RELEASE NOTES

VibroSight ® software
version 3.5.0

VibroSight
Total Monitoring
Solution

Meggitt SA
Route de Moncor 4
PO Box 1616
1701 Fribourg
Switzerland

energy@ch.meggitt.com
www.meggittsensing.com/energy

REVISION RECORD SHEET

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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 systems using the versions of software described by this document, namely:

- VibroSight software version 3.5.0 (CD part number 609-004-000-042).

This document contains information about changes to the software since the previously released version (VibroSight 3.4.0), 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. 660-020-005-218A)

 *Getting started with VibroSight installation guide*
(MSS document ref. 660-010-006-221A)

 *VibroSight help*

 VM600 *XMV16 / XIO16T extended vibration monitoring card pair data sheet*
(MSS document ref. 660-020-010-208A)

 VibroSight application notes and technical notes.

Users who are familiar with VibroSight may also find it useful to refer to the release notes included in earlier versions of the software:

- VibroSight 2.9.0 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.1 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.2 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.4 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.5 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.6 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.7 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.10.0 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.10.1 (MSS document ref. 660-010-013-201A)
- VibroSight 2.11.0 (MSS document ref. 660-010-013-203A)
- VibroSight 2.11.1 (MSS document ref. 660-010-013-204A)
- VibroSight 2.11.2 (MSS document ref. 660-010-013-205A)

- VibroSight 2.11.3 (MSS document ref. 660-010-013-206A)
- VibroSight 2.11.4 (MSS document ref. 660-010-013-207A)
- VibroSight 2.11.5 (MSS document ref. 660-010-013-208A)
- VibroSight 2.11.6 (MSS document ref. 660-010-013-209A)
- VibroSight 2.12.0 (MSS document ref. 660-010-013-210A)
- VibroSight 2.12.1 (MSS document ref. 660-010-013-211A)
- VibroSight 2.12.2 (MSS document ref. 660-010-013-212A)
- VibroSight 2.12.3 (MSS document ref. 660-010-013-213A)
- VibroSight 2.12.4 (MSS document ref. 660-010-013-214A)
- VibroSight 2.12.5 (MSS document ref. 660-010-013-215A)
- VibroSight 2.12.6 (MSS document ref. 660-010-013-216A)
- VibroSight 2.12.7 (MSS document ref. 660-010-013-217A)
- VibroSight 3.0.0 (MSS document ref. 660-010-013-218A)
- VibroSight 3.1.0 (MSS document ref. 660-010-013-219A)
- VibroSight 3.2.0 (MSS document ref. 660-010-013-220A)
- VibroSight 3.3.0 (MSS document ref. 660-010-013-221A).
- VibroSight 3.4.0 (MSS document ref. 660-010-013-222A).

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,  Event Viewer,  Mimic,  Scope,  Server,  System Manager and  Vision.

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 version number has four components that provide the following information:

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

For each scheduled release of VibroSight, at least one of the first three digits changes (**x**.**x**.**x**.x). For unscheduled releases, that are occasionally required to solve urgent problems, only the fourth digit changes (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 new CPUR/IOCR card pair.

  Where CPUx card is used in this document, it refers to CPUM and CPUR cards, and where IOCx card is used in this document, it refers to IOCN and IOCR cards, unless otherwise stated.

  Where XMx16 card is used in this document, it refers to XMC16 / XIO16T, XMV16 / XIO16T and XMVS16 / XIO16T cards, unless otherwise stated.

- VibroSmart® module or VibroSmart® device – to refer to VibroSight-software compatible modules or devices that are used in a distributed monitoring system. The currently available VibroSmart modules and devices that are designed for operation with the VibroSight software are the VSI010, VSN010 and VSV30x.

  Where VibroSmart module is used in this document, it refers to the VSI010 and VSV30x modules, unless otherwise stated.

  Where VibroSmart device is used in this document, it can refer to the VSN010 device only, or to the VSI010 and VSV30x modules and the VSN010 device, unless otherwise stated.

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1 Licensing

In general, the licence required to enable purchased product options remains unchanged between update and/or maintenance level releases, for example, from version 3.4.0 to version 3.5.0. However, a new licence is always required for upgrades between major level releases, for example, from version 2.x.x to version 3.x.x.

NOTE:	VibroSight 3.5.0 is a minor level release and a new licence key file is not required for upgrades from VibroSight 3.4.0. However, a new licence key file is required for upgrades from VibroSight 2.x.x.

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

2 Features

General

2.1 Improved support for remote monitoring and diagnostics

The VibroSight software now includes improved support for remote monitoring and diagnostics – by supporting secure data replication via a data diode in order to create a near real-time replica/mirror of a remote data repository in a central diagnostics centre.

NOTE:	A data diode, also known as a unidirectional security gateway or unidirectional network, is a network device that allows data to travel in one direction only, in order to help ensure data/information/network security. Data diodes are typically used to create a physically secure one-way communication channel from one side of a network to another.

In the world of machinery monitoring and protection, remote monitoring and diagnostics is being used more and more in order to monitor multiple sites. This approach requires a central office acting as a centre of excellence/expertise, staffed by machinery monitoring and diagnostics experts who support machinery installed throughout the world. Using a central diagnostics centre has numerous advantages that can help improve operational efficiency, for example, improved response times and reduced costs due to the reduction or even elimination of the requirement to travel.

However, we live in a time when cyber attacks against industrial control systems and critical infrastructure such as power plants are increasing. Correspondingly, cyber security is becoming a priority for owners and operators of power plants, who must now consider cyber security and have an appropriate security plan or strategy in place.

NOTE:	Cyber security must be considered at a system level and various factors such as risks and awareness, human factors, training, physical security, remote access and the sharing of information must all be considered in order to ensure a robust and reliable plan/strategy.

As part of a cyber security strategy, one of the ways to provide secure access to data for a central diagnostics centre is through the use of data diodes, as shown in Figure 1.

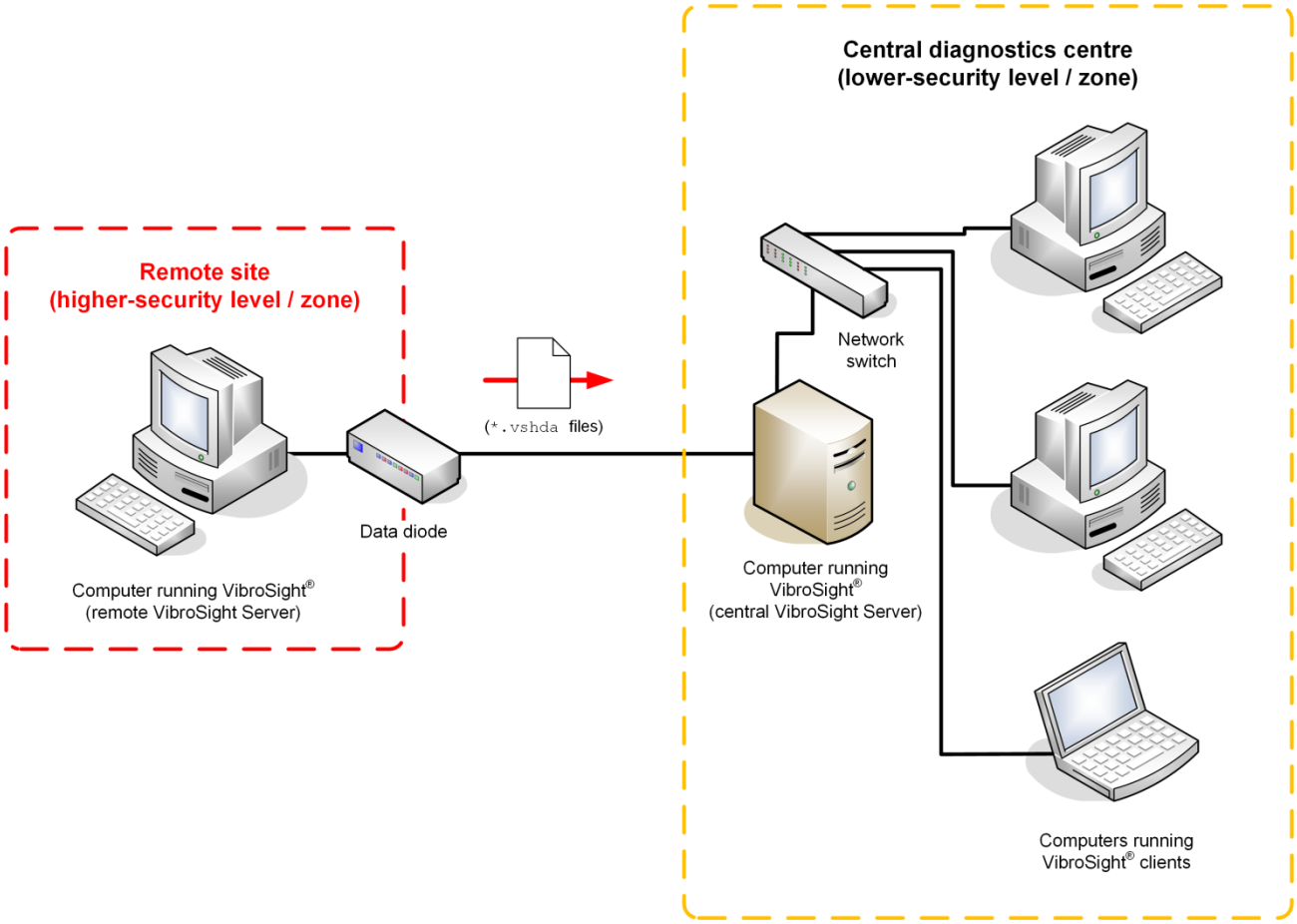

Figure 1: VibroSight support for remote monitoring and diagnostics using data diodes for increased security

In a remote site (left of Figure 1), which is a high security environment, a VibroSight Server runs as part of the locally installed condition monitoring system. From the local data repository (VibroSight historical data folder (`*.vshdf`) file) used by the VibroSight Server, VibroSight historical data archive (`*.vshda`) files can be generated in order to share data with a central diagnostics centre.

NOTE:	A remote VibroSight Server must be configured to generate VibroSight historical data archive (`*.vshda`) files at a data rate that is suitable for the application. The data update rate required for the remote monitoring and diagnostics of live data is usually of the order of minutes.

A third-party tool is used to copy the VibroSight historical data archive (`*.vshda`) files from a remote site (higher-security level) – via a secure data diode – to a central diagnostics centre (lower-security level).

NOTE:	Since data diodes are unidirectional, it is not possible to use them to gain access to and interfere in the operation of the machinery being monitored.

In the central diagnostics centre (right of Figure 1), a central VibroSight Server acts as replica/mirror data repository for a remote site. (What's the ratio/limit? For example: 1:1, 1:10 or 10:1.) That is, the central VibroSight Server automatically accesses and collates the data from the VibroSight historical data archive (`*.vshda`) files copied from a remote site. In this way, a local data repository (VibroSight historical data folder (`*.vshdf`) file) is created that is suitable for remote monitoring and diagnostics.

NOTE:	A central VibroSight Server must be configured to import VibroSight historical data archive (`*.vshda`) files from the designated local directory/folder used as the destination by the third-party file copying tool. The local data repository (VibroSight historical data folder (`*.vshdf`) file) created by a central VibroSight Server is a near real-time replica/mirror of the data from a remote data repositories.

To configure and use a remote VibroSight Server for remote monitoring and diagnostics:

In VibroSight Configurator:

1. Create a new VibroSight Server configuration (**File > New > VibroSight Server configuration**) or open and modify an existing VibroSight Server configuration (**File > Open > …**).
2. In the Hardware view, select the VibroSight Server configuration node (the root node in the hierarchical tree structure), then in the parameters window (centre), change the **Name** from the default (**VibroSight Server configuration**) to something more useful such as **VibroSight_site1**. NOTE: A remote VibroSight Server sharing data with a central VibroSight Server is identified by a unique 'configuration identifier (GUID)' which is automatically generated when a configuration is saved as a server / database and subsequently included in any associated VibroSight historical data archive (`*.vshda`) files.
3. In the Hardware view, configure the hardware (VM600 racks, VibroSmart measurement blocks, external interfaces) and post-processing of the VibroSight Server in the usual way.
4. In the Data storage view, configure the data logging and event logging (Data logging) of the remote VibroSight Server in the usual way.
5. In the Data storage view, configure the integrated data management (Data Management) of the remote VibroSight Server in the usual way.
6. In the Data storage view, at the Data Management node level, configure one or more Offline Data Storage operations to generate the VibroSight historical data archive (`*.vshda`) files that will be used to share data between this remote VibroSight Server and a central VibroSight Server, as follows:

   Right-click on the **Data Management** node, then click **New Offline data storage**. The parameters window (centre) updates to display the parameters for the Offline data storage operation.

In the parameters window (centre), configure the Offline data storage parameters in the usual way, paying special attention to the **Data file time span** and **Total data span**, and **Storage folder** and **Filename** parameters on the **General** tab, as follows:

NOTE:	For a central VibroSight Server, the data update rate depends on the frequency of availability of the VibroSight historical data archive (`*.vshda`) files.

Data file time span: Defines the maximum size of each individual VibroSight historical data archive (`*.vshda`) file in terms of time range. For example, 1 minutes worth of data (**1 min(s)**).
Total data span: Defines the maximum combined size for all of the individual VibroSight historical data archive (`*.vshda`) files. For example, 24 hours worth of data (**24 hours(s)**).
NOTE: If both the **Data file time span** and **Total data span** controls are configured in terms of time, VibroSight uses these values to calculate the number of individual data archive (`*.vshda`) files that are required and updates the data file numbering ("Data file n") in the user interface accordingly.
Together, the individual individual data archive files act as a "rolling buffer" that is continually being rewritten in order to always have the most recent data available. That is, once the number "n" of individual data archive files required to cover the Total data span is reached, each time a new individual data archive file with the latest data becomes available, the oldest individual data archive file with the oldest data is automatically deleted.
Using a "rolling buffer" to limit the number of individual data archive files in this way ensures that the latest data covering the Total data span is always available, while avoiding potential issues such as a disk-full situation.
For applications such as remote monitoring and diagnostics, this "rolling buffer" is effectively a data buffer that can be used to help compensate for potential problems with the copying of VibroSight historical data archive (`*.vshda`) files from a remote site to a central diagnostics centre, for example, due to the temporary loss of a network connection.

Storage folder and **Filename**: Defines the directory/folder and file names used by the VibroSight historical data archive (`*.vshda`) files. This information is required by the third-party tool that is used to copy the historical data archive files from the remote site to a central diagnostics centre.

7. Create and activate the remote VibroSight Server in the usual way (**File > Save as > Server / database**, then **File > Apply changes to running configuration**).

In the remote VibroSight Server user interface:

1. On the **Status** tab, under **Device drivers**, ensure that any required device drivers are enabled, such as VM600 and/or VibroSmart.
2. On the **Status** tab, under **Server features**, ensure that **Data logging manager** is enabled.

To configure and use a central VibroSight Server for remote monitoring and diagnostics:

In VibroSight Configurator:

1. Create a new VibroSight Server configuration (**File > New > VibroSight Server configuration**).
2. In the Hardware view, select the VibroSight Server configuration node (the root node in the hierarchical tree structure), then in the parameters window (centre), change the **Name** from the default (**VibroSight Server configuration**) to something more useful such as **VibroSight_centre**.
3. In the Hardware view, right-click on the **External data sources** node, then click **New VSHDA data source**. The parameters window (centre) updates to display the parameters for the external VSHDA data source.
4. In the parameters window (centre), configure the external VSHDA data source parameters, as follows:
   Name: Use the default name for the external VSHDA data source or change it, as required.
   State: An external VSHDA data source is Enabled by default but can be Disabled, as required.
   Input directory: The location of the folder containing the VibroSight historical data archive (`*.vshda`) files from a remote site, that is, the external VSHDA data files.
   NOTE: This can be a folder on the computer running the central VibroSight Server or a network directory/folder.
   Remove VSHDA files after processing: When this check box is selected, the central VibroSight Server will automatically delete a VibroSight historical data archive (`*.vshda`) file from the input folder after it has finished with it.
   NOTE: It can be useful to see the VibroSight historical data archive (`*.vshda`) files in the input folder when initially configuring and working with a central VibroSight Server. But once the system is working as expected, it is recommended to select this check box to automatically delete them in order to reduce storage requirements (avoiding potential issues such as a disk-full situation).
   Remove invalid VSHDA files: When this check box is selected, the central VibroSight Server will automatically delete from the input folder any VibroSight historical data archive (`*.vshda`) files that do not match the remote VibroSight Server's unique 'configuration identifier (GUID)' or any data archive files that are corrupted.
   NOTE: A central VibroSight Server automatically extracts and uses the remote VibroSight Server's 'configuration identifier (GUID)' from the first VibroSight historical data archive (`*.vshda`) file copied to its **Input directory** folder.
5. In the Data storage view, configure the integrated data management (Data Management) of the central VibroSight Server in the usual way.
6. Create and activate the central VibroSight Server in the usual way (**File > Save as > Server / database**, then **File > Apply changes to running configuration**).

In the central VibroSight Server user interface:

1. On the **Status** tab, under **Server features**, ensure that **VSHDA import** is enabled.
2. On the **Status** tab, under **Server features**, ensure that **Data logging manager** is enabled if the central VibroSight Server is required to log data to its data repository.
   NOTE: If the central VibroSight Server is to be used for the display of live data only, then data logging is not required.

Once a configuration is activated (applied) to a central VibroSight Server and **VSHDA import** and **Data logging manager** are enabled, the central VibroSight Server is ready to start the import and collation of data from a remote site.

NOTE:	For a central VibroSight Server, the data update rate depends on the availability of the VibroSight historical data archive (`*.vshda`) files in the input folder monitored by the central VibroSight Server.

In practice, a central VibroSight Server continuously monitors the designated directory/folder (**Input directory**) for VibroSight historical data archive (`*.vshda`) files. As the historical data archive files appear in the designated directory/folder, the VibroSight Server uses the unique 'configuration identifier (GUID)' and timestamps of the files to help organise and sort them before parsing the files and adding the data to its own local data repository (VibroSight historical data folder (`*.vshdf`) file).

In VibroSight Vision:

1. Create a new project (**File > New project**) using **VibroSight Server** as the data source, then select and connect to the central VibroSight Server (for example, **VibroSight_centre**).
2. Use the Time range window to work with live (**Live data**) or historical (**Machine states**, **Alarms** or **Custom historical**) data, as required.
   - When working with live data, the update rate for the data displayed in a plot depends primarily on the availability of the VibroSight historical data archive (`*.vshda`) files in the input folder monitored by the central VibroSight Server. For example, for `*.vshda` files with a time span of 1 minute, a live data plot is updated approximately every 1 minute.
   - When working with historical data, the data displayed in a plot depends primarily on the availability of the data in the VibroSight historical data folder (`*.vshdf`) file used as the data repository by the central VibroSight Server (which in turn depends on the availability of the VibroSight historical data archive (`*.vshda`) in the input folder monitored by the central VibroSight Server). For example, for `*.vshda` files with a time span of 10 minutes, a historical data plot displays the most recent data in 10 minutes 'chunks'.

2.2 Hydro air-gap monitoring for measurement chains providing current signals

For the VibroSight software's 'Hydro air-gap monitoring' application specific package, the Air-gap processing block previously compensated for input channels of VM600 XMx16 cards and VibroSmart VSV30x modules that were configured to use current signals (4 to 20 mA) by automatically removing a hard-coded offset of 4 mA.

This automatic compensation for current inputs has now been removed from the Air-gap processing block as the waveforms provided by the VM600 XMx16 cards and VibroSmart VSV30x modules are already compensated (that is, the VM600 XMx16 cards and VibroSmart VSV30x modules themselves implement any required offset compensation for input signals, depending on the configuration).

VibroSight Vision

2.3 Improved cursor and zooming in Polar plots

The Polar plot has been updated to use the same cursor style and behavior as the other VibroSight plots, as follows:

- The cursor now consists of a dashed radial line with a small square marker to indicate where the cursor intersects the measurement data.

NOTE:	The small square marker where the cursor intersects the measurement data makes it easier to visually locate and track the cursor and the measurement data.

The Polar plot has also been updated to use the same zoom behavior as the other VibroSight plots. That is, it now supports zooming using the mouse wheel, as follows:

- In the Polar plot or the associated trends, rotating the mouse wheel forwards will zoom in, centered around the position of the pointer. This is the mouse wheel equivalent of Frame zoom using the pointer.

  Similarly, in the associated trends, CTRL + rotating the mouse wheel forwards will zoom in vertically (that is, the X-axis remains as it was and the Y-axis zooms). This is the mouse wheel equivalent of Vertical zoom using the pointer.

  Similarly, in the associated trends, SHIFT + rotating the mouse wheel forwards will zoom in horizontally (that is, the X-axis zooms and the Y-axis remains as it was). This is the mouse wheel equivalent of Horizontal zoom using the pointer.

- In the Polar plot or the associated trends, rotating the mouse wheel backwards will zoom out, centered around the position of the pointer.

  Similarly, in the associated trends, CTRL + rotating the mouse wheel backwards will zoom out vertically (that is, the X-axis remains as it was and the Y-axis zooms).

  Similarly, in the associated trends, SHIFT + rotating the mouse wheel backwards will zoom out horizontally (that is, the X-axis zooms and the Y-axis remains as it was).

As before, using the **ESC** key or the **Zoom reset** button on the toolbar resets the plot to how it was initially displayed, that is, with no zoom.

2.4 Display of phase data in Trend, Bode and Polar plots

The Trend, Bode and Polar plots have been updated to display data in the phase chart in accordance with the selected (Phase) Qualifier, as follows:

- **Qualifier: Lag 0 to 360°** or **Lag −180 to 180°** – Phase increases looking from top to bottom of the phase chart. That is, phase lag values increase going downwards.
  (Previously, phase lag values increased going upwards.)
- **Qualifier: Lead 0 to 360°** or **Lead −180 to 180°** – Phase increases looking from bottom to top of the phase chart. That is, phase lead values increase going upwards.

2.5 Display of amplitude, phase and frequency charts in Trend, Bode and Polar plots

The Trend, Bode and Polar plots have been updated to support the display of the amplitude, phase and frequency ps in different orders of display.

When a Trend, Bode or Polar plot is displayed, the order of display of the amplitude (physical quantity), phase and frequency charts depends on the plot layout convention, as follows:

- **Plot layout convention: European (EU)** – Order of display is amplitude, phase and then frequency (looking from top to bottom). This is the default plot layout convention.
- **Plot layout convention: American (US)** – Order of display is phase, amplitude and then frequency (looking from top to bottom).

(Previously, for Trend, Bode and Polar plots, the order of display was fixed as amplitude, phase and frequency (looking from top to bottom), equivalent to the new **European (EU)** plot layout convention.

NOTE:	For Trend, Bode and Polar plots, only amplitude and phase (or phase and amplitude) charts are displayed, when no frequency data is available.

By default, the plot layout convention is **European (EU)**.

However, the plot layout convention can easily be changed using the Unit preferences and conventions (previously known as Unit preferences). For example:

1. In VibroSight Vision, click **Tools > Unit preferences and conventions**.
   The Unit preferences and conventions window is displayed.
2. In the Unit preferences and conventions window, ensure that an editable **Unit set** is selected, that is, not **Metric** and not **Imperial**.
   The standard **Metric** and **Imperial** unit sets included with VibroSight are read-only and cannot be edited.
   However, customisable unit sets can be created by the user, for example, by copying a standard unit set or importing a unit set from another VibroSight installation. These non-standard unit sets can be customised as required by a user.
3. In the Unit preferences and conventions window, use the **Plot layout convention** control (bottom) to select **European (EU)** or **American (US)**, as required.

4. Click **OK** to save any changes, then **Exit** (close) VibroSight Vision.
   When unit references are changes, the VibroSight software must be restarted in order for the changes to take effect.
5. Start VibroSight Vision and create a Trend, Bode and/or Polar plot as usual.
   The order of display of the amplitude, phase and frequency charts is as per the configured plot layout convention.

2.6 Displaying data against speed in Polar plots

The Polar plot and the optimised data handling implemented by the VibroSight software have been updated to support the improved plotting of measurement data against speed.

More specifically, when a Polar plot is configured as **Speed** (as opposed to **Time**) so that the measurement data (Radial-axis and Angular-axis) is displayed against speed, VibroSight's optimised data handling algorithm now reduces (decimates) and optimises the data selected for display more intelligently in order to increase the number of points displayed in the plot at any one time in order to provide an improved 'picture' of measurement data against speed.

(Previously, VibroSight's optimised data handling algorithm (decimation) was supported by the Polar plot for measurement data against time only.)

2.7 Improved Spectrogram plots

The Spectrogram plot has been updated to support the improved plotting and analysis of measurement data in the following ways.

- The Spectrogram plot now includes more spectra.
  A hard-coded maximum of 250 spectra can now be included in a Spectrogram plot in order to generate a more precise plot – a compromise between plotting and system performance.
  (Previously, a soft-coded maximum of typically 42 spectra was included in a Spectrogram plot, that is, *display resolution width (in pixels) / 45*. For example, 1920 pixels / 45 ≈ 42.)
- The Spectrogram plot now uses an improved colour scale to display the physical quantity in order generate a more precise plot and allow more detailed analyses.
  A different palette (colour scheme) is now used with darker colours indicating lower values (black = min.), brighter colours indicating higher values (grey = max.) and white indicating no value.
  A different gradient (colour change) is now used with more colours and a more gradual change in colours that provides more information.

2.8 Improved Waterfall/Cascade plots

The Waterfall/Cascade plot has been updated to support the improved plotting and analysis of measurement data in the following way.

- The Waterfall/Cascade plot now includes more spectra.
  A hard-coded maximum of 250 spectra can now be included in a Waterfall/Cascade plot in order to generate a more precise plot – a compromise between plotting and system performance.
  (Previously, a soft-coded maximum of typically 42 spectra was included in a Waterfall/Cascade plot, that is, *display resolution width (in pixels) / 45*. For example, 1920 pixels / 45 ≈ 42.)

2.9 Improved data export

Data export from VibroSight Vision has been improved to now use the default unit or units specified for the physical quantity or quantities displayed in a plot.

NOTE: The units and qualifiers required to be displayed in a plot can be changed as follows:

- Globally for all plots – using the Unit preferences and conventions (previously known as Unit preferences), accessed by clicking **Tools > Unit preferences and conventions**.
- Locally to individual plots – using the Plot properties, accessed by right-clicking a plot and clicking **Plot properties**, and then changing the Unit and/or Qualifier for the appropriate axis or axes.

NOTE: The standard **Metric** and **Imperial** unit sets included with VibroSight are read-only and cannot be edited.
However, customisable unit sets can be created by the user, for example, by copying a standard unit set or importing a unit set from another VibroSight installation. These non-standard unit sets can be customised as required by a user.

(Previously, data export from VibroSight Vision used the ‘reference’ units specified for the physical quantities displayed in a plot. ‘Reference’ units are the units used internally by VibroSight for working with data.)

3 Solved problems and bug fixes

General

3.1 Improvements and bug fixes

General stability improvements across the VibroSight 3.5.0 software.

4 Known issues

4.1 Display of timestamps in VibroSight Vision

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.

4.2 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.

4.3 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.

NOTE:	VibroSight allows only alphanumeric characters (A to Z, a to z, 0 to 9), the hyphen-minus character (-) and the underscore character (_) to be used for VibroSight Server names.

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 file names used for a VibroSight Server database file (`*.vssrvdb` or `*.db)` and a VibroSight Server configuration file (`*.vssrvcfg` or `*.config)` should be updated (and manually edited in the VibroSight configuration file) to be 18 characters or less. Changes may also be required in any VibroSight software that references the server instance name, such as VibroSight Vision projects.

Where used, the automated data management commands and operations that append a timestamp (_yyyyMMddHHmmss) to the Server instance name reduces the number of file name characters that remain available for VibroSight Server instance names to three. Alternatively, the server instance name can be shorted after the data repository command or operation is complete.

Also, depending on the VibroSight Server data repository (database) file names used and any truncation performed by VibroSight, it is possible that servers are created with names that contain non-allowed characters (such as spaces), with the result that these servers will not be accessible by VibroSight software clients. Similarly, duplicate VibroSight Server names are also possible.

NOTE:	Choose appropriate VibroSight Server names in order to avoid name conflicts arising due to truncation and/or additional data repositories being created during automatic data management. This is particularly important for systems with automated data management and system backup procedures that can generate VibroSight Server data repositories with different file names.

4.4 Display of timestamps in VibroSight clients other than VibroSight Vision

Although VibroSight Vision now supports the display of timestamps (date and time) as either Site time, UTC time or Local computer time, all other VibroSight client software modules continue to display timestamps in local computer time only (that is, the date and time according to the local clock of the computer running the VibroSight software module).

4.5 Display of devices in VibroSight System Manager

In the System Explorer window of VibroSight System Manager, the Devices tree-view does not always update correctly to show all of the devices (VM600 cards and VibroSmart devices) available on the network.

In particular, this has been seen when changing the firmware of a device, and can persist even after a refresh (using the **Refresh** toolbar button or **View > Refresh**).

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

- Wait a few minutes and refresh again.
- Restart VibroSight System Manager.

4.6 VibroSight Mimic backwards compatibility

VibroSight 2.10.0 contained significant improvements and changes, including a separate VibroSight Mimic client software module for mimics (that were previously available in VibroSight Vision). As a result, VibroSight Vision mimics created with VibroSight 2.9.7 or earlier are not compatible with VibroSight 2.10.0 or later.

VibroSight 2.11.0 contained significant improvements and changes to the VibroSight Mimic client software module. As a result, VibroSight Vision mimics created with VibroSight 2.10.1 or earlier are not compatible with VibroSight 2.11.0 or later.

VibroSight 2.11.5 contained significant improvements to the VibroSight Mimic project framework to include version information, in order to improve the compatibility between projects created with different versions of VibroSight Mimic and eliminate the requirement for the recreation of Mimics. Starting with VibroSight 2.11.5, Mimic projects automatically detect any changes in the VibroSight Mimic software that affect project compatibility, inform the user and update the project as required.

NOTE:	VibroSight 2.11.5 is also able to open and work with Mimic projects created with VibroSight 2.11.0 or later, if the corresponding database had been updated as required.

NOTE:	When updating existing machinery monitoring projects created with VibroSight 2.12.x to VibroSight 3.x.x, a new data repository created by copying a VibroSight database (`*.vssrvdb`) to a VibroSight historical data folder (`*.vshdf`) must use the same server file name as the existing server in order for existing VibroSight Mimics to maintain links with the data repository and continue to work (without manual corrections). In addition, the VibroSight Server using the new data repository must be running before the existing VibroSight Mimics are run for the first time, after the update.

4.7 VibroSight OPC Clients not recovering

When a VibroSight OPC Client is being used to import information from an external OPC server into a VibroSight system and the external OPC server becomes unavailable, the VibroSight OPC Client may not always recover automatically when the OPC server becomes available again.

This is typically characterised by the VibroSight OPC Client continuing to show connection error messages even when OPC server is available and can result in permanent loss of the imported data if not noticed.

NOTE:	The external OPC data can be permanently lost if it is not imported into VibroSight as expected. Any VibroSight system feature or configuration element relying on the imported OPC data will not behave as expected, for example, alarms, machinery operating conditions and data logging rules.

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

- Stop and restart the VibroSight OPC Client from either the VibroSight Server (**Data > Acquisition > OPC Device Driver**) or VibroSight System Manager.
- Stop and restart the VibroSight Server, if required.

4.8 Duplicate events

For VibroSight systems using VM600 XMx16 cards, VibroSight Event Viewer retrieves all of the event information available from the data buffers on the cards.

For VibroSight systems using VibroSmart modules, VibroSight Event Viewer retrieves the event information available from the current time only (no buffered events).

Accordingly, for a VibroSight system using VM600 XMx16 cards, there is the possibility of duplicate events being listed in the Event Viewer, particularly for VibroSight systems being operated without an NTP server (where events are not recognised as duplicates due to time drift).

4.9 VibroSight Server status indicators

The status indicators (performance counter monitors) on the Status tab of the new VibroSight Server are not correctly displayed and updated when an NVIDIA WMI driver is installed on the same computer as the VibroSight Server.

NOTE:	The NVIDIA Enterprise Management Toolkit (NVWMI) is a graphics and display management and control technology that interfaces to Microsoft's Windows Management Instrumentation (WMI) infrastructure, specific to NVIDIA graphics processing units (GPUs).

This is because NVIDIA WMI prevents the Microsoft .NET Framework from obtaining the required counter values from the underlying operating system / computer.

4.10 XMx16 card pre-logging

For an XMx16 card pair, if Dynamic Input Channel 16 is used as an input to a Dynamic Processing Block that is used as an input to a Dual Shaft Relative Processing Block which is configured to provide an Orbit and/or Full Spectrum output, then any pre-logging configured for the principal mode Waveform and/or Spectrum of Dynamic Input Channel 16 will not actually log any of the data from the same pre-logging scope.

4.11 Problems creating new VibroSight OPC Servers

Users who have upgraded from an earlier version of VibroSight to a later version (for example, from VibroSight 2.x.x or 3.0.0 to VibroSight 3.1.0) can experience problems when creating new VibroSight OPC Servers.

Such problems are typically characterised by the **OPC Server Create** command in VibroSight System Manager displaying an error message such as "`The type initializer for 'ch.VibroMeter.Xms.OpcServer.Utils.OpcServerUtils' threw an exception`".

This typically occurs because an earlier version of the `OpcServer.config` file required by VibroSight OPC Servers is being used by the later installation of VibroSight, which can happen in one of two ways:

- When a later version of VibroSight 3.x.x is installed on a computer that was running an earlier version of VibroSight 2.x.x, the VibroSight installer automatically checks existing VibroSight folders (such as **C:\ProgramData\Meggitt\VibroSight 2**) in order to copy relevant system and/or user preference files across to the new VibroSight folders (such as **C:\ProgramData\Meggitt\VibroSight**), including an earlier `OpcServer.config` file.
- When VibroSight 3.1.0 is installed on a computer that was running VibroSight 3.0.0, the creation of a VibroSight OPC installer using VibroSight 3.0.0 automatically created an earlier `OpcServer.config` file.

As shown below, the first few lines of a typical `OpcServer.config` file contains version specific information that is incompatible with later versions of VibroSight:

```
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <configSections>
    <section name="opcServersConfiguration"
type="ch.VibroMeter.Xms.OpcServer.Utils.OpcServersSystemConfiguration,
XmsOpcServerUtils, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=2db2a2387bac0a0a" />
  </configSections>
…
</configuration>
```

So for users who have upgraded from an earlier version of VibroSight to a later version, if problems are experienced when creating new VibroSight OPC Servers, the workaround is to:

1. Use an XML-compatible text editor program to edit the `OpcServer.config` file and remove the version specific information. That is, change the line containing the `section name` from:

```
<section name="opcServersConfiguration"
type="ch.VibroMeter.Xms.OpcServer.Utils.OpcServersSystemConfiguration,
XmsOpcServerUtils, Version=2.0.0.0, Culture=neutral,
PublicKeyToken=2db2a2387bac0a0a" />
```

to:

```
<section name="opcServersConfiguration"
type="ch.VibroMeter.Xms.OpcServer.Utils.OpcServersSystemConfiguration,
XmsOpcServerUtils, Culture=neutral, PublicKeyToken=2db2a2387bac0a0a" />
```

2. Restart the computer.
   Note: The computer must be restarted to ensure that the edited version of the `OpcServer.config` file is used (and not some other version from cache memory).

3. Use the **OPC Server Create** command in VibroSight System as required.

NOTE:	The manual migration of existing VibroSight OPC Servers to VibroSight 3.x.x is described in detail in the “VibroSight OPC Server migration” section of the latest *Getting started with VibroSight installation guide*.

4.12 Potential TCP port 50000 conflict

The VibroSight Host Service (XmsHostService.exe) requires TCP port 50000 for communication with the VibroSight software. So if the computer running the VibroSight software is running other software which also requires TCP port 50000, this results in a TCP port conflict which can prevent VibroSight (or the other software) from running.

During the VibroSight software installation process, the VibroSight 3.4.x or later installer will typically detect other software on the computer that is using TCP port 50000 and report this. For example: “The port 50000 cannot be used. Please close all application using this port before manually starting the host service.”

Accordingly, any potential TCP port 5000 conflict should be resolved before the VibroSight software can be successfully installed and run.

5 Compatibility

As part of the VibroSight software installation process, the VibroSight installer will automatically check to see if the required Microsoft .NET Framework, Microsoft Visual C++ Redistributable Package and OPC Core Components Redistributable software are pre-installed on the computer:

- The required Microsoft Visual C++ Redistributable Package (see section 5.1.3) must be manually installed before VibroSight can be installed. If it is not detected, then the VibroSight installer will exit the installation and VibroSight is not installed.
- The required Microsoft .NET Framework (see section 5.1.2) is automatically installed by the VibroSight installer if it is not detected.
- The required OPC Core Components Redistributable (see section 5.1.4) software is automatically installed on the computer by the VibroSight installer if it is not detected.

NOTE: Refer 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.

5.1 VibroSight software

VibroSight 3.5.0 is a minor level release and replaces VibroSight 3.4.0.

Compatibility with existing VibroSight data repositories (databases) is achieved using a specific data migration process from any existing databases based on Sybase SQL Anywhere (`*.vssrvdb`) to data repositories based on the VibroSight historical data repositories (VibroSight historical data folder (`*.vshdf`) for operation with a VibroSight Server (live data) and VibroSight historical data archive (`*.vshda`) for operation with historical data).

Compatibility with existing VibroSight machinery monitoring projects using VibroSight OPC Servers that were created using VibroSight 2.12.7 or earlier is achieved using a specific VibroSight OPC Server migration process for these VibroSight OPC Servers.

Therefore, it is important to note that:

- New machinery monitoring projects created with VibroSight 3.x.x will automatically use VibroSight historical data repositories.
- Existing machinery monitoring projects created with versions of VibroSight earlier than VibroSight 3.0.0 must be manually migrated from Sybase SQL Anywhere databases to VibroSight historical data repositories before they can be used with VibroSight 3.x.x.
- Existing machinery monitoring projects using VibroSight OPC Servers that were created with versions of VibroSight earlier than VibroSight 2.12.7 must manually migrate their VibroSight OPC Servers before they can be used with VibroSight 3.x.x.
  It is very important to note that migrating a VibroSight OPC Server from VibroSight 2.12.7 or earlier to VibroSight 3.x.x requires that certain steps must be performed using the existing version of VibroSight (that is, VibroSight 2.12.7 or earlier) BEFORE it is removed (uninstalled).

NOTE:	The manual migration of an existing machinery monitoring project to VibroSight 3.x.x is described in detail in the “Data migration” and “VibroSight OPC Server migration” sections of the latest *Getting started with VibroSight installation guide*.

5.1.1 Microsoft Windows operating systems

VibroSight 3.x.x is compatible with 32-bit versions and 64-bit versions of Microsoft ® Windows ® operating systems.

NOTE:	Starting with VibroSight 3.0.0, VibroSight software is now available as 64-bit software for 64-bit Windows and 32-bit software for 32-bit Windows. The 64-bit version of VibroSight can be installed on 64-bit Windows computers only. The 32-bit version of VibroSight can be installed on 32-bit Windows computers only. Only a single version of VibroSight can be installed and exist on a computer at any one time

See the Appendix of these release notes for further information on VibroSight software and Windows operating system compatibility.

5.1.2 Microsoft .NET Framework

For most Windows operating systems, VibroSight 3.4.0 or later requires that the Microsoft .NET Framework 4.7.1 or later is installed.

NOTE:	VibroSight 3.4.0 or later requires Microsoft .NET Framework 4.7.1.

If the required Microsoft .NET Framework is not pre-installed, then the VibroSight installer will detect this and automatically install it as part of the VibroSight software installation process.

See the Appendix of these release notes for further information on VibroSight software and Microsoft .NET Framework requirements.

5.1.3 Microsoft Visual C++ Redistributable Package

VibroSight 3.x.x requires that the Microsoft Visual C++ Redistributable Package for Visual Studio 2015 is installed, in order to install and register the Visual C++ libraries used by VibroSight.

NOTE:	The 64-bit version of the Microsoft Visual C++ Redistributable Package (“Microsoft Visual C++ 2015 Redistributable (x64)”) must be installed on 64-bit Windows computers. The 32-bit version of the Microsoft Visual C++ Redistributable Package (“Microsoft Visual C++ 2015 Redistributable (x86)”) must be installed on 32-bit Windows computers.

If the required Microsoft Visual C++ Redistributable Package is not pre-installed, then the VibroSight installer will detect this and exit the installation.

5.1.4 OPC Core Components Redistributable

VibroSight 3.x.x requires that the OPC Core Components Redistributable is installed, in order to configure and run VibroSight OPC Clients and VibroSight 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.

NOTE:	The 64-bit version of the OPC Core Components Redistributable (“OPC Core Components Redistributable (x64) 106.0”) must be installed on 64-bit Windows computers. The 32-bit version of the OPC Core Components Redistributable (“OPC Core Components Redistributable (x86) 106.0”) must be installed on 32-bit Windows computers.

If the required OPC Core Components Redistributable is not pre-installed, then the VibroSight installer will detect this and automatically install it as part of the VibroSight software installation.

5.1.5 Sybase SQL Anywhere 11 software

Starting with VibroSight 3.0.0, the VibroSight historical data repositories (VibroSight historical data folder (`*.vshdf`) for operation with a VibroSight Server (live data) and VibroSight historical data archive (`*.vshda`) for operation with historical data) are exclusively used for the required data repositories.

A VibroSight database based on Sybase SQL Anywhere (`*.vssrvdb`) can no longer be used as a data repository. Accordingly, the Sybase SQL Anywhere 11 database software is no longer included and distributed as part of the VibroSight software.

NOTE:	VibroSight 3.x.x exclusively uses data repositories based on the VibroSight historical data system. VibroSight 2.12.7 used data repositories based on Sybase SQL Anywhere databases and introduced initial support for working with data repositories based on the VibroSight historical data repositories for data analysis. VibroSight 2.12.6 or earlier exclusively used data repositories based on Sybase SQL Anywhere databases.

NOTE:	The manual migration of an existing machinery monitoring project to VibroSight 3.x.x is described in detail in the “Data migration” section of the latest  *Getting started with VibroSight installation guide*.

5.1.6 VM600 CMS software

The VM600 CMS software from Meggitt Sensing Systems uses Sybase SQL Anywhere 8. Both Sybase SQL Anywhere 8 (VM600 CMS) and Sybase SQL Anywhere 11 (VibroSight) can be installed on the same computer.

However, while SQL Anywhere 8 and SQL Anywhere 11 can be installed on the same computer and run at the same time for standard database operations, certain administrative tasks are mutually exclusive and may block one another.

More specifically, all operations that refer to Sybase SQL (a command-line Interactive SQL utility) in the background could be directed to the wrong version of Sybase SQL Anywhere. For example, this impacts all user operations and system operations involving the creation, copying and updating of databases.

NOTE:	It is recommended to install and use VibroSight 3.x.x or earlier on a computer that does not have VM600 CMS software installed.

5.1.7 SIMATIC Step 7 software

The SIMATIC Step 7 software from Siemens typically uses Sybase SQL Anywhere 9. Both Sybase SQL Anywhere 9 (SIMATIC Step 7) and Sybase SQL Anywhere 11 (VibroSight) can be installed on the same computer.

However, while SQL Anywhere 9 and SQL Anywhere 11 can be installed on the same computer, they cannot run at the same time.

More specifically, if SIMATIC Step 7 and VibroSight are both installed, certain administrative tasks, such as all user operations and system operations involving the creation, copying and updating of data repositories (databases), may not work correctly. If this behaviour is seen, the recommended workaround is to manually change or remove the SQLANY environmental variable in order to allow VibroSight to work correctly.

Note: The SQLANY environment variable is used to contain the directory where Sybase SQL Anywhere is installed.

NOTE:	It is recommended to install and use VibroSight 3.x.x or earlier on a computer that does not have SIMATIC Step 7 software installed.

5.1.8 Dell Backup and Recovery software

Some Dell™ computers running versions of Dell Backup and Recovery software can experience problems running the VibroSight software, characterised by the VibroSight software not running or running incorrectly. This is because the Dell Backup and Recovery software can use a version of SQLite and associated libraries (DLLs) that prevent the VibroSight Host Service from running correctly.

For example, VibroSight clients can stop running (crash), VibroSight clients can be unable to connect to data sources and/or VibroSight System manager may not display all of the commands expected to be available in the Actions window.

If this behaviour is seen, the recommended workaround is to uninstall the Dell Backup and Recovery software.

NOTE:	It is recommended to install and use VibroSight 3.x.x or earlier on a computer that does not have Dell Backup and Recovery software installed.

5.1.9 MatrikonOPC software

Both MatrikonOPC™ software and the VibroSight software can be installed and run on the same computer.

However, if the MatrikonOPC software is installed after the VibroSight software, this can result in problems related to credentials (access rights). These problems are typically characterised by an unhandled exception in VibroSight Configurator when trying to configure an OPC device in the Hardware view or an unhandled exception in a VibroSight Server when trying to handle/process OPC data.

MatrikonOPC software and the VibroSight software must be installed on the same computer in the following order:

1. Install the MatrikonOPC software.
2. Install the Microsoft Visual C++ Redistributable Package for Visual Studio 2010 (version 40219). Note: This redistributable package is required by the MatrikonOPC software.
3. Install the Microsoft Visual C++ Redistributable Package for Visual Studio 2015 (version 23026 or later). Note: This redistributable package is required by the VibroSight software.
4. Install VibroSight 3.x.x.

5.2 VM600 cards

5.2.1 Firmware

There are no firmware updates for VM600 cards corresponding to VibroSight 3.5.0.

The latest firmware for the CPUR remains:

- Base System: base-system-640-014-001-002.tgz
- Applications: applications-640-015-001-002.tgz.

The latest firmware for the XMC16, XMV16 and XMVS16 remains:

- Base System: base-system-640-003-001-016.tgz
- Applications: applications-640-010-001-016.tgz.

Therefore, for current versions of VM600 cards, firmware upgrades are not required.

5.3 VibroSmart devices

5.3.1 Firmware

There are no firmware updates for VibroSmart modules and devices corresponding to VibroSight 3.5.0.

The latest firmware for the VSI010 module remains:

- 642-002-000-009.xmsifw.

The latest firmware for the VSN010 device remains:

- 642-004-000-011.redboxfw.

The latest firmware for the VSV30x module remains:

- 642-001-000-015.xtranfw.

Therefore, for current versions of VibroSmart modules and devices, firmware upgrades are not 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 (XMx16 cards and VibroSmart modules and devices) before starting a VibroSight system upgrade, in order to establish if any firmware updates are also required. See 6.2.3 Updating the firmware using VibroSight System Manager.

NOTE:	It is strongly recommended to ensure that a copy of the configuration for a VibroSmart is available before updating the firmware of any of the VibroSmart modules used in the distributed monitoring system. See 6.2.3 Updating the firmware using VibroSight System Manager.

6.1 VibroSight software user settings

The VibroSight Software generates and uses some files on the storage device of the computer running VibroSight to keep track of user-configurable settings, so that these settings are remembered and applied for the VibroSight installation.

These settings files have an `.xmssettings` file name extension and on a computer running Windows 7, can be found here:

C:\Users*username*\AppData\Roaming\Meggitt\VibroSight, where *username* is the Windows account name.

For example, the `VibroSightVision.xmssettings` file records the user-configurable default settings for VibroSight Vision, such as default settings for plots.

NOTE:	VibroSight software updates and upgrades do not replace these settings files, so: • For a computer on which VibroSight was previously installed, an update, upgrade or a re-installation of VibroSight will continue to use the previous defaults recorded in the `.xmssettings` files. • For a computer on which VibroSight was not previously installed, the installation of VibroSight will generate and use new `.xmssettings` files, which use the latest VibroSight software defaults. If a settings file is deleted for any reason, VibroSight will generate and use a new settings file, which uses the latest VibroSight software defaults.

6.2 Updating VibroSight-compatible hardware

Appropriate files and tools are included in the installation package to allow VM600 cards (XMx16) and VibroSmart devices (VSI010, VSN010 and VSV30x) to be updated to the latest firmware, in order to take advantage of improvements to the VibroSight software.

Updating the firmware VM600 cards or VibroSmart devices is a special task that can, if used unintentionally or incorrectly, lead to malfunctioning of the device and affect proper function of data acquisition.

During the firmware update of a device, the card or module being updated cannot provide its normal machinery monitoring functions because its outputs (alarms and relays) can go to undetermined states, irrespective of how they have been configured.

For VibroSmart modules, the machinery being monitored is not protected for the duration of a firmware update and the restart (reboot) that is triggered automatically after the firmware update (which can take up to 5 minutes).

NOTE:	It is highly recommended that firmware updates are only performed in accordance with the operating procedures for the machinery being monitored and that appropriate precautions are taken at the control system level (such as DCS or PLC). For example, alarms and relay outputs should be ignored (bypassed or inhibited) in order to avoid false trips of the machinery being monitored.

6.2.1 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: `C:\Program Files\Meggitt\VibroSight\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 CPUR card hardware (that is, CPUR firmware).

Table 2 shows the compatibility between VibroSight software and VM600 XMx16 card hardware (that is, XMC16, XMV16 and XMVS16 firmware).

NOTE:	It is strongly recommended to use the most recent version of the VM600 CPUR firmware and VM600 XMx16 firmware that is compatible with the version of VibroSight software being used.

Table 1: VibroSight software and VM600 CPUR firmware compatibility

	VM600 CPUR firmware. See note 1	
VibroSight software version CD part number	Base-system (`*.tgz`)	
	640-014-001-001	640-014-001-002
	Applications (`*.tgz`)	
	640-015-001-001	640-015-001-002
2.12.7 609-004-000-036	✓ See note 2	✓ See note 3
3.0.0 609-004-000-037	✓	✓
3.1.0 609-004-000-038	✓	✓
3.2.0 609-004-000-039	✓	✓
3.3.0 609-004-000-040	✓	✓
3.4.0 609-004-000-041	✓	✓
3.5.0 609-004-000-042	✓	✓

Notes for Table 1

1. VM600 CPUR firmware is packaged and distributed as a *.tgz* file (a compressed archive file format) with PNRs such as *640-014-001-xxx* for the Base System and *640-015-001-xxx* for the (Applications) Firmware. In these PNRs, the *xxx-xxx-001-xxx* denotes the firmware is packaged in the tgz file format.

After the *.tgz* file is unpacked by VibroSight System Manager and the firmware is uploaded to a VM600 CPUR card, the dialog box displayed by the VibroSight System Manager's Change Firmware command shows the current version of firmware using PNRs such as *640-014-000-xxx* for the Base System and *640-015-000-xxx* for the Firmware, which correspond to the actual unpacked firmware that is running on the card.

2. This is the first official release of VM600 CPUR firmware and includes features such as the management of XMx16 card configurations for applications such as control systems and the implementation of the PROFIBUS protocol for the fieldbus interfaces. A firmware upgrade is required in order to run VibroSight 2.12.7 or later.

3. This version of VM600 CPUR firmware includes improvements such as changing the PROFIBUS polling rate for the Modbus server to 100 ms (was 200 ms) and fixing a known time counter wraparound (overflow) issue. A firmware upgrade is strongly recommended in order to run VibroSight 3.4.0 or later.

Table 2: VibroSight software and VM600 XMx16 firmware compatibility

	VM600 XMx16 firmware. See note 1				
VibroSight software version CD part number	Base-system (`*.tgz`)				
	640-003-001-011	640-003-001-012	640-003-001-013	640-003-001-014	640-003-001-016
	Applications (`*.tgz`)				
	640-010-001-011	640-010-001-012	640-010-001-013	640-010-001-014	640-010-001-016
2.12.3 609-004-000-030	✓ See note 2				
2.12.4 609-004-000-032	✓				
2.12.5 609-004-000-033	✓	✓ See note 3			
2.12.6 609-004-000-034	✓	✓			
2.12.7 609-004-000-036			✓ See note 4		
3.0.0 609-004-000-037				✓ See note 5	
3.1.0 609-004-000-038				✓	
3.2.0 609-004-000-039				✓	
3.3.0 609-004-000-040					✓ See note 6
3.4.0 609-004-000-041					✓
3.5.0 609-004-000-042					✓

Notes for Table 2 (see the next page)

Notes for Table 2

1. VM600 XMx16 firmware is packaged and distributed as a *.tgz* file (a compressed archive file format) with PNRs such as *640-003-001-xxx* for the Base System and *640-010-001-xxx* for the (Applications) Firmware. In these PNRs, the *xxx-xxx-001-xxx* denotes the firmware is packaged in the tgz file format.

After the *.tgz* file is unpacked by VibroSight System Manager and the firmware is uploaded to a VM600 XMx16 card, the dialog box displayed by the VibroSight System Manager's Change Firmware command shows the current version of firmware using PNRs such as *640-010-000-xxx* for the Firmware and *640-003-000-xxx* for the Base System, which correspond to the actual unpacked firmware that is running on the card.

2. This version of VM600 XMx16 firmware introduces support for 1 s time-boxed peak-hold processing (that is, spectral data aggregation).

3. This version of VM600 XMx16 firmware implements improved multi-rate digital resamplers (sample rate converters). A firmware upgrade is recommended but not required in order to run VibroSight 2.12.5 or 2.12.6.

4. This version of VM600 XMx16 firmware improves support for faster live data: 100 ms card update rate and up to 100 ms VibroSight Vision refresh rate. It also allows a VM600 XMx16 card to be managed by a VM600 CPUR card ("rack controller"), eliminating the XMx16 card's requirement for a VibroSight Server. A firmware upgrade is required in order to run VibroSight 2.12.7.

5. This version of VM600 XMx16 firmware adds support for customer-specific functionality that is enabled by a customer-specific VibroSight software licence. A firmware upgrade is required in order to run VibroSight 3.0.0 or later.

6. This version of VM600 XMx16 firmware includes relaxed constraints for dynamic data retention time, that is, optimised memory to reduce the possibility of missing data in data intensive VibroSight applications running on less powerful computers. A firmware upgrade is required in order to run VibroSight 3.3.0 or later.

6.2.2 VibroSmart device firmware

The latest VibroSmart 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 devices is: `C:\Program Files\Meggitt\VibroSight\Firmware\VibroSmart`

The firmware files for a VibroSmart device can be found in the appropriate subfolder and identified by their .*fw file name extension. For example, the `VSV30x` subfolder contains the firmware for use by VSV30x modules. Any additional firmware updates received from Meggitt Sensing Systems should also be stored in these directories.

Table 3 shows the compatibility between VibroSight software and the VibroSmart VSI010 firmware.

Table 4 shows the compatibility between VibroSight software and the VibroSmart VSN010 firmware.

Table 5 shows the compatibility between VibroSight software and the VibroSmart VSV30x firmware.

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

Table 3: VibroSight software and VibroSmart VSI010 firmware compatibility

	VSI010 firmware (`*.xmsifw`). See note 1			
VibroSight software version CD part number	642-002 -000-006	642-002- 000-007	642-002- 000-008	642-002- 000-009
2.12.0 609-004-000-027	✓ See note 2			
2.12.1 609-004-000-028		✓ See note 2		
2.12.2 609-004-000-029		✓		
2.12.3 609-004-000-030			✓ See note 2	
2.12.4 609-004-000-032			✓	
2.12.5 609-004-000-033			✓	
2.12.6 609-004-000-034				✓ See note 2
2.12.7 609-004-000-036				✓
3.0.0 609-004-000-037				✓
3.1.0 609-004-000-038				✓
3.2.0 609-004-000-039				✓
3.3.0 609-004-000-040				✓
3.4.0 609-004-000-041				✓
3.5.0 609-004-000-042				✓

Notes for Table 3 (see the next page)

Notes for Table 3

1. VibroSmart VSI010 firmware is distributed as a single *.xmsifw* file (a proprietary file format) with a PNR such as *642-xxx-000-xxx*. In these PNRs, the *xxx-xxx-000-xxx* denotes that the firmware is not packaged (compressed or archived). VibroSight System Manager always uses and displays information about VibroSmart device firmware using PNRs such as *642-xxx-000-xxx*, which correspond to the actual firmware that is running on the device.

2. Updating to this version of VibroSmart VSI010 firmware requires a specific process:

Notes:

For a VibroSmart consisting of different types of device, the devices should be updated in the following order: first VSN010 real-time Ethernet switches, then VSV30x vibration monitoring modules and finally VSI010 communications interface modules. In addition, VibroSight System Manager should be exited (closed) and restarted after updating the firmware for each type of device, before continuing. And after updating the firmware, the configuration on the VibroSmart devices should be re-applied (re-activated) and the VibroSmart devices should be restarted.

Procedure:

(1) Ensure that a copy of the configuration for the VibroSmart is available before updating any device firmware. For example, using the currently installed version of VibroSight (that is, before any updates to the VibroSight software corresponding to updates to VibroSmart devices), VibroSight Configurator can be used to obtain a copy of the configuration as follows:
• For a VibroSmart using a VibroSight Server, the **File > Open > Server / Database** command can be used to read the configuration from the VibroSight Server.
• For a VibroSmart not using a VibroSight Server (that is, a “stand-alone” VibroSmart), the **File > Open > Device** command can be used to read the configuration directly from the VibroSmart modules.
Then the **File > Save As > File** command can be used to store a copy of the configuration for the VibroSmart.

(2) Start VibroSight System Manager, select the device or devices of the same type to be updated (for example, VSI010 modules) and run the Change Firmware command.
When updating multiple VibroSmart devices of the same type to use the same firmware, CTRL+click or SHIFT+click can be used to select multiple devices in the Devices tree structure of the System Explorer window. This way, when the Change Firmware command is run, all of devices that were selected will be updated at the same time. Otherwise, each device must be selected and updated individually.

(3) When the VibroSmart Module(s) Firmware Upgrade window displays a “Firmware upgrade terminated. The firmware has been upgraded successfully …” message, click the **Finish** button to continue.
If after 10 minutes, the VibroSmart Module(s) Firmware Upgrade window does not display a successful message, click the **Cancel** button to close the window and continue.
Then exit (close) VibroSight System Manager.

(4) Restart VibroSight System Manager and verify that the correct version of firmware is reported for each device that was updated. (When a device is selected in the System Explorer window, this information is available in the main window (centre) under Module PNR. It is also available in the VibroSmart Module(s) Firmware Upgrade window when a device is selected and the Change Firmware command is run).
If a device does not report the correct version of firmware, rerun the Change Firmware command for this device.
Then exit (close) VibroSight System Manager.

(5) Repeat steps (2), (3) and (4) for each type of device to be updated (for example, VSN010 and VSV30x modules).

(6) Start VibroSight Configurator, open the configuration for the VibroSmart (see step (1)), then apply (activate) the configuration. (If required, VibroSight Configurator will automatically update the configuration to the latest version and inform the user.)
Then exit (close) VibroSight Configurator.

(7) Turn the power supply to the VibroSmart off and wait for a few seconds. Then turn the power supply back on and verify that the system operates as expected.

During this firmware update process, the behaviour of the LEDs on the front panel of the VibroSmart devices can be inconsistent and should be ignored. Normal LED behaviour resumes after the firmware update is complete (after step (7)).

Table 4: VibroSight software and VibroSmart VSN010 firmware compatibility

	VSN010 firmware (`*.redboxfw`). See note 1			
VibroSight software version CD part number	642-004-000-008	642-004-000-009	642-004-000-010	642-004-000-011
2.12.0 609-004-000-027	✓ See note 2			
2.12.1 609-004-000-028		✓ See note 2		
2.12.2 609-004-000-029		✓		
2.12.3 609-004-000-030			✓ See note 2	
2.12.4 609-004-000-032			✓	
2.12.5 609-004-000-033			✓	
2.12.6 609-004-000-034				✓ See note 2
2.12.7 609-004-000-036				✓
3.0.0 609-004-000-037				✓
3.1.0 609-004-000-038				✓
3.2.0 609-004-000-039				✓
3.3.0 609-004-000-040				✓
3.4.0 609-004-000-041				✓
3.5.0 609-004-000-042				✓

Notes for Table 4 (see the next page)

Notes for Table 4

1. VibroSmart VSN010 firmware is distributed as a single *.redboxfw* file (a proprietary file format) with a PNR such as *642-xxx-000-xxx*. In these PNRs, the *xxx-xxx-000-xxx* denotes that the firmware is not packaged (compressed or archived). VibroSight System Manager always uses and displays information about VibroSmart device firmware using PNRs such as *642-xxx-000-xxx*, which correspond to the actual firmware that is running on the device.

2. Updating to this version of VibroSmart VSN010 firmware requires a specific process:

Notes:

For a VibroSmart consisting of different types of device, the devices should be updated in the following order: first VSN010 real-time Ethernet switches, then VSV30x vibration monitoring modules and finally VSI010 communications interface modules. In addition, VibroSight System Manager should be exited (closed) and restarted after updating the firmware for each type of device, before continuing. And after updating the firmware, the configuration on the VibroSmart devices should be re-applied (re-activated) and the VibroSmart devices should be restarted.

Procedure:

(1) Ensure that a copy of the configuration for the VibroSmart is available before updating any device firmware. For example, using the currently installed version of VibroSight (that is, before any updates to the VibroSight software corresponding to updates to VibroSmart devices), VibroSight Configurator can be used to obtain a copy of the configuration as follows:
• For a VibroSmart using a VibroSight Server, the **File > Open > Server / Database** command can be used to read the configuration from the VibroSight Server.
• For a VibroSmart not using a VibroSight Server (that is, a “stand-alone” VibroSmart), the **File > Open > Device** command can be used to read the configuration directly from the VibroSmart modules.
Then the **File > Save As > File** command can be used to store a copy of the configuration for the VibroSmart.

(2) Start VibroSight System Manager, select the device or devices of the same type to be updated (for example, VSN010 modules) and run the Change Firmware command.
When updating multiple VibroSmart devices of the same type to use the same firmware, CTRL+click or SHIFT+click can be used to select multiple devices in the Devices tree structure of the System Explorer window. This way, when the Change Firmware command is run, all of devices that were selected will be updated at the same time. Otherwise, each device must be selected and updated individually.

(3) When the VibroSmart Module(s) Firmware Upgrade window displays a “Firmware upgrade terminated. The firmware has been upgraded successfully …” message, click the **Finish** button to continue.
If after 10 minutes, the VibroSmart Module(s) Firmware Upgrade window does not display a successful message, click the **Cancel** button to close the window and continue.
Then exit (close) VibroSight System Manager.

(4) Restart VibroSight System Manager and verify that the correct version of firmware is reported for each device that was updated. (When a device is selected in the System Explorer window, this information is available in the main window (centre) under Module PNR. It is also available in the VibroSmart Module(s) Firmware Upgrade window when a device is selected and the Change Firmware command is run).
If a device does not report the correct version of firmware, rerun the Change Firmware command for this device.
Then exit (close) VibroSight System Manager.

(5) Repeat steps (2), (3) and (4) for each type of device to be updated (for example, VSI010 and VSV30x modules).

(6) Start VibroSight Configurator, open the configuration for the VibroSmart (see step (1)), then apply (activate) the configuration. (If required, VibroSight Configurator will automatically update the configuration to the latest version and inform the user.)
Then exit (close) VibroSight Configurator.

(7) Turn the power supply to the VibroSmart off and wait for a few seconds. Then turn the power supply back on and verify that the system operates as expected.

During this firmware update process, the behaviour of the LEDs on the front panel of the VibroSmart devices can be inconsistent and should be ignored. Normal LED behaviour resumes after the firmware update is complete (after step (7)).

Table 5: VibroSight software and VibroSmart VSV30x firmware compatibility

	VSV30x firmware (`*.xtranfw`). See note 1					
VibroSight software version CD part number	642-001-000-010	642-001-000-011	642-001-000-012	642-001-000-013	642-001-000-014	642-001-000-015
2.12.0 609-004-000-027	✓ See note 2					
2.12.1 609-004-000-028		✓ See note 2				
2.12.2 609-004-000-029		✓				
2.12.3 609-004-000-030			✓ See note 2			
2.12.4 609-004-000-032			✓			
2.12.5 609-004-000-033			✓	✓ See note 2		
2.12.6 609-004-000-034			✓	✓	✓ See note 2	
2.12.7 609-004-000-036			✓	✓	✓	
3.0.0 609-004-000-037			✓	✓	✓	
3.1.0 609-004-000-038			✓	✓	✓	
3.2.0 609-004-000-039			✓	✓	✓	
3.3.0 609-004-000-040			✓	✓	✓	
3.4.0 609-004-000-041						✓ See notes 2 and 3
3.5.0 609-004-000-042						✓

Notes for Table 5 (see the next page)

Notes for Table 5

1. VibroSmart VSV30x firmware is distributed as a single *.xtranfw* file (a proprietary file format) with a PNR such as *642-xxx-000-xxx*. In these PNRs, the *xxx-xxx-000-xxx* denotes that the firmware is not packaged (compressed or archived). VibroSight System Manager always uses and displays information about VibroSmart device firmware using PNRs such as *642-xxx-000-xxx*, which correspond to the actual firmware that is running on the device.

2. Updating to this version of VibroSmart VSV30x firmware requires a specific process:

Notes:

For a VibroSmart consisting of different types of device, the devices should be updated in the following order: first VSN010 real-time Ethernet switches, then VSV30x vibration monitoring modules and finally VSI010 communications interface modules. In addition, VibroSight System Manager should be exited (closed) and restarted after updating the firmware for each type of device, before continuing. And after updating the firmware, the configuration on the VibroSmart devices should be re-applied (re-activated) and the VibroSmart devices should be restarted.

Procedure:

(1) Ensure that a copy of the configuration for the VibroSmart is available before updating any device firmware. For example, using the currently installed version of VibroSight (that is, before any updates to the VibroSight software corresponding to updates to VibroSmart devices), VibroSight Configurator can be used to obtain a copy of the configuration as follows:
• For a VibroSmart using a VibroSight Server, the **File > Open > Server / Database** command can be used to read the configuration from the VibroSight Server.
• For a VibroSmart not using a VibroSight Server (that is, a “stand-alone” VibroSmart), the **File > Open > Device** command can be used to read the configuration directly from the VibroSmart modules.
Then the **File > Save As > File** command can be used to store a copy of the configuration for the VibroSmart.
(2) Start VibroSight System Manager, select the device or devices of the same type to be updated (for example, VSV30x modules) and run the Change Firmware command.
When updating multiple VibroSmart devices of the same type to use the same firmware, CTRL+click or SHIFT+click can be used to select multiple devices in the Devices tree structure of the System Explorer window. This way, when the Change Firmware command is run, all of devices that were selected will be updated at the same time. Otherwise, each device must be selected and updated individually.
(3) When the VibroSmart Module(s) Firmware Upgrade window displays a “Firmware upgrade terminated. The firmware has been upgraded successfully …” message, click the **Finish** button to continue.
If after 10 minutes, the VibroSmart Module(s) Firmware Upgrade window does not display a successful message, click the **Cancel** button to close the window and continue.
Then exit (close) VibroSight System Manager.
(4) Restart VibroSight System Manager and verify that the correct version of firmware is reported for each device that was updated. (When a device is selected in the System Explorer window, this information is available in the main window (centre) under Module PNR. It is also available in the VibroSmart Module(s) Firmware Upgrade window when a device is selected and the Change Firmware command is run).
If a device does not report the correct version of firmware, rerun the Change Firmware command for this device.
Then exit (close) VibroSight System Manager.
(5) Repeat steps (2), (3) and (4) for each type of device to be updated (for example, VSI010 and VSN010 modules).
(6) Start VibroSight Configurator, open the configuration for the VibroSmart (see step (1)), then apply (activate) the configuration. (If required, VibroSight Configurator will automatically update the configuration to the latest version and inform the user.)
Then exit (close) VibroSight Configurator.
(7) Turn the power supply to the VibroSmart off and wait for a few seconds. Then turn the power supply back on and verify that the system operates as expected.
During this firmware update process, the behaviour of the LEDs on the front panel of the VibroSmart devices can be inconsistent and should be ignored. Normal LED behaviour resumes after the firmware update is complete (after step (7)).

3. This version of VibroSmart VSV30x firmware introduces support for hydro air-gap monitoring.
A firmware upgrade is required in order to run VibroSight 3.4.0 or later.

6.2.3 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 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 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.

For VibroSmart modules, each module can be selected and its firmware updated individually. Alternatively, multiple modules of the same type (for example, VSV3x0) can be updated to the same version of firmware at the same time.

NOTE: It is strongly recommended to ensure that a copy of the configuration for a VibroSmart is available before updating the firmware of any of the VibroSmart modules used in the distributed monitoring system.

For example, using the currently installed version of VibroSight (that is, before any updates to the VibroSight software corresponding to updates to VibroSmart modules), VibroSight Configurator should be used to obtain a copy of the configuration as follows:

For a VibroSmart using a VibroSight Server, the **File > Open > Server / Database** command can be used to read the configuration from the VibroSight Server.

For a VibroSmart not using a VibroSight Server (that is, a “stand-alone” VibroSmart), the **File > Open > Device** command can be used to read the configuration directly from the VibroSmart modules.

Then the **File > Save As > File** command should be used to store a copy of the configuration for the VibroSmart distributed monitoring system.

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 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 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.

   To change multiple VibroSmart to use the same version of firmware at the same time, use CTRL+click or SHIFT+click to select multiple devices from the Devices tree-view. (Then, when the Change Firmware command is run, all of the devices that were selected will be updated at the same time.)

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

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

   For XMx16 cards and VibroSmart 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 distributed monitoring systems, where systems are operating with different versions of VibroSight.

6.3 Final checks

After upgrading the VibroSight software, it is recommended to check that VibroSight has not been inadvertently modified and that it continues to operate normally.

In particular, it is recommended to check any VibroSight Servers in order to ensure that the data acquisition and external interfaces, data post-processing and/or logging are all configured as expected.

In a VibroSight Server user interface:

- On the Status tab under Device drivers, check that the VM600, VibroSmart, OPC and Modbus controls are enabled or disabled as required by your application.
- On the Status tab under Server features, check that the Basic math, Air gap, Combustion monitoring, Duration counters, VSHDA import and Data logging manager controls are enabled or disabled as required by your application.
- On the Log messages tab, check the listed messages (Info level) to ensure that the hardware (VM600 cards and /or VibroSmart modules) have been discovered and that data acquisition has resumed.

NOTE:	When a VibroSight Server is running as a Windows service, the usual VibroSight Server user interface is not displayed, so VibroSight System Manager must be used to work with the VibroSight Server. That is, VibroSight System Manager can be used to connect to a VibroSight Server in order to check and configure the operation of the server's drivers and features.

Finally, after an upgrade, it is strongly recommended to use VibroSight Vision to connect to any VibroSight Servers in order to verify that new live and/or historical data is available.

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:

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

Telephone: +41 (0) 26 407 11 11
Email: energysupport@ch.meggitt.com
Website: www.meggittsensing.com/energy

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 7	Windows 8.1	Windows 10
VibroSight software compatible?	Yes (but not recommended for new installations as Microsoft support for Windows 7 ends in January 2020).	Yes	Yes

VibroSight software and Windows Server operating system compatibility

	Windows Server 2008 R2	Windows Server 2012	Windows Server 2016
VibroSight software compatible?	Yes (but not recommended for new installations as Microsoft support for Windows Server 2008 R2 ends in January 2020)	Yes	Yes

VibroSight software and Microsoft .NET Framework requirements

VibroSight software version	Microsoft .NET Framework requirements
VibroSight 3.4.0 or later	.NET Framework 4.7.1 See note 1
VibroSight 3.0.0 or later	.NET Framework 4.6
VibroSight 2.12.0 or later	.NET Framework 4.5 and .NET Framework 2.0 See note 2
VibroSight 2.9.4 or later	.NET Framework 4.5
VibroSight 2.9.3 and 2.9.2	.NET Framework 4 (Standalone Installer)
VibroSight 2.9.1 or earlier	.NET Framework 3.5 SP1

Notes

1. Microsoft .NET Framework 4.7.1 replaces .NET Framework versions 4.0 to 4.7.

2. Since Microsoft .NET Framework 3.5 also includes .NET Framework 2.0 and .NET Framework 3.0, installing Microsoft .NET Framework 3.5 SP1 is the recommended solution for most computers (rather than installing Microsoft .NET Framework 2.0).