RELEASE NOTES

VibroSight ® software
version 2.12.7

REVISION RECORD SHEET

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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 2.12.7 (CD part number 609-004-000-036).

This document contains information about changes to the software since the previously released version (VibroSight 2.12.6), such as new features and improvements, solved problems and bug fixes, and hardware and software compatibility.

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

VibroSight software data sheet
(MSS document ref. 660-020-005-218A)

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. 660-020-010-208A)

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).

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 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 or maintenance level releases. For example, from version 2.12.6 to version 2.12.7.

However, a new licence key is required for upgrades between major or minor level releases. For example, from version 2.11.x to version 2.12.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 Support for the new VibroSight historical data archive (HDA) file format

The VibroSight historical data archive (HDA) is a proprietary file format (`*.vshda`) used to store and work with historical measurement data in VibroSight.

A `*.vshda` file is generated by VibroSight System Manager when a VibroSight Server database (`*.vssrvdb`) is copied using the **Data Repositories Copy** command with historical data archive (HDA) specified as the output. So, just like a VibroSight Server database file, a VibroSight HDA file contains logged measurement data from a specific application.

A historical data archive is treated by VibroSight as a data repository (source), like the other available data sources such as VibroSight Server databases and VibroSight devices (VibroSmart DMS devices).

NOTE: The VibroSight historical data archive (HDA) file format is highly optimised for the retrieval and handling of large data sets, so compared to database files, VibroSight historical data archives:

- Are much faster and very responsive when analysing large quantities of measurement data.

- Result in smaller file sizes, requiring less hard disk space to store and share the same quantity of information.

To work with VibroSight historical data archives:

- VibroSight System Manager is used to generate a VibroSight historical data archive from an existing VibroSight Server database (**Data Repositories Copy** command) and to generate a summary of a VibroSight historical data archive (**Data Repositories Summary** command).

- VibroSight Vision is used to work with and analyse the measurement data in a VibroSight historical data archive.
  Double-clicking a `*.vshda` file in Windows Explorer will automatically start VibroSight Vision with a new (empty) project and with the VibroSight historical data archive as the data source.

- VibroSight Event Viewer is used to work with and analyse the event data in a VibroSight historical data archive.

In addition, the Data Sources Selection dialog box that is used by VibroSight to select a data source to be used by clients such as VibroSight Scope and VibroSight Vision was updated to include the following options:

- VibroSight Server
  Using a VibroSight Server as a data source provides access to both live and historical measurement data, that is, measurement data from VM600 XMx16 cards and/or VibroSmart DMS modules that is streamed via a Sybase SQL Anywhere 11 relational database.

- Devices
  Using a device as a data source provide access to live measurement data that is streamed directly from VM600 XMx16 cards and/or VibroSmart DMS modules.

- Historical Data Files
  Using a historical data file as a data source provide access to historical measurement data that is read from a VibroSight historical data archive.

NOTE:	The data sources displayed in the Data Sources Selection dialog box depends on the VibroSight client being used. For example, VibroSight Vision can work with all types of data so it displays all of the data sources but VibroSight Scope works with live data only so it displays the VibroSight Server and Devices data sources only.

The Data Sources Selection dialog box is automatically displayed in VibroSight clients such as VibroSight Scope and VibroSight Vision when a new project is being created and the data source must be specified. It is also used in VibroSight clients such as VibroSight Mimic and VibroSight Vision when the data source for a project is changed.

Refer to the *VibroSight* help for further information.

2.2 Support for the new VM600 CPUR/IOCR card pair

VibroSight has started to include support for the new VM600 CPUR/IOCR central processing unit card pair and VibroSight 2.12.7 now contains the first official release of VM600 CPUR card firmware (see 5.2 VM600 cards).

NOTE:	VibroSight Configurator and VibroSight System Manager are the only VibroSight software modules used with the CPUR/IOCR card pair.

For the new CPUR/IOCR card pair:

- VibroSight System Manager is used to configure the CPUR/IOCR card pair's system Ethernet adaptors (ports), upgrade (and check) firmware versions and download diagnostic information.

- VibroSight Configurator is used to configure the CPUR/IOCR card pair card and associate it with any XMx16/XIO16T card pairs whose configurations the CPUR is managing, including the IP address of the XMx16/XIO16T card pair Ethernet port allocated to CPUR↔XMx16 communications. It is also used to upload a fieldbus configuration file to the CPUR in order to configure the CPUR/IOCR card pair's fieldbus interfaces (PROFIBUS).

2.3 Management of VM600 XMx16/XIO16T card pair configurations

A VM600 XMx16/XIO16T card pair does not store its configuration in non-volatile memory so after the power supply to these cards is turned off and on, the cards will lose their configuration.

In typical applications such as condition monitoring, a VibroSight Server "manages" the XMx16/XIO16T card pairs and uploads the card configurations that allow data acquisition to start and measurement data to be provided.

In typical applications such as control systems, where a CPUx/IOCx card pair is used as a VM600 rack controller and communications interface between the rack and a third-party control system, the CPUx can "manage" the configurations of up to two XMx16/XIO16T card pairs (that is, upload their card configurations). In these applications, the CPUx managing the XMx16/XIO16T card pairs has read and write access to these cards and can modify their configurations but any VibroSight Server communicating with the XMx16/XIO16T card pairs has read-only access.

So, depending on the application, in VibroSight System Manager, the **IP settings** command must be used to appropriately configure the Ethernet ports of the XMx16/XIO16T card pair and the system Ethernet ports of any CPUR/IOCR used in order to allow the various system components to communicate. And to disable any unused Ethernet ports.

.**NOTE:**   For most applications, such as condition monitoring, only one Ethernet port of a VM600 XMx16/XIO16T card pair is typically used: either the XMx16 Ethernet port (ETHERNET) or the XIO16T Ethernet port (ETHERNET). Any unused Ethernet port of an XMx16/XIO16T card pair should be disabled.

If both Ethernet ports of an XMx16/XIO16T card pair are required by an application, then a different subnet mask must be used for each Ethernet port in order to partition the networks used and ensure that the communications on each Ethernet port are kept separate from one another.

In control system applications that use a VM600 CPUx/IOCx card pair as a VM600 rack controller and communications interface between the rack and a third-party control system, and where the CPUx "manages" the configuration of the XMx16/XIO16T card pair, both system Ethernet ports of the VM600 CPUR/IOCR card pair are typically used: the IOCR system Ethernet ports (ETHERNET1 and ETHERNET2). And both Ethernet ports of any associated VM600 XMx16/XIO16T card pair are also typically used: the XMx16 Ethernet port (ETHERNET) and the XIO16T Ethernet port (ETHERNET). Any unused Ethernet port should be disabled.

If both Ethernet ports of a CPUx/IOCx card pair are required by an application, then a different subnet mask must be used for each Ethernet port in order to partition the networks used and ensure that the communications on each Ethernet port are kept separate from one another.

The management of an XMx16/XIO16T card pair is configured in VibroSight Configurator, in the Hardware view, at the XMx16 card node level, using the **Managed by** control.

If an XMx16/XIO16T card pair's configuration is managed by a CPUR/IOCR card pair, then the IP address of the XMx16/XIO16T card pair's Ethernet port allocated to connect (network) to the CPUx/IOCx card pair must be configured in VibroSight Configurator, in the Hardware view, at the CPUR card node level, using the **Managed** and **Management IP address** controls.

2.3.1 Condition monitoring applications

In a typical condition monitoring application, a VM600 XMx16/XIO16T card pair provides measurement data that is communicated to a VibroSight Server for data logging and display.

For an XMx16/XIO16T card pair whose configuration is managed by a VibroSight Server, use **Managed by: This VibroSight Server** in the VibroSight Server configuration that contains the XMx16/XIO16T card pair. This is the default option when a new XMx16 card is added to a VibroSight Server configuration.
Note: This means that this VibroSight Server will have read and write access to this XMx16/XIO16T card pair.

2.3.2 Control system applications

In a typical control system application, a VM600 XMx16/XIO16T card pair provides measurement data that is communicated via a CPUx/IOCx card pair to a control system in order to help optimise the operating performance of a machine. Often, the measurement data is also communicated to a VibroSight Server for data logging and display.

This requires that the CPUx card knows the configuration of any XMx16 card that it is managing but in in order to avoid conflicts, only one device can "manage" an XMx16 (that is, change the card's configuration). So, in typical control system applications, the CPUx manages and has read and write access to a shared XMx16/XIO16T card pair, while any VibroSight Server can have read-only access.

For an XMx16 card whose configuration is managed by a CPUR card that is in the VibroSight Server configuration being edited, use **Managed by: CPUR card CPUR** in the VibroSight Server configuration that contains the XMx16 and CPUR cards.
Note: This means that the CPUR that is configured by this VibroSight Server configuration will have read and write access to this XMx16 and that any VibroSight Server will have read-only access.

For an XMx16 card whose configuration is managed by a CPUx card that is not in the VibroSight Server configuration being edited or is managed by another VibroSight Server, use **Managed by: Another VibroSight Server or CPUR** in the VibroSight Server configuration that contains the XMx16 card.
Note: This means that another different CPUx card or VibroSight Server running will have read and write access to the XMx16 card pair and that this VibroSight Server will have read-only access.

2.3.3 Exporting VM600 XMx16 card configurations

For an XMx16 card whose configuration is managed by a CPUx card that is not in the VibroSight Server configuration being edited or is managed by another VibroSight Server, the **Export card configuration** command must be used to generate an individual device configuration file for an XMx16 card that is used by the other different CPUx card or VibroSight Server application in order to manage (configure) the XMx16 card.

The **Export card configuration** command generates two versions of the device configuration file (`*.xml`) for an XMx16 card:

- A version suitable for use by CPUM cards running firmware version 079 or later.
  This is a larger file with a default file name such as `XMC16 card 1.xml`.

- A version suitable for use by CPUM cards running firmware version 078 or earlier.
  This is a smaller file with a default file name such as `XMC16 card .noReadback1.xml`.

The version suitable for use by CPUM cards running firmware version 079 or later is larger as it contains more detailed configuration information in order to allow the XMx16 card managed (configured) by a CPUM card to support a direct connection to VibroSight Vision.

The version suitable for use by CPUM cards running firmware version 078 or earlier does not support a direct connection to VibroSight Vision.

NOTE:	Using a direct connection between VibroSight Vision and a VM600 XMx16 card provides access to faster live measurement data: XMx16 card update rate of 100 ms and VibroSight Vision plot refresh rate of 100-300 ms (as the data is streamed directly from the card, bypassing any VibroSight Server:).

The CPUM Configurator software is used to configure CPUM cards and should be used to upload a device configuration to an XMx16 card that was generated using the **Export card configuration** command.

The correct version of the device configuration file for an XMx16 card must be used, depending on the version of firmware running on the CPUM card.

NOTE:	CPUM Configurator is a software tool from Meggitt Sensing Systems Vibro-Meter® product line that communicates with a CPUM card in a VM600 rack over an Ethernet link. Basically, it provides a graphical user interface for a Telnet session between the CPUM Configurator program (Telnet client) and a CPUM card (Telnet server).
	CPUM Configurator is included with VM600 MPSx software version 2.7 or later and is copied to the computer as part of the VM600 MPSx software installation process. Refer to the *VM600 networking* manual for further information on CPUM Configurator.

2.4 VM600 CPUR card GSD file

The GSD (general station description) file for the VM600 CPUR card is now included in a default folder on the computer where VibroSight is installed. The GSD file is typically imported by third party devices such as a DCS or PLC in order to help configure their communications links with the CPUR's fieldbus interfaces

The default location for the CPUR GSD file (`MGGT0FBE.GSD`) depends on the operating system installed on the computer:

- C:\Program Files (x86)\Meggitt\VibroSight 2\Firmware\VM600\CPUR on 64-bit versions of Windows.

- C:\Program Files\Meggitt\VibroSight 2\Firmware\VM600\CPUR on 32-bit versions of Windows.

NOTE: A general station description (GSD) file is a device description file provided with PROFIBUS and PROFINET devices. It is a text file that contains information about the basic capabilities and characteristics of a PROFIBUS or PROFINET device, and must be provided with the device. With a GSD file, system integrators can determine basic data such as the communications options and the available diagnostics, and the supervision software (PROFIBUS or PROFINET "master" device) can plan the configuration of the system..

VibroSight Configurator

2.5 Configuring VibroSmart DMS modules

VibroSight Configurator has been significantly improved to minimise disruption to a system when updating (activating) the configuration running on VibroSmart DMS modules, in order to ensure that the machinery being monitored remains protected for as long as possible.

In VibroSight Configurator, when a configuration containing VibroSmart DMS modules is activated (using the **Activate** command), VibroSight Configurator will now:

- Read the currently active configurations directly back from each of the modules in the configuration.

- Individually compare the currently active configurations (read from the modules) with the new configuration to be activated.

- For each module whose currently active configuration is the same as the configuration to be activated – do not update the configuration.

- For each module whose currently active configuration is not the same as the configuration to be activated – send (download) the new configuration to the module.

In this way, only the modules that must be re-configured have their machinery monitoring functions interrupted. (Previously, updating the configuration running on VibroSmart DMS modules required that the entire configuration was sent with the result that all modules were automatically re-configured even if this was not strictly necessary.)

Before sending a new configuration to a module and activating it, VibroSight Configurator will now put the module itself and any dependent modules in alarm bypass mode in order to temporarily inhibit the activation of the relay for these modules and avoid potential false trips of the machinery being monitored.

NOTE:	A dependent VibroSmart DMS module is a module that is affected by the operation of another module. For example:
	• A VSV300 module is a dependant module if it uses a tacho signal generated by another VSV300, or uses a discrete signal interface (DSI) control signal from another module.
	• A VSVI010 module is a dependant module if one of its fieldbuses shares measurement data from a VSV300, or uses a discrete signal interface (DSI) control signal from another module.

After activating the new configuration on a module and detecting that its operating mode is "operational", VibroSight Configurator will take the module itself and any dependent modules out of alarm bypass mode in order to resume the normal operation of the system.

In addition, VibroSight Configurator now displays messages to the user reporting the success or failure of an update, including information on which individual modules were actually updated and on any problems that were experienced.

Finally, it is important to note that **Measurement block id**s (VibroSmart measurement block node level) and **Node id**s (VibroSmart module node level) should be the same in both configurations (the currently active and the configuration to be activated) in order to avoid potential problems such as re-synchronisation of the real time network and incompatibility due to duplicated identifiers.

VibroSight Vision

2.6 VibroSight Vision plot refresh rate of 100-300 ms with a VM600 XMx16 card

VibroSight Vision now supports a plot refresh rate of 100-300 ms when displaying live data from a single VM600 XMx16 card that it is connected directly to.

VM600 XMx16 cards support a card update rate of 100 ms and the VibroSight Server supports a data update rate of 1 s, so for applications that need to display and refresh data as quickly as possible, a direct connection to a VM600 XMx16 card can now be used.

To establish a direct connect to a VM600 XMx16 card in VibroSight Vision:

When the Data Sources Selection dialog box is displayed, use **Devices** to see a list of all XMC16, XMV16 or XMVS16 cards available on the network, and then select a single VM600 XMx16 card.

NOTE:	Using a device as a data source provide access to live measurement data that is streamed directly from VM600 XMx16 cards and/or VibroSmart DMS modules, bypassing any VibroSight Server.

When VibroSight Vision establishes the connection with a VM600 XMx16 card, it reads the configuration directly from the card.

As a VM600 XMx16 card does not store its configuration in non-volatile memory, it must always get its configuration from a VibroSight Server (application software or CPUM/CPUR card process) after the power supply to the card is turned off and on. This requires that the VibroSight Server managing the

XMx16 card's configuration must be run after the power supply to the card is interrupted, in order to configure the card.

NOTE:	If a direct connection to a VM600 XMx16 card is being used, the VibroSight Server can be closed (exited) after the XMx16 card is configured, if the server is not being used for anything else.

To display data from a VM600 XMx16 card in VibroSight Vision plots with faster refresh rates:

Ensure that the Time Range tool window is in **Live data** mode and use the **Interval** controls to set the data refresh rate between 100 ms and 1 s.

NOTE:	The **Interval** controls for **Variables** and for **Waveforms, Spectra and Orbits** can be separate or combined, depending on the options displayed in the Time Range tool window.

VibroSight Vision displays and refreshes its plots as fast as it can with a typical rate of 100-300 ms, with the actual rate depending on the VibroSight Vision configuration, computer performance, card configuration and network traffic.

For VibroSight Vision plots with refresh rates faster than 1 s (100 ms to 1 s), the resolution of the timestamps used by the plot increases to include a millisecond indicator, that is, from 12.25.24 (hh.mm.ss) to 12.25.24.1 (hh.mm.ss.ms). For example, this includes the timestamp displayed in the top of a plot (corresponding to the plot's latest measurement data) and the timestamps in displayed in the legend of a plot (for example, corresponding to the plot's cursors) latest measurement data)

When the computer running VibroSight Vision is not powerful enough to update the plots at the selected refresh rate, VibroSight Vision will "catch up" and display all of the available data when the plot is next refreshed as the underlying buffers used in the background capture the measurement data from the card at the maximum data rate (100 ms). Similarly, if a plot is exported, the exported image and/or data will contain all of the available data from the buffers.

See also 2.7 XMx16 cards: 100 ms card update rate.

VM600 cards

2.7 XMx16 cards: 100 ms card update rate

VM600 XMx16 card firmware now supports a card update rate of 100 ms for faster live data and also allows the card's configuration to be managed by a VM600 CPUR card ("rack controller"), eliminating the XMx16 card's requirement for a VibroSight Server.

See also 2.6 VibroSight Vision plot refresh rate of 100-300 ms.

3 Solved problems and bug fixes

General

3.1 Improvements and bug fixes

General stability improvements across the VibroSight 2.12.7 software.

3.2 Support for the new VM600 CPUR/IOCR card pair

For the new CPUR/IOCR card pair supported by VibroSight, VibroSight Configurator has been improved to simplify the specification of the Ethernet ports (network) allocated to CPUR↔XMx16 communications.

Accordingly, for a typical control system application using a CPUx/IOCx card pair to "manage" an XMx16/XIO16T card pair:

- In VibroSight System Manager, for the XMx16/XIO16T card pair and the CPUR/IOCR card pair, the **IP settings** commands are used to appropriately configure the Ethernet ports of the XMx16/XIO16T and the Ethernet ports of the CPUR/IOCR in order to allow the various system components to communicate. And to disable any unused Ethernet ports.

NOTE: In a typical control system application, where an XMx16/XIO16T card pair's configuration is managed by a CPUx/IOCx card pair:
• Both XMx16/XIO16T card pair Ethernet ports are typically used: one Ethernet port is required to connect (network) to the CPUx/IOCx card pair and one Ethernet port is required to connect to the computer running the VibroSight Server (if used).
• Both CPUx/IOCx card pair Ethernet ports are typically used: one Ethernet port is required to connect (network) to the XMx16/XIO16T card pair and one Ethernet port is required to connect to the computer running the VibroSight software.

If both Ethernet ports of an XMx16/XIO16T card pair are required by an application, then a different subnet mask must be used for each Ethernet port in order to partition the networks used and ensure that the communications on each Ethernet port are kept separate from one another. If only one XMx16/XIO16T Ethernet port is required by an application, the other Ethernet port should be disabled.

If both system Ethernet ports of a CPUR/IOCR card pair are required by an application, then a different subnet mask must be used for each system Ethernet port in order to partition the networks used and ensure that the communications on each system Ethernet port are kept separate from one another. If only one CPUR/IOCR Ethernet port is required by an application, the other Ethernet port should be disabled.

When specifying the Ethernet ports (network) allocated to CPUR↔XMx16 communications, static IP (rather than a DHCP server) should be used when configuring the Ethernet ports in order to ensure that the IP addresses do not inadvertently change as this would break CPUR↔XMx16 communications).
In addition, the Ethernet ports (network) allocated to CPUR↔XMx16 communications must belong to the same subnet.

- In VibroSight Configurator, for the XMx16/XIO16T card pair, in the Hardware view, at the XMx16 card node level, the **Managed by** control is used to specify the management of the XMx16/XIO16T card pair: by either a VibroSight Server or a CPUR card.

- In VibroSight Configurator, for the CPUR/IOCR card pair, in the Hardware view, at the CPUR card node level, the **Managed** control is used to specify the management of an XMx16/XIO16T card pair by the CPUR card, and the **Management IP address** control are used to specify the IP address of an XMx16/XIO16T card pair's Ethernet port allocated to CPUR↔XMx16 communications. (This should be a

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| NOTE: | In a typical control system application that uses a CPUx/IOCx card pair as a VM600 rack controller and communications interface between the rack and a third-party control system, the CPUx can "manage" up to two XMx16/XIO16T card pairs (that is, upload their card configurations). |

Refer to the *VibroSight* help for further information.

3.3 VM600 CPUR card related messages

All user messages have been updated to consistently use "CPUR" to refer to the new VM600 CPUR card ("rack controller"). Some user messages were incorrectly using "CPUR2" – an internal engineering project name.

3.4 Data repository Copy command syntax changes

VibroSight 2.12.6 introduced changes to the VibroSight System Manager **Data repositories** (database) operations to help support VibroSight historical data archives.

At this time, the syntax of the `-custom-zip-command` option supported by the command-line equivalents of the **Copy** command (`vibrosightdatacopy.exe`) and the **Database backup** commands (`vibrosightdatabasebackup.exe`) was changed to replace the use of {} curly brackets with <> angle brackets.

This syntax change broke compatibility with existing Windows batch files used to automate data management for VibroSight 2.12.5 or earlier applications, where the `-custom-zip-command` option was used. However, this simply requires that the `-custom-zip-command` option's use of {ARCHIVE} is replaced with <ARCHIVE> and the use of {FILES} is replaced with <FILES>.

The "Copying a VibroSight data repository using a command-line tool – 7-Zip example" and "Copying a VibroSight data repository using a command-line tool - WinRAR example" topics in the *VibroSight* help have now been updated to reflect the new syntax.

4 Known issues

4.1 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.

4.2 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.

4.3 Small "holes" in plotted data for larger 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 larger 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.

4.4 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.

4.5 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 the VibroSight Server database file (`*.vssrvdb` or `*.db`) and the 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 database copies append a timestamp (_yyyyMMddHHmmss) to the Server instance name which 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 database copy is complete.

Also, depending on the VibroSight Server 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 databases being created during automatic data management.
	This is particularly important for systems with automated data management and system backup procedures that use script files containing database commands (such as copy and backup) that can automatically generate VibroSight Server database files.

4.6 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.

4.7 VibroSight Servers listen to a single IP address

A VibroSight Server uses one specific IP address for connections to VibroSight clients and all communications is directed through this VibroSight Server IP address. This IP address can be set to any of the available network adapters or logical addresses on the host computer running the

VibroSight Server. On a computer with a single network adapter, the IP address of the single network adapter is used by default.

In typical applications, the network adapter of the host computer running the VibroSight Server is connected to a dedicated control (industrial) Ethernet network that contains the VibroSight-compatible hardware such as VM600 XMx16 cards and VibroSmart DMS devices.

However, as a VibroSight Server uses one specific IP address (network adapter), this prevents concurrent connections from VibroSight clients running on other separate networks, such as a business (corporate) Ethernet network.

See also 4.13 VibroSight Server communication errors.

4.8 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).

4.9 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 DMS 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.

4.10 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.

4.11   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.

4.12   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 DMS 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).

4.13   VibroSight Server communication errors

Under rare circumstances, when a computer running VibroSight clients has two network adapters (cards) installed, communications errors with a VibroSight Server are possible.

See also 4.7 VibroSight Servers listen to a single IP address.

4.14 CPUM card firmware, CPUR card firmware and VibroSight software compatibility

VibroSight 2.12.7 is not compatible with existing versions of CPUM card firmware or CPUR card firmware.

However, new versions of CPUM card firmware and CPUR card firmware will be released soon, in order to allow applications which use a CPUM or a CPUR to manage an XMx16 card to take advantage of the improvements in VibroSight 2.12.7.

NOTE:	No firmware for CPUM and CPUR cards is supplied with VibroSight 2.12.7 as it is not available yet. Therefore, applications using a CPUM or a CPUR to manage an XMx16 card should not upgrade to VibroSight 2.12.7 until compatible firmware is released for the CPUM and CPUR cards.

4.15 Data reduction when working with a VibroSight historical data archive

VibroSight Vision automatically performs data reduction when generating and displaying plots, depending on the actual quantity of measurement data available and the configured data handling limitations.

When working with a VibroSight historical data archive as the data source, the data reduction applied is different for different types of measurement data (static and dynamic):

- Static data – an intelligent data reduction algorithm is used that retains minimum and maximum data values.

- Dynamic data – a simple data reduction algorithm is used that decimates data by keeping every n^{th} data value.

4.16 Incorrect display of historical spectra after configuration changes

When the configuration of a spectrum is changed, for example, by changing the bandwidth or size (number of lines), VibroSight Vision displays the spectra obtained after the configuration change correctly. However, VibroSight Vision can display the historical spectra logged before the configuration change incorrectly.

4.17 Risk of conflicts with automated data management

When there are multiple concurrent data repository (database) copy jobs, that is, multiple copy commands running at the same time, there is a risk of "blocking" conflicts if database operations are using the same database at the same time. This can result in incomplete or failed copy jobs with implications for automated data management.

5 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 2.12.7 is an update level release in the 2.x.x series and replaces VibroSight 2.12.6.

Compatibility with existing databases is achieved using the database **Update** tool (from VibroSight System Manager's **Database** tools) which supports the continued used of configurations and data from previous versions. See 6.2.1 Updating the internal structure of a VibroSight database.

5.1.1 Microsoft Windows operating systems

VibroSight 2.12.7 is compatible with 32-bit versions and 64-bit versions of Microsoft ® Windows ® operating systems.

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

VibroSight 2.12.7 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.

5.1.2 Microsoft .NET Framework

For most Windows operating systems, VibroSight 2.12.7 requires that Microsoft .NET Framework 4.5 and .NET Framework 2.0 are installed on the computer.

However, since Microsoft .NET Framework 3.5 includes .NET Framework 2.0 and .NET Framework 3.0, installing Microsoft .NET Framework 4.5 and .NET Framework 3.5 Service Pack 1 is the recommended solution for most computers.

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. (Microsoft .NET Framework 3.5 SP1 is a full cumulative update that contains many new features building incrementally upon .NET Framework 2.0, 3.0, 3.5, and includes cumulative servicing updates to the .NET Framework 2.0 and .NET Framework 3.0 subcomponents.)
	Microsoft .NET Framework 2.0 is required by the OPC Core Components Redistributable that is installed by VibroSight (see 5.1.7 OPC Foundation OPC Core Components Redistributable).

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

5.1.3 Sybase SQL Anywhere 11 software

VibroSight uses the Sybase ® SQL Anywhere 11 database software in its standard configuration. VibroSight 2.12.7 remains compatible with the previously deployed version of SQL Anywhere, namely SQL Anywhere version 11.0.1.2044.

NOTE:	VibroSight requires the 32-bit version of SQL Anywhere 11 on both 32-bit and 64-bit Windows operating systems. It is strongly recommended that only the 32-bit version of SQL Anywhere 11 is installed on the computer running VibroSight.
NOTE:	Updating SQL Anywhere to version 11.0.1.2867 is **mandatory** in order to avoid potential memory issues (fixed by Sybase). A software update (patch) included on the Sybase CD must be run in order to update Sybase SQL Anywhere from version 11.0.1 to version 11.0.1.2867: *SA11_Full_Win32+x64.1101_2867_EBF.exe.* See 6.3 Upgrading the Sybase SQL Anywhere 11 software.

5.1.4 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 ISQL (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 on a computer that does not have the VM600 CMS software installed.

5.1.5 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 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 on a computer that does not have the SIMATIC Step 7 software installed.

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 installed by VibroSight 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.

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.
	The OPC Core Components Redistributable that is installed as part of the VibroSight software installation process requires that the Microsoft .NET Framework 2.0 is available on the computer. (However, since Microsoft .NET Framework 3.5 includes .NET Framework 2.0 and .NET Framework 3.0, installing Microsoft .NET Framework 3.5 Service Pack 1 is the recommended solution for most computers.) See also 5.1.2 Microsoft .NET Framework.

5.2 VM600 cards

5.2.1 Firmware

There are firmware updates for some VM600 cards corresponding to VibroSight 2.12.7.

NOTE:	Starting with VibroSight 2.12.0, support for the existing VM600 CPUR card was deprecated.
	Starting with VibroSight 2.12.7, support for the new VM600 CPUR card is introduced.

The latest firmware for the CPUR is now:

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

This is the first official release of VM600 CPUR card 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. See 2.2 Support for the new VM600 CPUR/IOCR card pair.

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

- Base System: base-system-640-003-001-013.tgz
- Applications: applications-640-010-001-013.tgz.

Improvements to this latest VM600 XMx16 card firmware includes 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. See 2.6 VibroSight Vision plot refresh rate of 100-300 ms with a VM600 XMx16 card and 2.7 XMx16 cards: 100 ms card update rate.

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

5.3 VibroSmart DMS devices

5.3.1   Firmware

There are no firmware updates for VibroSmart DMS modules and devices corresponding to VibroSight 2.12.7.

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 VSV300 module remains:

- 642-001-000-014.xtranfw.

Therefore, for current versions of the 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 DMS modules and devices) before starting a VibroSight system upgrade, in order to establish if any firmware updates are also required. See 6.4.3 Updating the firmware using VibroSight System Manager.

NOTE:	It is strongly recommended to ensure that a copy of the configuration for a VibroSmart DMS is available before updating the firmware of any of the VibroSmart DMS modules used in the DMS. See 6.4.3 Updating the firmware using VibroSight System Manager.

6.1 VibroSight software user settings

The VibroSight Software generates and uses some files on the hard disk 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 2, 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 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 2.12.x until the existing VibroSight Server instance names (and any references to them) are manually edited to be 18 characters or less. See also 4.5 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). 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`

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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.

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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).
	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.

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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 (XMx16) and VibroSmart DMS devices (VSI010, VSN010 and VSV300) 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 DMS 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 DMS 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.

6.4.1   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:
`C:\Program Files\Meggitt\VibroSight 2\Firmware\VM600`

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

Table 1 shows the compatibility between VibroSight software and VM600 CPUR card hardware (that is, CPUR card firmware).

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

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

Table 1: VibroSight software and VM600 CPUR card firmware compatibility

	VM600 CPUR firmware. See note 1
VibroSight software version CD part number	Base-system (*.tgz)
	640-014-001-001
	Applications (*.tgz)
	640-015-001-001
2.12.7 609-004-000-036	✓ See note 2

Notes for Table 1

1. VM600 CPUR card 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 card 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.

Table 2: VibroSight software and VM600 XMx16 card firmware compatibility

VibroSight software version CD part number	VM600 XMx16 firmware. See note 1				
	Base-system (*.tgz)				
	640-003-001-010	640-003-001-011		640-003-001-012	640-003-001-013
	Applications (*.tgz)				
	640-010-001-009	640-010-001-010	640-010-001-011	640-010-001-012	640-010-001-013
2.11.2 609-004-000-022	✓ See note 2				
2.11.3 609-004-000-023	✓				
2.11.4 609-004-000-024	✓				
2.11.5 609-004-000-025	✓				
2.11.6 609-004-000-026	✓				
2.12.0 609-004-000-027		✓ See note 3			
2.12.1 609-004-000-028			✓ See note 4	✓ See note 5	
2.12.2 609-004-000-029			✓	✓	
2.12.3 609-004-000-030			✓	✓	
2.12.4 609-004-000-032			✓	✓	
2.12.5 609-004-000-033			✓	✓	
2.12.6 609-004-000-034			✓	✓	
2.12.7 609-004-000-036			✓	✓	✓ See note 6

Notes for Table 2 (see the next page)

Notes for Table 2

1. VM600 XMx16 card 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 card firmware introduces support for the operation of a VibroSight system without an NTP server (NTP-free).

3. This version of VM600 XMx16 card firmware introduces support for hydro air-gap monitoring.

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

5. This version of VM600 XMx16 card 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.

6. This version of VM600 XMx16 card 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.

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

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

Table 5 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 3: VibroSight software and VibroSmart VSI010 module firmware compatibility

VibroSight software version CD part number	VSI010 firmware (*.xmsifw). See note 1					
	642-002-001-004	642-002-001-005	642-002-000-006	642-002-000-007	642-002-000-008	642-002-000-009
2.11.2 609-004-000-022	✔ See note 2					
2.11.3 609-004-000-023	✔					
2.11.4 609-004-000-024		✔				
2.11.5 609-004-000-025		✔				
2.11.6 609-004-000-026			✔ See note 3			
2.12.0 609-004-000-027			✔			
2.12.1 609-004-000-028				✔ See note 3		
2.12.2 609-004-000-029				✔		
2.12.3 609-004-000-030					✔ See note 3	
2.12.4 609-004-000-032					✔	
2.12.5 609-004-000-033					✔	
2.12.6 609-004-000-034						✔ See note 3
2.12.7 609-004-000-036						✔

Notes for Table 3 (see the next page)

Notes for Table 3

1. VibroSmart VSI010 module 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 DMS 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 two-step process:

> (i) All VSI010 devices in the DMS should be upgraded to the latest *.xmsifw* firmware and all VSV300 devices in the DMS should be upgraded to the latest *.xtranfw* firmware.
> Note: It is necessary to wait until these VibroSmart DMS modules have automatically restarted after the firmware update before continuing, that is, for up to 10 minutes (up to 5 minutes for the firmware update and up to 5 minutes for the duration of the restart (reboot)).

> (ii) Then all VSN010 devices in the DMS should be upgraded to the latest *.redboxfw* firmware.

As this version of VibroSmart DMS device firmware enables the rapid spanning tree protocol (RSTP), this sequence is necessary in order to avoid broadcast storms on the network.

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

Notes:
For a VibroSmart DMS consisting of different types of device, the devices should be updated in the following order: first VSN010 real-time Ethernet switches, then VSV300 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 DMS devices should be re-activated and the VibroSmart DMS devices should be restarted.

Procedure:
(1) Ensure that a copy of the configuration for the VibroSmart DMS 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 DMS devices), VibroSight Configurator can be used to obtain a copy of the configuration as follows:
• For a VibroSmart DMS using a VibroSight Server, the **File > Open > Server / Database** command can be used to read the configuration from the VibroSight Server.
• For a VibroSmart DMS not using a VibroSight Server (that is, a "stand-alone" VibroSmart DMS), the **File > Open > Device** command can be used to read the configuration directly from the VibroSmart DMS modules.
Then the **File > Save As > File** command can be used to store a copy of the configuration for the VibroSmart DMS.

 (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 DMS 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 VSV300 modules).

(6) Start VibroSight Configurator, open the configuration for the VibroSmart DMS (see step (1)), then 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 DMS 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 DMS devices can be inconsistent and should be ignored. Normal LED behaviour resumes after the firmware update is complete (after step (7)).

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Table 4: VibroSight software and VibroSmart VSN010 device firmware compatibility

VibroSight software version CD part number	VSN010 firmware (`*.redboxfw`). See note 1					
	642-004-001-006	642-004-001-007	642-004-000-008	642-004-000-009	642-004-000-010	642-004-000-011
2.11.2 609-004-000-022	✔ See note 2					
2.11.3 609-004-000-023	✔					
2.11.4 609-004-000-024		✔				
2.11.5 609-004-000-025		✔				
2.11.6 609-004-000-026			✔ See note 3			
2.12.0 609-004-000-027			✔			
2.12.1 609-004-000-028				✔ See note 3		
2.12.2 609-004-000-029				✔		
2.12.3 609-004-000-030					✔ See note 3	
2.12.4 609-004-000-032					✔	
2.12.5 609-004-000-033					✔	
2.12.6 609-004-000-034						✔ See note 3
2.12.7 609-004-000-036						✔

Notes for Table 4 (see the next page)

Notes for Table 4

1. VibroSmart VSN010 device 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 DMS 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 two-step process:

   (i) All VSI010 devices in the DMS should be upgraded to the latest *.xmsifw* firmware and all VSV300 devices in the DMS should be upgraded to the latest *.xtranfw* firmware.
   Note: It is necessary to wait until these VibroSmart DMS modules have automatically restarted after the firmware update before continuing, that is, for up to 10 minutes (up to 5 minutes for the firmware update and up to 5 minutes for the duration of the restart (reboot)).

   (ii) Then all VSN010 devices in the DMS should be upgraded to the latest *.redboxfw* firmware.

As this version of VibroSmart DMS device firmware enables the rapid spanning tree protocol (RSTP), this sequence is necessary in order to avoid broadcast storms on the network.

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

Notes:
For a VibroSmart DMS consisting of different types of device, the devices should be updated in the following order: first VSN010 real-time Ethernet switches, then VSV300 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 DMS devices should be re-activated and the VibroSmart DMS devices should be restarted.

Procedure:
(1) Ensure that a copy of the configuration for the VibroSmart DMS 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 DMS devices), VibroSight Configurator can be used to obtain a copy of the configuration as follows:
• For a VibroSmart DMS using a VibroSight Server, the **File > Open > Server / Database** command can be used to read the configuration from the VibroSight Server.
• For a VibroSmart DMS not using a VibroSight Server (that is, a "stand-alone" VibroSmart DMS), the **File > Open > Device** command can be used to read the configuration directly from the VibroSmart DMS modules.
Then the **File > Save As > File** command can be used to store a copy of the configuration for the VibroSmart DMS.

(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 DMS 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 VSV300 modules).

(6) Start VibroSight Configurator, open the configuration for the VibroSmart DMS (see step (1)), then 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 DMS 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 DMS 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 VSV300 module firmware compatibility

VibroSight software version CD part number	VSV300 firmware (*.xtranfw). See note 1						
	642-001-001-008	642-001-001-009	642-001-000-010	642-001-000-011	642-001-000-012	642-001-000-013	642-001-000-014
2.11.2 609-004-000-022	✔ See note 2						
2.11.3 609-004-000-023	✔						
2.11.4 609-004-000-024		✔					
2.11.5 609-004-000-025		✔					
2.11.6 609-004-000-026			✔ See note 3				
2.12.0 609-004-000-027			✔				
2.12.1 609-004-000-028				✔ See note 3			
2.12.2 609-004-000-029				✔			
2.12.3 609-004-000-030					✔ See note 3	✔ See note 3	✔ See note 3
2.12.4 609-004-000-032					✔	✔	✔
2.12.5 609-004-000-033					✔	✔	✔
2.12.6 609-004-000-034					✔	✔	✔
2.12.7 609-004-000-036					✔	✔	✔

Notes for Table 5 (see the next page)

Notes for Table 5

1. VibroSmart VSV300 device 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 DMS 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 these versions of VibroSmart VSV300 firmware requires a two-step process:

> (i) All VSI010 devices in the DMS should be upgraded to the latest .xmsifw firmware and all VSV300 devices in the DMS should be upgraded to the latest .xtranfw firmware.
> Note: It is necessary to wait until these VibroSmart DMS modules have automatically restarted after the firmware update before continuing, that is, for up to 10 minutes (up to 5 minutes for the firmware update and up to 5 minutes for the duration of the restart (reboot)).

> (ii) Then all VSN010 devices in the DMS should be upgraded to the latest .redboxfw firmware.

As these versions of VibroSmart DMS device firmware enable the rapid spanning tree protocol (RSTP), this sequence is necessary in order to avoid broadcast storms on the network.

3. Updating to this version of VibroSmart VSV300 firmware requires a specific process:

Notes:
For a VibroSmart DMS consisting of different types of device, the devices should be updated in the following order: first VSN010 real-time Ethernet switches, then VSV300 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 DMS devices should be re-activated and the VibroSmart DMS devices should be restarted.

Procedure:
(1) Ensure that a copy of the configuration for the VibroSmart DMS 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 DMS devices), VibroSight Configurator can be used to obtain a copy of the configuration as follows:
• For a VibroSmart DMS using a VibroSight Server, the **File > Open > Server / Database** command can be used to read the configuration from the VibroSight Server.
• For a VibroSmart DMS not using a VibroSight Server (that is, a "stand-alone" VibroSmart DMS), the **File > Open > Device** command can be used to read the configuration directly from the VibroSmart DMS modules.
Then the **File > Save As > File** command can be used to store a copy of the configuration for the VibroSmart DMS.

 (2) Start VibroSight System Manager, select the device or devices of the same type to be updated (for example, VSV300 modules) and run the Change Firmware command.
When updating multiple VibroSmart DMS 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 DMS (see step (1)), then 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 DMS 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 DMS devices can be inconsistent and should be ignored. Normal LED behaviour resumes after the firmware update is complete (after step (7)).

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.

For VibroSmart DMS 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 DMS is available before updating the firmware of any of the VibroSmart DMS modules used in the DMS.

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

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

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

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

Update the firmware on a VibroSight device using the [icon] **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.

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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.

To change multiple VibroSmart DMS 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 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 ![floppy disk icon] **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.meggittsensingsystems.com

7.2 Technical support

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

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

7.3 Sales and repairs support

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

- New products
- Spare parts
- Repairs.

Appendix

VibroSight software and Windows operating system compatibility

	Windows XP and Windows Server 2003 R2	Windows Vista and Windows Server 2008	Windows 7 and Windows Server 2008 R2	Windows 8 and Windows Server 2012
VibroSight software compatible?	Yes, but not recommended for new installations as Microsoft support for Windows XP SP3 ended on 08 June 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	.NET Framework 4.5	.NET Framework 4.5	.NET Framework 4.5
VibroSight 2.12.0 or later	.NET Framework 4 and .NET Framework 2.0 [See note]	.NET Framework 4.5 and .NET Framework 2.0 [See note]	.NET Framework 4.5 and .NET Framework 2.0 [See note]	.NET Framework 4.5 and .NET Framework 2.0 [See note]

Note: Since Microsoft .NET Framework 3.5 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).