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RELEASE NOTES

vibro-meter®

VibroSight® software version 7.4

VibroSight
Machinery Protection & Condition Monitoring Software

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PREFACE

About these release notes

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

- VibroSight software version 7.4.0
  (part numbers (PNRs) software license: 608-001-000-001/Codes
  and software: 609-010-000-001 on physical media (USB device (flash drive/key))).

This document contains information about changes to the software since the previously released version (VibroSight 7.3.x), 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 machinery protection system (MPS) and/or condition monitoring system (CMS), refer to the following Meggitt SA documentation:

 *VibroSight® software data sheet*
(document reference 660-020-005-227A)

 *Getting started with VibroSight® installation guide*
(document reference 660-010-006-234A)

 *VibroSight® help*

 *VM600^{Mk2} MPC4^{Mk2} + IOC4^{Mk2} machinery protection and condition monitoring module data sheet*
(document reference 268-121)

 *VM600^{Mk2} RLC16^{Mk2} relay module data sheet*
(document reference 268-125)

 *VM600^{Mk2} CPUM^{Mk2} + IOCN^{Mk2} rack controller and communications interface module data sheet*
(document reference 268-135)

 *VM600^{Mk2}/VM600 XMx16 + XIO16T extended condition monitoring modules data sheet*
(document reference 660-020-010-211A)

 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 7.3.0 (document reference 660-010-013-236A)
- VibroSight 7.2.0 (document reference 660-010-013-235A)
- VibroSight 7.1.0 (document reference 660-010-013-234A)
- VibroSight 7.0.0 (document reference 660-010-013-233A)

- VibroSight 6.1.0 (document reference 660-010-013-232A)
- VibroSight 6.0.0 (document reference 660-010-013-231A)
- VibroSight 5.1.0 (document reference 660-010-013-230A)
- VibroSight 5.0.0 (document reference 660-010-013-229A)
- VibroSight 4.1.0 (document reference 660-010-013-228A)
- VibroSight 4.0.0 (document reference 660-010-013-227A)
- VibroSight 3.8.0 (document reference 660-010-013-226A)
- VibroSight 3.7.0 (document reference 660-010-013-225A)
- VibroSight 3.6.0 (document reference 660-010-013-224A)
- VibroSight 3.5.0 (document reference 660-010-013-223A)
- VibroSight 3.4.0 (document reference 660-010-013-222A)
- VibroSight 3.3.0 (document reference 660-010-013-221A)
- VibroSight 3.2.0 (document reference 660-010-013-220A)
- VibroSight 3.1.0 (document reference 660-010-013-219A)
- VibroSight 3.0.0 (document reference 660-010-013-218A)
- VibroSight 2.12.7 (document reference 660-010-013-217A)
- VibroSight 2.12.6 (document reference 660-010-013-216A)
- VibroSight 2.12.5 (document reference 660-010-013-215A)
- VibroSight 2.12.4 (document reference 660-010-013-214A)
- VibroSight 2.12.3 (document reference 660-010-013-213A)
- VibroSight 2.12.2 (document reference 660-010-013-212A)
- VibroSight 2.12.1 (document reference 660-010-013-211A)
- VibroSight 2.12.0 (document reference 660-010-013-210A)
- VibroSight 2.11.6 (document reference 660-010-013-209A)
- VibroSight 2.11.5 (document reference 660-010-013-208A)
- VibroSight 2.11.4 (document reference 660-010-013-207A)
- VibroSight 2.11.3 (document reference 660-010-013-206A)
- VibroSight 2.11.2 (document reference 660-010-013-205A)
- VibroSight 2.11.1 (document reference 660-010-013-204A)
- VibroSight 2.11.0 (document reference 660-010-013-203A)
- VibroSight 2.10.1 (document reference 660-010-013-201A)

- VibroSight 2.10.0 (document reference VIBROSIGHT-RN/E)
- VibroSight 2.9.7 (document reference VIBROSIGHT-RN/E)
- VibroSight 2.9.6 (document reference VIBROSIGHT-RN/E)
- VibroSight 2.9.5 (document reference VIBROSIGHT-RN/E)
- VibroSight 2.9.4 (document reference VIBROSIGHT-RN/E)
- VibroSight 2.9.2 (document reference VIBROSIGHT-RN/E)
- VibroSight 2.9.1 (document reference VIBROSIGHT-RN/E).

Use of the release notes

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:

- **x**.x.x.x, major release identifier – typically incremented once per year.
- x.**x**.x.x, minor release identifier – incremented for each release with typically four scheduled releases per year.
- x.x.**x**.x, “hotfix” release identifier – 0 for a normally scheduled release and incremented for each hotfix release.
- x.x.x.**x**, software build number – for internal use.

For each scheduled release of VibroSight, at least one of the first two digits changes (**x**.**x**.x.x).
For unscheduled “hotfix” releases, which are occasionally required to solve urgent problems, the third 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 SA products that can be used with the VibroSight® software, the following terminology is used in this document:

- VM600Mk2/VM600 modules/card(s) – to refer to VibroSight compatible cards that are installed in a VM600Mk2/VM600 rack (that is, the first generation of VM600 systems).

  The currently available VM600Mk2/VM600 modules/cards that are designed for operation with the VibroSight software are the XMx16 card pairs (XMC16 / XIO16T, XMV16 / XIO16T and XMVS16 / XIO16T) and the CPUx card pairs (CPUR2/IOCR2 and CPUR/IOCR).

  Note: It is important to note that VibroSight Configurator is still used for the configuration of these VM600Mk2/VM600 modules/cards/systems.

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

  Where CPUx is used in this document, it refers to CPUR2/IOCR2 and CPUR/IOCR cards, unless otherwise stated.

- VM600Mk2 module(s) – to refer to VibroSight compatible modules that are installed in a VM600Mk2 rack (that is, the second generation of VM600 systems).

  The currently available VM600Mk2 modules that are designed for operation with the VibroSight software are the MPC4Mk2 + IOC4Mk2 machinery protection and condition monitoring module (standard and SIL versions), the RLC16Mk2 relay module and the CPUMMk2 + IOCNMk2 rack controller and communications interface module.

  Note: It is important to note that VibroSight Protect is used for the configuration of VM600Mk2 modules/systems.

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

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

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

  Where VSV30x is used in this document, it refers to VSV301 and VSV300 modules, unless otherwise stated.

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1 Licensing

Since VibroSight 4.0.0, the ability to install and run VibroSight software updates and upgrades depends on the purchased “Updates and support” package.

NOTE:	VibroSight 7.4.0 is a minor level release and a new license key file is not required for updates and upgrades from VibroSight 7.x.x. However, a new license key file is required for updates and upgrades from VibroSight 3.8.x or earlier.

For further information on licensing or to obtain a new VibroSight license key file, contact Meggitt SA customer support. See 7 Customer support.

2 Features

General

2.1 VM600^{Mk2} SIL alarms and relays

For the SIL versions of the VM600^{Mk2} modules, namely the MPC4^{Mk2} + IOC4^{Mk2} SIL machinery protection and condition monitoring module and the RLC16^{Mk2} SIL relay module, alarms and relays can now be freely configured as latched or not latched as required by the application whereas previously, such elements had to be configured as latched (enforced by software).

Accordingly, in VibroSight Protect, when configuring alarms and/or relays on MPC4^{Mk2} + IOC4^{Mk2} SIL and RLC16^{Mk2} SIL modules, Latched controls are now available to be selected (alarm or relay = latched) or cleared (alarm or relay ≠ not latched) as required.

Previously, when configuring alarms and/or relays on VM600^{Mk2} SIL modules, any alarm and/or relay Latched controls were always automatically configured and displayed as selected (alarm or relay = latched) and could not be changed by the user, as they were effectively unavailable (grayed out).

See the comparison of the different versions of the VM600^{Mk2} modules given in the table below.

Different versions of the VM600^{Mk2} modules	
Standard versions: MPC4^{Mk2} + IOC4^{Mk2} and RLC16^{Mk2}	**SIL versions: MPC4^{Mk2} + IOC4^{Mk2} SIL and RLC16^{Mk2} SIL**
Aluminium (silver) front panels (MPC4^{Mk2} + IOC4^{Mk2}, RLC16^{Mk2})	Aluminum (silver) front panels with yellow/orange “SIL Safety” labeling (MPC4^{Mk2} + IOC4^{Mk2} SIL, RLC16^{Mk2} SIL)
One electronics processing module on MPC4^{Mk2} for all functionality (measurements, management and interfacing)	Three electronics processing modules on MPC4^{Mk2} SIL: • 2 × processing modules for measurements (with measurement redundancy with cross-checking) • 1 × processing module for management and interfacing
Separation (firmware only) of machinery protection system (MPS) and condition monitoring system (CMS) functionality/processing on the MPC4^{Mk2} module	Complete separation (hardware and firmware) of machinery protection system (MPS) and condition monitoring system (CMS) functionality/processing on the MPC4^{Mk2} SIL module
MPC4^{Mk2} + IOC4^{Mk2} module only runs diagnostics	MPC4^{Mk2} + IOC4^{Mk2} SIL module and RLC16^{Mk2} SIL module both run diagnostics
Up to 2 × tachometer (speed) channels	1 × tachometer (speed) channel only
Tachometer (speed) channel signals can be freely shared via the VM600^{Mk2}/VM600 rack’s Tacho bus. Note: MPC4^{Mk2} + IOC4^{Mk2} module can put signals on and take signals from the Tacho bus.	Tachometer (speed) channel signals cannot be as freely shared via the VM600^{Mk2}/VM600 rack’s Tacho bus. Note: MPC4^{Mk2} + IOC4^{Mk2} SIL module can put signals on but cannot take signals from the Tacho bus.
Digital high-pass filter (HPF) cutoff frequency up to 15 kHz	Digital high-pass filter (HPF) cutoff frequency up to 400 Hz
Up to 4 × user-configurable relays (RL1 to RL4) and 1 × common circuit-fault relay (FAULT). Note: In standard applications, use of the FAULT relay is optional.	Up to 4 × user-configurable relays (RL1 to RL4) and 1 × common circuit-fault relay (FAULT). Note: In safety-related applications, use of the FAULT relay is mandatory.
Up to 16 × user-configurable relays (RL1 to RL16) per additional RLC16^{Mk2} / RLC16^{Mk2} SIL module	
User-configurable relays can be configured as normally energized (NE) or normally de-energized (NDE)	User-configurable relays must be configured as normally energized (NE)
Alarms and relays can be configured as latched or not latched	
Machinery is protected when the MPC4^{Mk2} module’s operational mode is Locked or Unlocked	Machinery is protected only when the MPC4Mk2 SIL module’s operational mode is Locked. Note: In safety-related applications, a MPC4^{Mk2} SIL module can only run in the Locked operational mode.

System (MPC4^{Mk2} + IOC4^{Mk2} module and any RLC16^{Mk2} modules) does not enter the safe state (fail-safe mode) if an input channel saturates	System (MPC4^{Mk2} SIL + IOC4^{Mk2} SIL module and an RLC16^{Mk2} SIL module) enters the safe state (fail-safe mode) if an input channel saturates for more than 1 hour
Live insertion and removal of modules (hot-swapping) with automatic reconfiguration is permitted. That is, a replaced MPC4^{Mk2} module will be auto-configured by its associated IOC4^{Mk2} module.	Live insertion and removal of modules (hot-swapping) with automatic reconfiguration is not permitted. That is, a replaced MPC4^{Mk2} SIL module will not be auto-configured by its associated IOC4^{Mk2} SIL module.
Verification of MPC4^{Mk2} module's serial number by the VibroSight® software	Verification of MPC4^{Mk2} + IOC4^{Mk2} SIL module's serial numbers by the VibroSight® software
Protection configuration signature not required	Protection configuration signature (SIL system signature) required
Enforcing of VM600^{Mk2} system (MPC4^{Mk2} + IOC4^{Mk2} and RLC16^{Mk2}) configuration rules by the VibroSight® software	Enforcing of VM600^{Mk2} SIL system (MPC4^{Mk2} + IOC4^{Mk2} SIL and RLC16^{Mk2} SIL) configuration rules by the VibroSight® software

Notes

For standard applications, a VM600^{Mk2} system consists of only standard versions of modules: MPC4^{Mk2} + IOC4^{Mk2} modules and optional RLC16^{Mk2} modules. A CPUM^{Mk2} + IOCN^{Mk2} rack controller and communications interface module can also be used in such systems.
For safety-related applications (functional-safety contexts), a VM600^{Mk2} system consists of only SIL versions of modules: MPC4^{Mk2} + IOC4^{Mk2} SIL modules and optional RLC16^{Mk2} SIL modules.

Standard versions of VM600^{Mk2} modules must be used with other standard VM600^{Mk2} modules, while VM600^{Mk2} SIL modules must be used with other VM600^{Mk2} SIL modules. More specifically, VM600^{Mk2} modules and VM600^{Mk2} SIL modules are not compatible, for example, it is not possible to use a MPC4^{Mk2} module with a IOC4^{Mk2} SIL module, and vice versa.

A VM600^{Mk2} SIL system (MPC4^{Mk2} + IOC4^{Mk2} SIL) allows 1 × tachometer (speed) channel only since both auxiliary channel inputs must be configured and used to provide a single redundant tachometer input in safety-related applications (functional-safety contexts).

A VM600^{Mk2} SIL system (MPC4^{Mk2} + IOC4^{Mk2} SIL and an optional RLC16^{Mk2} SIL) will enter the safe state (fail-safe mode) whenever the module diagnostics (built-in self-test (BIST)) detects an issue that prevents normal operation, for example, hardware faults/problems, significant differences in the measurements from the redundant electronics processing modules, etc.

In the safe state (fail-safe mode), the MPC4^{Mk2} SIL module activates the system-wide VM600^{Mk2} system safety-line control signal in order to automatically drive all system relays and analog outputs to a safe state. The MPC4^{Mk2} SIL module also activates its status relay (common circuit-fault relay (FAULT) relay) in order to allow issues to be remotely detected/indicated. Front-panel LEDS are used for local indication.

2.2 VibroSight Protect Dashboard improvements

The Dashboard tab/page in VibroSight Protect has been refactored in order to improve communications (connections) with VM600^{Mk2} modules, provide more information to the user, and enhance general operation and stability.

As a result, VibroSight Protect now displays the information available from a VM600^{Mk2} module whenever possible – irrespective of the status of any other VM600^{Mk2} modules in the rack. (Previously, VibroSight Protect would not always display the information available from a module, if there was an issue with other modules that prevented their information from being displayed.)

Further, in VibroSight Protect, the VM600^{Mk2} rack image (representation) shown on the Dashboard tab/page (main window, top) now incorporates summary information for each populated rack slot (module position) in the rack.

More specifically, when a VM600^{Mk2} rack is selected in the Dashboard tab/page, icons with tooltips are available for each rack slot in order to allow the user to quickly and easily determine the status of all of the modules in the rack, as follows:

Icon	Tooltip(s)
	“Trying to connect …”
	“The module active configuration doesn’t match the Protect file configuration. A system activation is required to display the module dashboard.”
	“The module is currently not reachable on the network. Please check your network connectivity and ensure that the rack is powered on.” “The firmware on the module is not compatible with this VibroSight software version. Please upgrade the firmware on the module to the latest version or use a compatible version of VibroSight.” “The module is not inserted in the correct rack slot number. Please relocate the module so the Protect configuration matches the physical rack slot assignment.” “The module is not ready. Please wait for the module to finish initializing.” “There is no machinery protection configuration activated in the module.” “The module is not in Running mode. Please use the module front panel buttons to set the Running mode.” “The MPC4 card serial number doesn’t match the serial number in the configuration. Please verify that the MPC4 card manual IP address and serial number are correct.” “The IOC4 SIL card serial number doesn’t match the serial number in the configuration. Please verify that the IOC4 SIL card serial number is correct.” “There is an unknown error on the module.”
	“The module is in fail safe mode. Error: [<error number>] <Error message>”

NOTE:	All of the icons and tooltips given above are applicable to the standard and SIL versions of the MPC4^{Mk2} + IOC4^{Mk2} module. Some of these icons and tooltips are applicable to the CPUM^{Mk2} + IOCN^{Mk2} module. No status information (icons and tooltips) are displayed for the RLC^{Mk2} module.

2.3 VibroSight Vision and the display of states

VibroSight Vision has been improved in order to allow for the easier display of state-related information, that is, status information for modules or systems associated with any state entities (measurements) such as Boolean information, alarm states and/or state groups (OPC UA).

NOTE:	Please note that the Hardware view in VibroSight Vision (and VibroSight Mimic) has been renamed to the System view, as part of this work.

Accordingly, in VibroSight Vision's System view or Machinery view (left), when a module or other system component is selected in the top pane, then the available measurements are displayed in the bottom pane. Similarly, if an OPC UA states group node is selected in the top pane, then the corresponding OPC UA states are displayed in the bottom pane.

Further, the search box at the top of the measurements pane (bottom) allows for the filtering of the available measurements/states. For example, typing state in the search measurements box will result in only state entities (and any other measurements containing the "state") being displayed.

Note: State entities are indicated by a double circle icon ( ) in the System view and Machinery view windows (bottom pane).

In VibroSight Vision, state entities (measurements) are treated like any other data type in VibroSight. For example, double-clicking on a state entity in the System view or Machinery view window (bottom pane) will display the state-related information for the configured time range in a Trend plot. State entities can also be dragged to existing plots in the usual way in order to add entities as new curves in the plot, with a dedicated legend entry, etc.

Note: The Trend plot (Time/APHT) is the default plot type for the display of live state entity data while the Trend plot or the Long waveform plot can be used for historical state entity data.

In the plot, a state entity data curve is displayed as a series of straight lines with two dots/points (with the same timestamp) for every state value change: one dot for the value before the change and one dot for the value after the change.

In the plot, the X-axis uses time while the Y-axis automatically uses the range of possible values (states) for the displayed state entity or entities.

Also, the contents of a Trend plot or a Long waveform plot containing state entity data can be export in the usual way (plot window, right-click and Export plot data).

See also 2.4 New VibroSight Mimic indicator.

2.4 New VibroSight Mimic indicator

In VibroSight Mimic, a new indicator has been added in order to allow the display of system information:

- State indicator – for the display of status information for modules or systems, that is, it can be associated with any state entities (measurements) such as Boolean information or alarm states.
  Note: State entities are indicated by a double circle icon ( ) in the System view and Machinery view windows.

In addition, when system data is enabled in the System view (System view window, right-click and Show system data), various state entities such as the status of VibroSight Protect alarm controls (danger bypass, trip multiply), logical function status, relay status, sensor status and much more can also be displayed.

When VibroSight Mimic is in the Edit mode, the Boolean indicator is available in the Toolbox window that is displayed (right). To add an indicator, or any other Mimic control to a Mimic document, drag a control from the toolbox to the main document (centre). To associate (link) a machine/system component with a Mimic indicator, drag the machine/system component from the Machinery (or Hardware) view (left) to the indicator in the main document (centre). To configure the Mimic indicator, use the Properties window that is displayed (right).

See also 2.3 VibroSight Vision and the display of states.

VM600^{Mk2} modules

2.5 MPC4^{Mk2} + IOC4^{Mk2} module – hardware (standard and SIL versions)

The MPC4^{Mk2} + IOC4^{Mk2} machinery protection and condition monitoring module and the RLC16^{Mk2} relay module are available in different versions – standard and SIL – as follows:

- MPC4^{Mk2} + IOC4^{Mk2} and RLC16^{Mk2} – these are the standard versions of the modules, suitable for most applications.
  Note: PNRs 600-041 for the MPC4^{Mk2}, 600-043 for the IOC4^{Mk2} and 600-045 for the RLC16^{Mk2}.
- MPC4^{Mk2} + IOC4^{Mk2} SIL and RLC16^{Mk2} SIL – these are the SIL safety versions of the modules, suitable for critical applications demanding the highest level of protection.
  Note: PNRs 600-040 for the MPC4^{Mk2} SIL, 600-042 for the IOC4^{Mk2} SIL and 600-044 for the RLC16^{Mk2} SIL.

See also 2.6 MPC4^{Mk2} + IOC4^{Mk2} module – firmware and 2.7 MPC4^{Mk2} + IOC4^{Mk2} SIL module – firmware.

2.6 MPC4^{Mk2} + IOC4^{Mk2} module – firmware

NOTE:	Standard versions of firmware are for use with the MPC4^{Mk2} + IOC4^{Mk2} module only (that is, PNR 600-041 for the MPC4^{Mk2}).

Updated VM600^{Mk2} MPC4^{Mk2} + IOC4^{Mk2} machinery protection and condition monitoring module firmware with the following main improvements:

Machinery protection firmware: 640-025-009-001

NOTE:	VM600^{Mk2} MPC4^{Mk2} machinery protection firmware (640-025-009-001) is compatible with both versions of the MPC4^{Mk2} module (PNRs 600-041-000-vvv and 600-041-001-vvv).

Features:

- Module relays now activate (“trip”) for a minimum time of 500 milliseconds.
  Note: This makes it easier for external third-party systems such as a DCS or PLC to reliably detect relay activation, even where relay latching is not used.

Bug fixes:

- The alarm bypass (AB) signal received via the discrete signal interface (DSI), that is, an external signal via the IOC4^{Mk2} module’s J2 connector, is incorrectly being latched if the Alarm reset (AR) button on a CPUM^{Mk2} module in the same rack is used (when the alarm bypass (AB) is active).
- Alarm events were being evaluated and generated during the stabilization phase.
- Overspeed and underspeed flags were not being raised when speed was outside of the tracking range (for signal processing using order tracking).
- Shaft absolute vibration processing and measurements were incorrect (due to constituent bearing absolute vibration processing not being integrated to the same level as constituent shaft relative vibration processing).
- Module could enter Power-up mode from Operational mode (unlocked (maintenance operating mode)) when being reconfigured.
- Sensor/channel bypass was not working properly under all circumstances, notably for dynamic channels using auxiliary channels configured with two speed measurements (Dual shaft) as speed references.

Restrictions:

- Compatible with VibroSight 7.4.

See also 5.2 VM600Mk2/VM600 modules/cards.

Condition monitoring firmware: 640-033-005-000

Bug fixes:

- Dual-channel processings with many frequency domain extractions were not being indexed correctly, resulting in some configurations being refused even though they were valid.
- Overspeed and underspeed flags were not being raised when speed was outside of the tracking range (for signal processing using order tracking).
- Sensor/channel bypass was not working properly under all circumstances, notably for dynamic channels using auxiliary channels configured with two speed measurements (Dual shaft) as speed references.

Restrictions:

- Compatible with VibroSight 7.4.

See also 5.2 VM600Mk2/VM600 modules/cards.

2.7 MPC4^{Mk2} + IOC4^{Mk2} SIL module – firmware

NOTE:	SIL versions of firmware are for use with the MPC4^{Mk2} + IOC4^{Mk2} SIL module only (that is, PNR 600-040 for the MPC4^{Mk2} SIL).

Updated VM600^{Mk2} MPC4^{Mk2} + IOC4^{Mk2} SIL machinery protection and condition monitoring module firmware with the following main improvements:

SIL machinery protection firmware: 640-024-001T006

Features:

- Module relays now activate (“trip”) for a minimum time of 500 milliseconds.
  Note: This makes it easier for external third-party systems such as a DCS or PLC to reliably detect relay activation, even where relay latching is not used.

Bug fixes:

- Alarm events were being evaluated and generated during the stabilization phase.
- Overspeed and underspeed flags were not being raised when speed was outside of the tracking range (for signal processing using order tracking).
- Shaft absolute vibration processing and measurements were incorrect (due to constituent bearing absolute vibration processing not being integrated to the same level as constituent shaft relative vibration processing).
- Module could enter Power-up mode from Operational mode (unlocked (maintenance operating mode)) when being reconfigured.
- Sensor/channel bypass was not working properly under all circumstances, notably for dynamic channels using auxiliary channels configured with two speed measurements (Dual shaft) as speed references.

Restrictions:

- Compatible with VibroSight 7.4.

See also 5.2 VM600Mk2/VM600 modules/cards.

NOTE:	It is important to be aware that the current SIL versions of the VM600^{Mk2} modules are “beta” versions for test and evaluation only. The SIL certification process is ongoing and SIL certification is *pending*, so the MPC4^{Mk2} module cannot be Locked (that is, cannot be put into the safety/secure operating mode (of the Operational mode)). Accordingly, firmware upgrades to final versions of SIL-specific firmware will be required before a VM600^{Mk2} SIL system containing MPC4^{Mk2} + IOC4^{Mk2} SIL modules can be used in critical safety-related applications.

3 Solved problems and bug fixes

3.1 General improvements and bug fixes

General stability improvements and bug fixes across the VibroSight 7.4.0 software.

3.2 VibroSight Vision displays temperature values from XMx16 + XIO16T modules incorrectly

In VibroSight Vision, for XMx16 + XIO16T extended condition monitoring modules with dynamic input channels / processing blocks configured to provide temperature measurements, incorrect temperature values (DC extractions / data entities) were displayed due to incorrect conversions between K (as used internally by VibroSight for temperature) and °C.

3.3 VibroSight Server air-gap processing errors with XMx16 + XIO16T modules

When air gap and flux processing was configured for XMx16 + XIO16T extended condition monitoring modules but one or more Gap P%n measurements (data extractions) were disabled for one or more probes (air-gap sensors), the VibroSight Server experienced post-processing errors and was unable to provide any air-gap data to VibroSight Vision.

3.4 VibroSight Capture not opening certain older configurations

VibroSight Capture was not opening certain older configurations, typically configurations containing multiple machine trains characterised by a number of larger machinery components (such as generators and hydro turbines).

3.5 VibroSight Capture not opening older configurations containing logical functions with empty gates

VibroSight Capture was not opening older configurations (VibroSight 7.1.x) containing logical functions with empty input gates.

3.6 VibroSight Capture Connect tab/page not distinguishing axial sensors

In VibroSight Capture, on the Connect tab/page used for associating sensors with machine train components, when an axial sensor (that is, a sensor configured in VibroSight Protect with an axial mounting position (orientation)) was connected with a machinery component, nothing was displayed inside the sensor position icon (circle) added to the machine train image (top).

This has been corrected so that the added sensor position icon is now filled with the color associated with the applicable sensor family – in order to make the sensor position icon more visible and provide additional information about the sensor to the user.

3.7 VibroSight Capture not activating a system due to module reboot time

VibroSight Capture was not able to activate a configuration on a system due to the time required for VM600^{Mk2} MPC4^{Mk2} modules to reboot.

NOTE:	This particular issue was noticed following an upgrade from VibroSight 7.1.x to VibroSight 7.2.x.

3.8 VibroSight Capture database logging rule measurements not filtering as expected

In VibroSight Capture, on the Data tab/page used for managing system data, under Database logging rules, when configuring Measurements for a logging rule, the filtering based on configured system data was not working as expected.

This was characterised by the consistency checker incorrectly reporting errors/warnings that should not exist, for example, "`The logging rule … measurements filter configured matches 0 measurements.`" even though a configured machine train name was correct and used correctly by a measurements logging rule.

3.9 VibroSight Capture slow to create or change VibroSight Servers

In VibroSight Capture, the time taken to create a VibroSight Server (File > Save as server) and/or apply changes to a server (File > Apply changes to active configuration) could be too long. That is, operations expected to take seconds could take minutes, depending on the configuration (notably, the evaluation of data logging rules).

3.10 VibroSight Vision issue displaying a measurement when connected to two VibroSight Servers

In VibroSight Vision, when connected to two VibroSight Servers, it was not possible to add a measurement (data entity) to a plot. This was characterised by VibroSight Vision reporting "An `unexpected error occurred. (Unexpected Error – NullReferenceException)`".

3.11 VibroSight Vision incorrectly showing the direction of rotation in plots as counter clockwise (CCW)

In VibroSight Vision, Polar plots and Orbit plots were displayed with the direction of rotation incorrectly shown as counter clockwise (CCW), even when the direction of rotation had been configured as clockwise in VibroSight Capture (Machinery tab/page, Machine train properties).

3.12 VibroSight Capture condition monitoring based on X-Y shaft bearing absolute vibration processing or X-Y shaft relative vibration processing has specific speed reference requirements

In VibroSight Capture, when configuring condition monitoring processing based on X-Y shaft bearing absolute vibration processing or X-Y shaft relative vibration processing, certain measurements require that a Reference speed (tacho) is configured for the individual X and Y channels (in VibroSight Protect) in order for the condition monitoring configuration to be accepted and work as expected.

More specifically, the following measurements require a configured reference speed on both X and Y processing blocks (individual X and Y channels):

- Filtered orbits
- Unfiltered orbits
- Full-spectrum frequency-domain measurements configured in function of nX.

The VibroSight software has been improved, such that if the required Reference speed (tacho) is not configured as required for these measurements, then the following activation error messages are displayed:

- Filtered orbit: "`The speed reference must be set when the input channel is used in a dual channel processing that contains filtered orbits.`"
- Unfiltered orbit: "`The speed reference must be set when the input channel is used in a dual channel processing that contains unfiltered orbits.`"
- Full-spectrum frequency-domain measurements configured in function of nX: "`The speed reference must be set when the input channel is used in a dual channel processing that contains full spectrum frequency domain measurements configured in orders.`".

3.13 VibroSight Vision displays an incorrect message when trying to connect to an incompatible VibroSight Server via an IP address

In VibroSight Vision, when trying to connect to an incompatible VibroSight Server (File > Data source manager) via an IP address (Running at the IP address), VibroSight Vision will display a message to the effect that the server cannot be reached ("`Server not available`") when it should display a message to the effect that the server is not compatible ("`Incompatible version`").

3.14 VibroSight Server using too much memory

Depending on the configuration, VibroSight Server could use too much memory when running regular incremental copy jobs (periodic File storage) as part of the server's data management.

For larger systems consisting of multiple VM600/VM600^{Mk2} racks and running frequent file storage operations (of the order of 10), the VibroSight Server could consume >10 GB of computer memory, leading to slow operation of the computer/system and/or resulting in the system failing to respond (that is, crashing).

3.15 VibroSight Protect relay configuration problem after copying logical functions

In VibroSight Protect, after copying a logical function on a MPC4^{Mk2} module for reuse as the basis of another logical function (via the configuration toolbar, left), relays on a RLC16^{Mk2} module could not be configured to use these logical functions as inputs.

This problem was characterised by VibroSight Protect reporting "`Error encountered: The selected input cannot be assigned since there are no RAW bus or OC bus lines available or one of the device doesn't support the required bus to drive this relay.`".

3.16 VibroSight Capture performance issues

In VibroSight Capture, there were a number of performance issues that became apparent when working on larger systems consisting of multiple VM600/VM600^{Mk2} racks containing multiple machine trains characterised by a number of larger machinery components.

For example, on the Machinery tab/page used for developing/configuring machine train images/properties (and facilities/locations), when CTRL+click and/or SHIFT+click were used to select multiple different machinery components across multiple different machine trains, VibroSight Capture could fail to respond (that is, crash).

Similarly, VibroSight Capture could be slow to respond (or even crash) during certain routine operations such as running a consistency check, saving the configuration as a server or applying configuration changes.

3.17 VibroSight Capture OPC UA device authentication settings with optional password

In VibroSight Capture, on the Systems tab/page used for configuring the devices used to import data into a VibroSight System, when adding an OPC UA device and configuring its Authentication settings, it was not possible to configure User name or Certificate based settings without adding an associated password (as the password field had to be completed in order to be able to close the Authentication settings window using the OK button).

This has been corrected such that it is now possible to configure User name or Certificate based settings without a password (that is, the password is now optional for OPC UA device authentication).

4 Known issues

4.1 Security risks

A number of Open web application security project (OWASP) security risks have been identified related to a UPC UA library used by the VibroSight software. This UPC UA library is from a third-party (Softing AG, Softing Industrial Automation GmbH), who have recently implemented a fix. However the improved UPC UA library is not included in the latest release of VibroSight.

For information, the specific issues that have been identified are:

- CVE-2022-29862: An infinite loop in OPC UA .NET Standard Stack 1.04.368 allows a remote attackers to cause the application to hang via a crafted message
- CVE-2022-29863: OPC UA .NET Standard Stack 1.04.368 allows remote attacker to cause a crash via a crafted message that triggers excessive memory allocation.
- CVE-2022-29864: OPC UA .NET Standard Stack 1.04.368 allows a remote attacker to cause a server to crash via a large number of messages that trigger Uncontrolled Resource Consumption.
- CVE-2022-29865 : OPC UA .NET Standard Stack 1.04.368 allows a remote attacker to bypass the application authentication check via crafted fake credentials
- CVE-2022-29866: OPC UA .NET Standard Stack 1.04.368 allows a remote attacker to exhaust the memory resources of a server via a crafted request that triggers Uncontrolled Resource Consumption.

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 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.

4.4 Length limitation of VibroSight Server instance names

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

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

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

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

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

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

4.5 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).

4.6 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 modules/cards and VibroSmart devices) available on the network.

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

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

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

4.7 VibroSight Mimic backwards compatibility

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

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

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

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

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

4.8 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.

4.9 Duplicate events

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

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

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

4.10VibroSight Server status indicators

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

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

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

4.11 XMx16 card pre-logging

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

4.12 Potential TCP port 50000 conflict

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

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

Accordingly, any potential TCP port 50000 conflicts should be resolved before the VibroSight software can be successfully run.

NOTE:	The VibroSight software’s TCP and UDP port requirements are described in detail in the “Software installation” section of the latest *Getting started with VibroSight installation guide*. See section *4. After installing VibroSight*.

4.13 Problems using shared network drives/locations for VibroSight data management

On computers running Windows 10 or Windows Server 2016, problems can be experienced using shared network drives/locations with VibroSight’s integrated data management operations such as Offline data storage and Database backup (configured in VibroSight Configurator) due to Windows security policies and restrictions.

Such problems are typically characterised by the individual copy commands scheduled and run on a VibroSight Server (corresponding to Offline data storage and Database backup operations) failing to run correctly. More specifically, on the Data Management tab of a VibroSight Server, scheduled incremental copy jobs (Type: Copy) are typically displayed with Status: Error, while the Log Messages tab of the server display typically displays messages such as “Errors during the copy operation” and “Uncaught error IOException occurred in task ‘Task “DataRepositoryCopyDataMan…”.

NOTE:	For Windows 10 and Windows Server 2016, Microsoft improved network security with a change to the rules governing shared network drives/locations. More specifically, a shared network drive/location is now only accessible and visible to the user who created the shared network drive/location, even if the user is an Administrator.

Accordingly, in order to avoid such problems, a shared network drive/location on Windows 10 and Windows Server 2016 computers that is required to be used by VibroSight’s integrated data management operations should be created as a “system account” in order to ensure that the required Windows Services can access the shared resource (drive/location).

This can easily be done using Microsoft's PsExec utility. For example, by running the following command (as an Administrator):

PsExec.exe -i -s cmd.exe /C "net use Z: \\server\share"

Where the net use command is used to map the \\computer name\sharename (\\server\share) to the devicename (Z:).

NOTE:	For Windows 10 and Windows Server 2016, Microsoft improved network security with a change to the rules governing shared network drives/locations. More specifically, a shared network drive/location is now only accessible and visible to the user who created the shared network drive/location, even if the user is an Administrator.

5 Compatibility

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

- The required Microsoft Visual C++ Redistributable Package (see section 0) must be manually installed before VibroSight can be installed. If it is not detected, then the VibroSight installer will exit the installation and VibroSight is not installed.
- The required Microsoft .NET Framework (see section 5.1.2) is automatically installed by the VibroSight installer if it is not detected.
- The required OPC Core Components Redistributable (see section 0) software is automatically installed on the computer by the VibroSight installer if it is not detected.
- The required OPC UA Local Discovery Server (see section 0) software is automatically installed on the computer by the VibroSight installer if it is not detected.

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

5.1 VibroSight software

VibroSight 7.4.0 is a minor level release and replaces VibroSight 7.3.x.

Compatibility with existing VibroSight data repositories (databases) is achieved by automatically applying an internal data migration process from existing VibroSight databases (VibroSight historical data folders (*.vshdf) and/or VibroSight historical data archives (*.vshda)), if and when required.

NOTE: Starting with VibroSight 7.4.0, it is no longer possible to migrate older machinery monitoring projects using Sybase SQL Anywhere databases to VibroSight historical data repositories.

In order to migrate such older projects using Sybase SQL Anywhere databases to VibroSight historical data repositories, VibroSight 7.3.x or earlier (also VibroSight 3.x.x or later) must be used.

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

Therefore, it is important to note that:

- New machinery monitoring projects created with VibroSight 7.x.x (VibroSight 3.x.x or later) will automatically use VibroSight historical data repositories.

- For existing machinery monitoring projects using VibroSight historical data repositories, the VibroSight historical data repositories are automatically updated if and when required (for example, to support new features).
- For existing machinery monitoring projects using Sybase SQL Anywhere databases (that is, created with versions of VibroSight earlier than VibroSight 3.0.0), the project must be manually migrated from Sybase SQL Anywhere databases to VibroSight historical data repositories.

  Note: This data migration must be done using VibroSight 7.3.x or earlier (also VibroSight 3.x.x or later) – before they can be used with VibroSight 7.x.x (also VibroSight 3.x.x or later).
- Existing machinery monitoring projects using VibroSight OPC Servers that were created with versions of VibroSight earlier than VibroSight 2.12.7 must manually migrate their VibroSight OPC Servers before they can be used with VibroSight 7.x.x (VibroSight 3.x.x or later).
  It is very important to note that migrating a VibroSight OPC Server from VibroSight 2.12.7 or earlier to VibroSight 7.x.x (VibroSight 3.x.x or later) or later requires that certain steps must be performed using the existing version of VibroSight (that is, VibroSight 2.12.7 or earlier) BEFORE it is removed (uninstalled).

NOTE: The manual migration of an existing machinery monitoring project to VibroSight 7.3.x or earlier (also VibroSight 3.x.x or later) is described in detail in the "Data migration" section of the *Getting started with VibroSight installation guide*
(Note: For example, using the VibroSight 7.3.x software – see the previous version of the installation guide: version 33.)

The manual migration of a VibroSight OPC server is described in detail in the "VibroSight OPC Server migration" sections of the latest *Getting started with VibroSight installation guide*
(Note: For example, using the VibroSight 7.4.x software – see the latest version of the installation guide: version 34.)

5.1.1 Microsoft Windows operating systems

VibroSight 7.x.x (VibroSight 3.x.x or later) or later is compatible with 32-bit versions and 64-bit versions of Microsoft ® Windows ® operating systems.

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

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

5.1.2 Microsoft .NET Framework

For most Windows operating systems, VibroSight 7.4.x requires that the .NET 7.0 SDK and the Microsoft .NET Framework 4.7.2 or later is installed.

NOTE: VibroSight 7.4.x requires Microsoft .NET 7.0 SDK (v7.0.306 or later).

VibroSight 7.x.x requires the Microsoft .NET Framework 4.7.2.

If Microsoft .NET SDK v7.0.306 or later is not already installed on the computer that will run VibroSight, then it must be installed manually by the user using one of Microsoft's .NET SDK installers.

If Microsoft .NET Framework 4.7.2 is not already installed on the computer that will run VibroSight, then the VibroSight installer will detect this and automatically install it as part of the VibroSight software installation process.

See the Appendix of these release notes for further information on VibroSight software and Microsoft .NET requirements. Refer also to the latest  *Getting started with VibroSight installation guide*.

5.1.3 Microsoft Visual C++ Redistributable Package

VibroSight 7.x.x (VibroSight 3.x.x or later) requires that the Microsoft Visual C++ Redistributable Package for Visual Studio 2015 is installed, in order to install and register the Visual C++ libraries used by VibroSight.

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

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

5.1.4 OPC Core Components Redistributable

VibroSight 7.x.x (VibroSight 3.x.x or later) requires that the OPC Core Components Redistributable is installed, in order to configure and run VibroSight OPC Clients and VibroSight OPC Servers correctly: the redistributable must be installed on OPC client computers in order to allow connections to remote OPC servers and it must be installed on OPC server computers in order to allow OPC clients to browse for running OPC servers.

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

The 32-bit version of the OPC Core Components Redistributable ("OPC Core Components Redistributable (x86) 106.0") must be installed on 32-bit Windows computers.

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

5.1.5 OPC UA Local Discovery Server

VibroSight 7.x.x or later requires that the OPC UA Local Discovery Server is installed, in order to expose OPC UA servers for discovery and enable communications with OPC UA clients.

If the required OPC UA Local Discovery Server is not pre-installed, then the VibroSight installer will detect this and automatically install it as part of the VibroSight software installation.

5.1.6 Sybase SQL Anywhere 11 software

VibroSight 7.x.x (VibroSight 3.x.x or later) does not include any Sybase SQL database software.

Starting with VibroSight 7.4.0, it is no longer possible to migrate older machinery monitoring projects using Sybase SQL Anywhere databases to VibroSight historical data repositories.

For further information on VibroSight and Sybase SQL Anywhere, including the manual migration of older projects using Sybase SQL Anywhere to VibroSight, refer to VibroSight 7.3.x or earlier release notes and/or installation guide.

See also 5.1 VibroSight software.

5.1.7 Dell Backup and Recovery software

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

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

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

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

5.1.8 MatrikonOPC software

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

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

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

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

5.2 VM600^{Mk2}/VM600 modules/cards

5.2.1 Module/card firmware

There are some firmware upgrades for VM600^{Mk2}/VM600 modules (cards) corresponding to VibroSight 7.4.0.

The latest firmware for the VM600^{Mk2} MPC4^{Mk2} module is:

- Machinery protection: `640-025-009-001.Mpc4g2Fw` (updated)
- Condition monitoring: `640-033-005-000.VxeFw` (updated)
- Recovery: `640-031-006-000.Mpc4g2Fw` (no change)
- Proof test: `640-032-004-000.VxeFw` (no change).

See 2.5 MPC4^{Mk2} + IOC4^{Mk2} module – hardware and 2.6 MPC4^{Mk2} + IOC4^{Mk2} module – firmware.

The latest firmware for the VM600^{Mk2} MPC4^{Mk2} SIL module is:

- Machinery protection: `640-024-001T006.SafeMpc4g2Fw` (updated)
- Condition monitoring: `640-033-005-000.VxeFw` (updated)
- Recovery: `640-026-001-000.SafeMpc4g2Fw` (no change)
- Proof test: `640-032-004-000.VxeFw` (no change).

See 2.5 MPC4^{Mk2} + IOC4^{Mk2} module – hardware and 0

MPC4^{Mk2} + IOC4^{Mk2} SIL module – firmware.

The latest firmware for the VM600^{Mk2} CPUM^{Mk2} module remains:

- Base system: `base-system-640-034-003-001.tgz`.

The latest firmware for the VM600 CPUR2 card remains:

- Applications: `applications-640-015-001-006.tgz`
- Base System : `base-system-640-014-001-006.tgz`.

The latest firmware for the VM600 CPUR card remains:

- Applications: `applications-640-012-001-005.tgz`
- Base System: `base-system-640-011-001-005.tgz`.

The latest firmware for the VM600[Mk2]/VM600 XMC16, XMV16 and XMVS16 cards remains:

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

Therefore, for current versions of VibroSight and VM600[Mk2]/VM600 systems, firmware upgrades are required.

5.3 VibroSmart devices

5.3.1 Module firmware

There are no firmware upgrades for VibroSmart modules and devices corresponding to VibroSight 7.4.0.

The latest firmware for the VSI010 module remains:

- `642-002-000-014.xmsifw`

The latest firmware for the VSN010 device remains:

- `642-004-000-012.redboxfw`

The latest firmware for the VSV30x module remains:

- `642-001-000-020.xtranfw`

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

6 Upgrade procedure

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

NOTE:	Before starting a VibroSight system update, it is strongly recommended to verify the version of firmware(s) running on the related hardware (VM600^{Mk2}/VM600 and/or VibroSmart modules/devices) in order to establish if any firmware changes/upgrades are also required. See 6.2.3 Updating the firmware using VibroSight System Manager.

IMPORTANT NOTE:	Before upgrading the firmware of any of the hardware (VM600^{Mk2}/VM600 and/or VibroSmart modules/devices) used in a VibroSight system, it is strongly recommended to ensure that a copy of the configuration for the system is available – in case it is necessary to reconfigure the system after the upgrade. See 6.2.3 Updating the firmware using VibroSight System Manager.

6.1 VibroSight software user settings

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

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

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

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

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

6.2 Updating VibroSight-compatible hardware

Appropriate files and tools are included in the installation package to allow VM600^{Mk2}/VM600 and/or VibroSmart modules/devices to be upgraded to the latest firmware, in order to take advantage of improvements to the VibroSight software.

NOTE: Updating the firmware for VM600^{Mk2}/VM600 and/or VibroSmart modules/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. It is therefore strongly recommended to change the firmware of VibroSight-compatible hardware only when it is necessary. For example, when the devices must be updated to be compatible with a VibroSight software upgrade.

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.

IMPORTANT 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.

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

6.2.1 VM600^{Mk2}/VM600 module/card firmware

The latest VM600^{Mk2}/VM600 module/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^{Mk2}/VM600 modules/cards is: C:\Program Files\Meggitt\VibroSight\Firmware\VM600

The firmware files for a VM600^{Mk2}/VM600 module/card can be found in the appropriate subfolder and identified by their .tgz file name extension.

For example, the MPC4 Mk2 subfolder contains the firmware components for use by the MPC4^{Mk2} module (standard versions) and the MPC4 Mk2 SIL subfolder contains the firmware components for use by the MPC4^{Mk2} SIL module (SIL versions). Any additional firmware updates received from Meggitt SA should also be stored in these directories.

Table 1 shows the compatibility between VibroSight software and VM600^{Mk2} MPC4^{Mk2} module hardware (that is, MPC4^{Mk2} firmware) for later versions of the MPC4^{Mk2} (PNRs 600-041-001-002 and 600-041-000-002).

Table 2 shows the compatibility between VibroSight software and VM600^{Mk2} MPC4^{Mk2} module hardware (that is, MPC4^{Mk2} firmware) for the original version of the MPC4^{Mk2} (PNR 600-041-000-001) – no longer supported. See 2.5 MPC4^{Mk2} + IOC4^{Mk2} module – hardware.

Table 3 shows the compatibility between VibroSight software and VM600^{Mk2} MPC4^{Mk2} SIL module hardware (that is, MPC4^{Mk2} SIL firmware).

IMPORTANT NOTE:	When changing (upgrading) all firmware components on a VM600^{Mk2} MPC4^{Mk2} module, the module must be in the Recovery mode in order to change the proof test firmware. It is important to note that entering the Recovery mode clears the modules configuration, which means that the module (system) must be reconfigured after leaving the Recovery mode – before normal system operation can be resumed. Accordingly, it is strongly recommended to ensure that a copy of the configuration for the system is available before upgrading a system. For example, the VibroSight software can be used to connect to a system (which will automatically read/download the system configuration) and save a copy of the configuration.

Table 4 shows the compatibility between VibroSight software and VM600^{Mk2} CPUM^{Mk2} module hardware (that is, CPUM^{Mk2} firmware).

Table 5 shows the compatibility between VibroSight software and VM600 CPUR2 card hardware (that is, CPUR2 firmware).

Table 6 shows the compatibility between VibroSight software and VM600 CPUR card hardware (that is, CPUR firmware).

Table 7 shows the compatibility between VibroSight software and VM600 XMx16 card hardware (that is, XMC16, XMV16 and XMVS16 firmware).

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

Table 1: VibroSight software and VM600^{Mk2} MPC4^{Mk2} firmware compatibility
for later standard versions of the MPC4^{Mk2} (PNRs 600-041 / 600-041-001-002 and 600-041-000-002)

	VM600^{Mk2} MPC4^{Mk2} firmware					
VibroSight software version Part number (PNR)	Machinery protection firmware (`640-025-vvv-ppp.Mpc4g2Fw`)					
	`640-025-004-003`	`640-025-005-000`	`640-025-006-000`	`640-025-007-001`	`640-025-008-000`	`640-025-009-001`
	Condition monitoring firmware (`640-033-vvv-ppp.VxeFw`)					
	---	`640-033-001-000`	`640-033-002-000`	`640-033-003-000`	`640-033-004-000`	`640-033-005-000`
	Recovery firmware (`640-031-vvv-ppp.Mpc4g2Fw`)					
	`640-031-003-006`			`640-031-005-001`	`640-031-006-000`	
	Proof test firmware (`640-032-vvv-ppp.VxeFw`)					
	`640-032-001-001`			`640-032-003-000`	`640-032-004-000`	
7.0.0 609-010-000-001	✓ See note 1a	✓ See note 1b				
7.1.0 609-010-000-001			✓ See note 2			
7.2.0 609-010-000-001				✓ See note 3		
7.3.0 609-010-000-001					✓ See note 4	
7.4.0 609-010-000-001						✓ See note 5

Notes for Table 1 (see the next page)

Notes for Table 1

1a. For information on these versions of VM600^{Mk2} MPC4^{Mk2} firmware, refer to the VibroSight 7.0 release notes.
A firmware upgrade is required in order to run VibroSight 7.0.0 or later.

1b. For information on these versions of VM600^{Mk2} MPC4^{Mk2} firmware, refer to the VibroSight 7.0 release notes.
A firmware upgrade is required in order to run VibroSight 7.0.0 or later.

2. For information on these versions of VM600^{Mk2} MPC4^{Mk2} firmware, refer to the VibroSight 7.1 release notes.
A firmware upgrade is required in order to run VibroSight 7.1.0 or later.

3. For information on these versions of VM600^{Mk2} MPC4^{Mk2} firmware, refer to the VibroSight 7.2 release notes.
A firmware upgrade is required in order to run VibroSight 7.2.0 or later.

4. For information on these versions of VM600^{Mk2} MPC4^{Mk2} firmware, refer to the VibroSight 7.3 release notes.
A firmware upgrade is required in order to run VibroSight 7.3.0 or later.

5. For information on these versions of VM600^{Mk2} MPC4^{Mk2} firmware, see 2.5 MPC4Mk2 + IOC4Mk2 module – hardware (standard and SIL versions) and 2.6 MPC4Mk2 + IOC4Mk2 module – firmware.
A firmware upgrade is required in order to run VibroSight 7.4.0 or later.

Table 2: VibroSight software and VM600^{Mk2} MPC4^{Mk2} firmware compatibility
for the original standard version of MPC4^{Mk2} (PNRs 600-041 / 600-041-000-001) – no longer supported

	VM600^{Mk2} MPC4^{Mk2} firmware				
VibroSight software version Part number (PNR)	Machinery protection firmware (`640-025-vvv-ppp.Mpc4g2Fw`)				
	`640-025-003-002`	`640-025-004-000`	`640-025-004-003`	`640-025-005-000`	`640-025-006-000`
	Condition monitoring firmware (`640-033-vvv-ppp.VxeFw`)				
	---	---	---	`640-033-001-000`	`640-033-002-000`
	Recovery firmware (`640-031-vvv-ppp.Mpc4g2Fw`)				
	`640-031-003-002`	`640-031-003-004`	`640-031-003-006`		
	Proof test firmware (`640-032-vvv-ppp.VxeFw`)				
	`640-032-001-000`		`640-032-001-001`		
6.0.0 609-004-000-050	✓ See note 1				
6.1.0 609-004-000-051		✓ See note 2			
7.0.0 609-010-000-001			✓ See note 3a	✓ See note 3b	
7.1.0 609-010-000-001					✓ See note 4

Notes for Table 2 (see the next page)

Notes for Table 2

1. This version of VM600^{Mk2} MPC4^{Mk2} (previously referred to as VM600 MPC4G2) firmware is the official launch release of firmware supporting VibroSight Protect and VM600^{Mk2} systems. A firmware upgrade is required in order to run VibroSight 6.0.0 or later – that is, to use VM600^{Mk2} systems in “live” machinery protection system (MPS) applications. Contact Meggitt SA for further information.

2. This version of VM600^{Mk2} MPC4^{Mk2} firmware improves frequency domain measurements (the phase component can be used as the input signal for an analog output), differential expansion (dual taper) processing (the ramp angles for the taper on the shaft are configured separately), auxiliary input channels configured as tacho inputs (appropriate data quality indicators and warning messages, with automatic recovery), and the maximum tacho speed / frequency has been increased. It also includes a number of bug fixes. (Refer to the VibroSight 6.1 release notes for further information.) A firmware upgrade is required in order to run VibroSight 6.1.0 or later.

3a. For information on these versions of VM600^{Mk2} MPC4^{Mk2} firmware, refer to the VibroSight 7.0 release notes.
A firmware upgrade is required in order to run VibroSight 7.0.0 or later.

3b. For information on these versions of VM600^{Mk2} MPC4^{Mk2} firmware, refer to the VibroSight 7.0 release notes.
A firmware upgrade is required in order to run VibroSight 7.0.0 or later.

4. For information on these versions of VM600^{Mk2} MPC4^{Mk2} firmware, refer to the VibroSight 7.1 release notes.
A firmware upgrade is required in order to run VibroSight 7.1.0.

Table 3: VibroSight software and VM600^{Mk2} MPC4^{Mk2} SIL firmware compatibility for the SIL version of the MPC4^{Mk2} (PNRs 600-040 / 600-040-vvv-vvv)

<table>
<tr><td></td><td colspan="2">VM600^{Mk2} MPC4^{Mk2} SIL firmware</td></tr>
<tr><td rowspan="8">VibroSight software version
Part number (PNR)</td><td colspan="2">SIL machinery protection firmware
(640-024-vvv-ppp.SafeMpc4g2Fw)</td></tr>
<tr><td>640-024-001T005</td><td>640-024-001T006</td></tr>
<tr><td colspan="2">Condition monitoring firmware
(640-033-vvv-ppp.VxeFw)</td></tr>
<tr><td>640-033-004-000</td><td>640-033-005-000</td></tr>
<tr><td colspan="2">SIL recovery firmware
(640-026-vvv-ppp.SafeMpc4g2Fw)</td></tr>
<tr><td colspan="2">640-026-001-000</td></tr>
<tr><td colspan="2">Proof test firmware
(640-032-vvv-ppp.VxeFw)</td></tr>
<tr><td colspan="2">640-032-004-000</td></tr>
<tr><td>7.3.0
609-010-000-001</td><td>✓ See note 1</td><td></td></tr>
<tr><td>7.4.0
609-010-000-001</td><td></td><td>✓ See note 2</td></tr>
</table>

Notes for Table 3

1. For information on these versions of VM600^{Mk2} MPC4^{Mk2} SIL firmware, refer to the VibroSight 7.3 release notes.
A firmware upgrade is required in order to run VibroSight 7.3.0 or later.

2. For information on these versions of VM600^{Mk2} MPC4^{Mk2} SIL firmware, see 2.5 MPC4Mk2 + IOC4Mk2 module – hardware (standard and SIL versions) and 0

MPC4Mk2 + IOC4Mk2 SIL module – firmware.
A firmware upgrade is required in order to run VibroSight 7.4.0 or later.

Table 4: VibroSight software and VM600^{Mk2} CPUM^{Mk2} firmware compatibility

	VM600^{Mk2} CPUM^{Mk2} firmware				
VibroSight software version Part number (PNR)	Base-system / Applications firmware (`*.tgz`)				
	`640-034-001-000`	`640-034-001-001`	`640-034-002-000`	`640-034-003-000`	`640-034-003-001`
6.1.0 609-004-000-051	✓ See note 1				
7.0.0 609-010-000-001		✓ See note 2			
7.1.0 609-010-000-001			✓ See note 3		
7.2.0 609-010-000-001				✓ See note 4	
7.3.0 609-010-000-001					✓ See note 5
7.4.0 609-010-000-001					✓

Notes for Table 4

1. This version of VM600^{Mk2} CPUM^{Mk2} firmware is the official launch release of firmware supporting VM600^{Mk2} systems. (Refer to the VibroSight 6.1 release notes for further information.) A firmware upgrade is required in order to run VibroSight 6.1.0 or later.

2. For information on this version of VM600^{Mk2} CPUM^{Mk2} firmware, refer to the VibroSight 7.0 release notes.
A firmware upgrade is required in order to run VibroSight 7.0.0 or later.

3. For information on this version of VM600^{Mk2} CPUM^{Mk2} firmware, refer to the VibroSight 7.1 release notes.
A firmware upgrade is required in order to run VibroSight 7.1.0 or later.

4. For information on this version of VM600^{Mk2} CPUM^{Mk2} firmware, refer to the VibroSight 7.2 release notes.
A firmware upgrade is required in order to run VibroSight 7.2.0 or later.

5. For information on this version of VM600^{Mk2} CPUM^{Mk2} firmware, refer to the VibroSight 7.3 release notes.
A firmware upgrade is not required but is strongly recommended in order to run VibroSight 7.3.0 or later.

Table 5: VibroSight software and VM600 CPUR2 firmware compatibility

	VM600 CPUR2 firmware See note 1				
VibroSight software version Part number (PNR)	Base-system firmware (`*.tgz`)				
	`640-014-001-001`	`640-014-001-002`	`640-014-001-003`	`640-014-001-005`	`640-014-001-006`
	Applications firmware (`*.tgz`)				
	`640-015-001-001`	`640-015-001-002`	`640-015-001-003`	`640-015-001-005`	`640-015-001-006`
4.0.0 609-004-000-046	✓ See note 2	✓ See note 3	✓		
4.1.0 609-004-000-047	✓	✓	✓ See note 4		
5.0.0 609-004-000-048	✓	✓	✓		
5.1.0 609-004-000-049	✓	✓	✓		
6.0.0 609-004-000-050	✓	✓	✓		
6.1.0 609-004-000-051	✓	✓	✓		
7.0.0 609-010-000-001				✓ See note 5	
7.1.0 609-010-000-001					✓ See note 6
7.2.0 609-010-000-001					✓
7.3.0 609-010-000-001					✓
7.4.0 609-010-000-001					✓

Notes for Table 5 (see the next page)

Notes for Table 5

1. VM600 CPUR2 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 CPUR2 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 CPUR2 firmware and includes features such as the management of XMx16 card configurations for applications such as control systems and the implementation of the PROFIBUS protocol for the fieldbus interfaces. A firmware upgrade is required in order to run VibroSight 2.12.7 or later.

3. This version of VM600 CPUR2 firmware includes improvements such as changing the PROFIBUS polling rate for the Modbus server to 100 ms (was 200 ms) and a bug fix for a known VM600 CPUx time counter wraparound (overflow) issue. A firmware upgrade is strongly recommended in order to run VibroSight 3.4.0 or later.

4. This version of VM600 CPUR2 firmware includes improvements such as overall performance, responsiveness and stability, and support for CPUR2/IOCR2 card pair relays, and the ability to download the GSD file directly from the card. A firmware upgrade is strongly recommended but is not required in order to run VibroSight 4.1.0 or later.
Note: VibroSight 4.1.0 or later must be used in order to download the VM600 CPUR2 GSD file directly from the CPUR2 card.

5. For information on this version of VM600^{Mk2} CPUR2 firmware, refer to the VibroSight 7.0 release notes.
A firmware upgrade is required in order to run VibroSight 7.0.0 or later.

6. For information on this version of VM600^{Mk2} CPUR2 firmware, refer to the VibroSight 7.0 release notes.
A firmware upgrade is required in order to run VibroSight 7.1.0 or later.

Table 6: VibroSight software and VM600 CPUR firmware compatibility

	VM600 CPUR firmware See note 1	
VibroSight software version Part number (PNR)	Base-system firmware (`*.tgz`)	
	`640-011-001-004`	`640-011-001-005`
	Applications firmware (`*.tgz`)	
	`640-012-001-004`	`640-012-001-005`
4.0.0 609-004-000-046	✓ See note 2	✓
4.1.0 609-004-000-047	✓	✓ See note 3
5.0.0 609-004-000-048	✓	✓
5.1.0 609-004-000-049	✓	✓
6.0.0 609-004-000-050	✓	✓
6.1.0 609-004-000-051	✓	✓
7.0.0 609-010-000-001	✓	✓
7.1.0 609-010-000-001	✓	✓
7.2.0 609-010-000-001	✓	✓
7.3.0 609-010-000-001	✓	✓
7.4.0 609-010-000-001	✓	✓

Notes for Table 6 (see the next page)

Notes for Table 6

1. VM600 CPUR firmware is packaged and distributed as a *.tgz* file (a compressed archive file format) with PNRs such as *640-011-001-xxx* for the Base System and *640-012-001-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 *640-011-000-xxx* for the Base System and *640-012-000-xxx* for the Firmware, which correspond to the actual unpacked firmware that is running on the card.

2. This is the latest official release of VM600 CPUR firmware (that is, the earlier version of the CPUx card with support for card pair redundancy (PNR 600-007-000-vvv)), which was discontinued in VibroSight 2.12.0 and reintroduced in VibroSight 4.0.x).

3. This version of VM600 CPUR firmware includes a bug fix for a known VM600 CPUx time counter wraparound (overflow) issue and the addition of relay outputs to the diagnostics logs. A firmware upgrade is strongly recommended but is not required in order to run VibroSight 4.1.0 or later.

Table 7: VibroSight software and VM600 XMx16 firmware compatibility

	VM600 XMx16 firmware See note 1
VibroSight software version Part number (PNR)	Base-system firmware (`*.tgz`)
	`640-003-001-016`
	Applications firmware (`*.tgz`)
	`640-010-001-016`
4.0.0 609-004-000-046	✓ See note 2
4.1.0 609-004-000-047	✓
5.0.0 609-004-000-048	✓
5.1.0 609-004-000-049	✓
6.0.0 609-004-000-050	✓
6.1.0 609-004-000-051	✓
7.0.0 609-010-000-001	✓
7.1.0 609-010-000-001	✓
7.2.0 609-010-000-001	✓
7.3.0 609-010-000-001	✓
7.4.0 609-010-000-001	✓

Notes for Table 7 (see the next page)

Notes for Table 7

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

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

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

6.2.2 VibroSmart device firmware

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

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

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

Table 8 shows the compatibility between VibroSight software and the VibroSmart VSI010 firmware.

Table 9 shows the compatibility between VibroSight software and the VibroSmart VSN010 firmware.

Table 10 shows the compatibility between VibroSight software and the VibroSmart VSV30x firmware.

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

Table 8: VibroSight software and VibroSmart VSI010 firmware compatibility

	VSI010 firmware (`*.xmsifw`) See note 1				
VibroSight software version Part number (PNR)	`642-002-000-010`	`642-002-000-011`	`642-002-000-012`	`642-002-000-013`	`642-002-000-014`
5.0.0 609-004-000-048	✓ See notes 2 and 3	✓ See notes 2 and 4	✓ See notes 2 and 5		
5.1.0 609-004-000-049	✓	✓	✓		
6.0.0 609-004-000-050	✓	✓	✓		
6.1.0 609-004-000-051				✓ See notes 2 and 6	
7.0.0 609-010-000-001				✓	
7.1.0 609-010-000-001					✓ See notes 2 and 7
7.2.0 609-010-000-001					✓
7.3.0 609-010-000-001					✓
7.4.0 609-010-000-001					✓

Notes for Table 8 (see the next page)

Notes for Table 8

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

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

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

Procedure:

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

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

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

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

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

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

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

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

3. This version of VibroSmart VSI010 firmware has no limit on the number of constants per VSI010 module.
A firmware upgrade is recommended but is not required in order to run VibroSight 3.8.0 or later.

4. This version of VibroSmart VSI010 firmware adds support for Modbus function code 03.
A firmware upgrade is required in order to run VibroSight 5.0.0 or later.

5. This version of VibroSmart VSI010 firmware adds support for module lock and the GOOSE communications protocol (IEC 61850).
A firmware upgrade is required in order to run VibroSight 5.0.0 or later.

6. For information on this version of VibroSmart VSI010 firmware, refer to the VibroSight 6.1 release notes.
A firmware upgrade is required in order to run VibroSight 6.1.0 or later.

7. For information on this version of VibroSmart VSI010 firmware, refer to the VibroSight 7.1 release notes.
A firmware upgrade is required in order to run VibroSight 7.1.0 or later.

Table 9: VibroSight software and VibroSmart VSN010 firmware compatibility

	VSN010 firmware (`*.redboxfw`) See note 1	
VibroSight software version Part number (PNR)	`642-004-000-011`	`642-004-000-012`
5.0.0 609-004-000-048	✓ See note 2	
5.1.0 609-004-000-049	✓	
6.0.0 609-004-000-050	✓	
6.1.0 609-004-000-051	✓	
7.0.0 609-010-000-001	✓	
7.1.0 609-010-000-001		✓ See notes 2 and 3
7.2.0 609-010-000-001		✓
7.3.0 609-010-000-001		✓
7.4.0 609-010-000-001		✓

Notes for Table 9 (see the next page)

Notes for Table 9

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

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

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

Procedure:

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

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

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

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

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

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

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

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

3. For information on this version of VibroSmart VSN010 firmware, refer to the VibroSight 7.1 release notes.
A firmware upgrade is required in order to run VibroSight 7.1.0 or later.

Table 10: VibroSight software and VibroSmart VSV30x firmware compatibility

	VSV30x firmware (`*.xtranfw`) See note 1				
VibroSight software version Part number (PNR)	`642-001-000-017`	`642-001-000-018`	`642-001-000-000DEV_SVN14937_2020-05-20`	`642-001-000-019`	`642-001-000-020`
5.0.0 609-004-000-048	✓ See notes 2 and 3	✓ See notes 2 and 4			
5.1.0 609-004-000-049	✓	✓	✓ See notes 2 and 5		
6.0.0 609-004-000-050	✓	✓	✓		
6.1.0 609-004-000-051				✓ See notes 2 and 6	
7.0.0 609-010-000-001				✓	
7.1.0 609-010-000-001					✓ See notes 2 and 7
7.2.0 609-010-000-001					✓
7.3.0 609-010-000-001					✓
7.4.0 609-010-000-001					✓

Notes for Table 10 (see the next page)

Notes for Table 10

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

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

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

Procedure:

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

3. This version of VibroSmart VSV30x firmware adds support for configurable tacho ratios, flexible input channel to processing block mapping, and up to two tacho processing blocks. A firmware upgrade is required in order to run VibroSight 5.0.0 or later.

4. This version of VibroSmart VSV30x firmware adds support for module lock, PTP (precision time protocol) time synchronisation, channel bypass and pre-trigger data logging. A firmware upgrade is required in order to run VibroSight 5.0.0 or later.

5. This version of VibroSmart VSV30x firmware improves support for hydro air-gap and magnetic-flux monitoring with a minor bug fix.
A firmware upgrade is required in order to run VibroSight 5.1.0 or later.

6. For information on this version of VibroSmart VSV30x firmware, refer to the VibroSight 6.1 release notes.
A firmware upgrade is required in order to run VibroSight 6.1.0 or later.

7. For information on this version of VibroSmart VSV30x firmware, refer to the VibroSight 7.1 release notes.
A firmware upgrade is required in order to run VibroSight 7.1.0 or later.

6.2.3 Updating the firmware using VibroSight System Manager

When performing VibroSight software upgrades, it is strongly recommended to systematically upgrade the firmware of VM600^{Mk2}/VM600 and/or VibroSmart modules/devices to the latest compatible version.

Failure to perform a necessary VibroSight-compatible VM600^{Mk2}/VM600 and/or VibroSmart modules/devices firmware update may lead to incoherent system behaviour and affect the proper functioning of data acquisition in a system. It is only in systems where the firmware running on the VM600^{Mk2}/VM600 and/or VibroSmart modules/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: Updating the firmware for VM600^{Mk2}/VM600 and/or VibroSmart modules/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. It is therefore strongly recommended to change the firmware of VibroSight-compatible hardware only when it is necessary. For example, when the devices must be updated to be compatible with a VibroSight software upgrade.

During the firmware update of a device, the module or card 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.

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.

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

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

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

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

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

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

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

1. Ensure that the computer running the VibroSight software is on the same network as the hardware (VM600^{Mk2}/VM600 and/or VibroSmart modules/devices) to be updated.
2. Start VibroSight System Manager and navigate to the Devices tree structure in the System Explorer window.

   The Devices tree lists all of the VibroSight compatible hardware that VibroSight can see on the network. If there are no VM600^{Mk2}/VM600 and/or VibroSmart modules/devices in the tree structure or some are missing, verify your network connections.
3. Select the module or device that requires its firmware to be changed.

   The Actions tool window updates to show the available tools.

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

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

   NOTE: The Change Firmware dialog box automatically opens the firmware folder corresponding to the VM600^{Mk2}/VM600 or VibroSmart modules/devices selected.
6. Click the **Finish** button to start the firmware upgrade process.

   For XMx16 cards and VibroSmart devices, the firmware upgrade process can take up to 5 minutes, during which:

   - The IP address beside the device’s serial number in the Devices tree structure can disappear.
   - The LEDs on the front panel of the device can change to reflect the status of the upgrade.
7. Repeat steps 3 to 6 for each device that requires a firmware update.

   NOTE: Although the firmware for each VibroSight device must be changed individually using the  **Change Firmware** tool, as each device updates its firmware

	independently of the VibroSight software (once the process has started), firmware updates can be performed on several devices in parallel.

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

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

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

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

6.3 Final checks

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

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

In a VibroSight Server user interface:

- On the Status tab under Device drivers, check that the VM600, VibroSmart, OPC and Modbus controls are enabled or disabled as required by your application.
- On the Status tab under Server features, check that the Basic math, Air gap, Combustion monitoring, Duration counters, VSHDA import and Data logging manager controls are enabled or disabled as required by your application.
- On the Log messages tab, check the listed messages (Info level) to ensure that the hardware (VM600^{Mk2}/VM600 modules/cards and /or VibroSmart modules) have been discovered and that data acquisition has resumed.

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

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

7 Customer support

7.1 Contacting us

Meggitt SA 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 representative. Alternatively, contact our main office:

Customer support
Meggitt SA
Route de Moncor 4
Case postale
1701 Fribourg
Switzerland

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

7.2 Technical support

Meggitt SA 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 SA 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 11	Windows 10	Windows 8.1
VibroSight software compatible?	Yes	Yes	Yes but not recommended for new installations as Microsoft mainstream support ended in 2018 (extended support will end in 2023)

VibroSight software and Windows® Server operating system compatibility

	Windows Server 2022	Windows Server 2016	Windows Server 2012
VibroSight software compatible?	Yes	Yes	Yes but not recommended for new installations as Microsoft mainstream support ended in 2018 (extended support will end in 2023)

VibroSight software and Microsoft® .NET requirements

VibroSight software version	Microsoft .NET requirements
VibroSight 7.4.x	.NET 7.0 SDK v7.0.306 or later
VibroSight 3.7.0 or later	.NET Framework 4.7.2 See note 1
VibroSight 3.4.0 or later	.NET Framework 4.7.1 See note 2
VibroSight 3.0.0 or later	.NET Framework 4.6
VibroSight 2.12.0 or later	.NET Framework 4.5 and .NET Framework 2.0 See note 3
VibroSight 2.9.4 or later	.NET Framework 4.5
VibroSight 2.9.3 and 2.9.2	.NET Framework 4 (Standalone Installer)
VibroSight 2.9.1 or earlier	.NET Framework 3.5 SP1

Notes

1. Microsoft .NET Framework 4.7.2 replaces .NET Framework versions 4.0 to 4.7.1.

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

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