010 device <small>See note 1</small>			
	642-004-001- 001.redboxfw	642-004-001- 002.redboxfw	642-004-001- 003.redboxfw	642-004-001- 005.redboxfw
2.8.0 609-004-000-007	✓			
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		✓	✓	
2.10.0 609-004-000-018			✓	
2.10.1 609-004-000-019			✓	
2.11.0 609-004-000-020			✓	✓

Notes for Table 3

1. It is strongly recommended to restart a VibroSmart DMS device before updating its firmware. For example, by turning the power supply to the device off and on, or removing and re-inserting the device.

Table 4: VibroSight software and VibroSmart VSV300 module firmware compatibility

VibroSight software version CD part number	VibroSmart DMS device firmware				
	VibroSmart VSV300 module <small>See note 1</small>				
	642-001-001- 001.xtranfw	642-001-001- 002.xtranfw	642-001-001- 003.xtranfw	642-001-001- 004.xtranfw	642-001-001- 006.xtranfw
2.8.0 609-004-000-007	✓				
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			✓	✓	
2.10.0 609-004-000-018				✓	
2.10.1 609-004-000-019	See note 2				
2.11.0 609-004-000-020					✓ See note 3

Notes for Table 4

1. It is strongly recommended to restart a VibroSmart DMS device before updating its firmware. For example, by turning the power supply to the device off and on, or removing and re-inserting the device.
2. VibroSight 2.10.1 introduced features that were activated in order to ensure compatibility with future releases of VibroSmart DMS device firmware. However, this means that VibroSight 2.11.0 is not compatible with the current (or earlier) versions of the VSV300 firmware. See section 5.3 VibroSmart DMS devices.
3. This version of VSV300 module firmware is not compatible with configurations that were uploaded to VSV300 modules running earlier versions of firmware. Therefore, to update configured VSV300 modules in a VibroSmart DMS: (i) VibroSight System Manager's Change Firmware command should be used to update all VSV300 modules of the VibroSmart DMS with the

new firmware (642-001-001-006.xtranfw), then (ii) VibroSight Configurator should be used to re-configure the VibroSmart DMS, which will require a copy of the configuration. (Updating VSV300 modules that have not been configured simply requires that the new firmware is uploaded to all VSV300 modules of the VibroSmart DMS and that the modules are subsequently configured before use.)

6.4.3. Updating the firmware using VibroSight System Manager


When performing VibroSight software upgrades, it is strongly recommended to systematically upgrade the firmware of VM600 XMx16 cards and VibroSmart DMS devices to the latest compatible version.

Failure to perform a necessary VibroSight-compatible VM600 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 XMx16 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.

NOTE: It is strongly recommended to restart a VibroSmart DMS device before updating its firmware. For example, by turning the power supply to the device off and on, or removing and re-inserting the device.

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 (XMx16 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 XMx16 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 VibroSight-compatible 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 XMx16 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.

6.5. Final checks

After upgrading the VibroSight software, the following checks are recommended to ensure that VibroSight has not been inadvertently modified and that it continues to operate as expected:

- Use VibroSight Configurator to run a consistency check on the configuration in order to ensure that the configuration has not been modified by any changes to the VibroSight software, internal database structure and firmware for the hardware (VM600 cards and VibroSmart DMS modules).
- Use the VibroSight Server window to check that the data acquisition, data post-processing and data logging settings are as expected. (Click **Data > Acquisition**, **Data > Post-processing** and **Data > Logging** and disable/enable the drivers, processing managers and logging as required.)

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.meggittsensingssystems.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