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# What's new in Vicon Nexus 2.7

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## About Vicon Nexus 2.7

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Vicon Nexus 2.7 is a point release that provides features and enhancements in addition to those that were included in earlier releases of Nexus 2.

### Note

Although data collected in Nexus 2.7 (ie, .cd3 files) can be viewed in earlier releases of Nexus, you cannot reprocess this data (ie, .x2d with .xcp files) in earlier releases. For more information, see [Upgrading from Nexus 2.6.1 and earlier on page 7](#).

For links to descriptions of the features and enhancements that are specific to Nexus 2.7, see [Vicon Nexus 2.7 new features and functions on page 11](#).

For a description of the other features and enhancements that have been released since Nexus 2.0, see the PDFs *What's New in Vicon Nexus 2.6*, *What's New in Vicon Nexus 2.5* and *What's New in Nexus 2.4*.

To view Nexus videos and tutorials, visit the [Nexus 2 playlist on YouTube](#).

For information about requirements and systems supported for this version of Nexus, see:

- [Requirements for Nexus 2.7 on page 5](#)
- [Systems supported for Nexus 2 on page 6](#)
- [Upgrading Nexus on page 7](#)

**Note**

The Vicon motion capture system and the Nexus software, manufactured by Vicon Motion Systems Limited, have been tested prior to shipment and meet the metrological requirements as detailed in the *Medical devices directive*.

(See *Regulatory information* in the Nexus documentation area of the Vicon website, [docs.vicon.com/](https://docs.vicon.com/).)

## Requirements for Nexus 2.7

Nexus 2.7 is supported under the following operating systems:

- **Microsoft Windows 10, 64-bit** (this is the Vicon-recommended OS): Compatible with and fully supported. Installation, software operation and required third-party drivers tested.
- **Microsoft Windows 7**: Supported and has undergone limited testing.

Although Nexus may install and function under other Microsoft Windows operating systems, this is not officially supported or recommended by Vicon.

## Basler video cameras and Nexus 2.7

If Basler digital cameras will be connected to Nexus 2.7, ensure you have updated to the Basler Pylon5 SDK and drivers (v5.0.0), which are available from the Vicon website.

If you are using an Intel i340, i350 or i210 network card, when you install the drivers, select the option for **Filter drivers**, not **Performance drivers**.



### Important

The Pylon5 driver supports:

- Basler GigE cameras under both Windows 10 and Windows 7.
- Basler FireWire cameras (A600 series) under Windows 7 only.

## MATLAB and Nexus 2.7

If you are planning to use MATLAB with Nexus 2.7, ensure that, in addition to installing MATLAB, you install the [.Net Framework version 4.5](#).

## Systems supported for Nexus 2

Before you install Vicon Nexus 2.7, note the following limitations on supported systems:

- Nexus captures data only from Vicon systems (including Vicon Vero and Vicon Vue, Vicon Vantage, Vicon Bonita, Vicon T-Series, and MX+ and MX cameras and units).
- Nexus 2.7 does not support connection to the Reference Video System (Nexus Slave application).

## Upgrading Nexus

This section describes functionality that is dependent upon the version of Vicon Nexus that is being upgraded:

- [Upgrading from Nexus 2.6.1 and earlier on page 7](#)
- [Upgrading from earlier versions of Nexus 2 on page 7](#)
- [Upgrading from Nexus 1.x on page 8](#)

### Upgrading from Nexus 2.6.1 and earlier

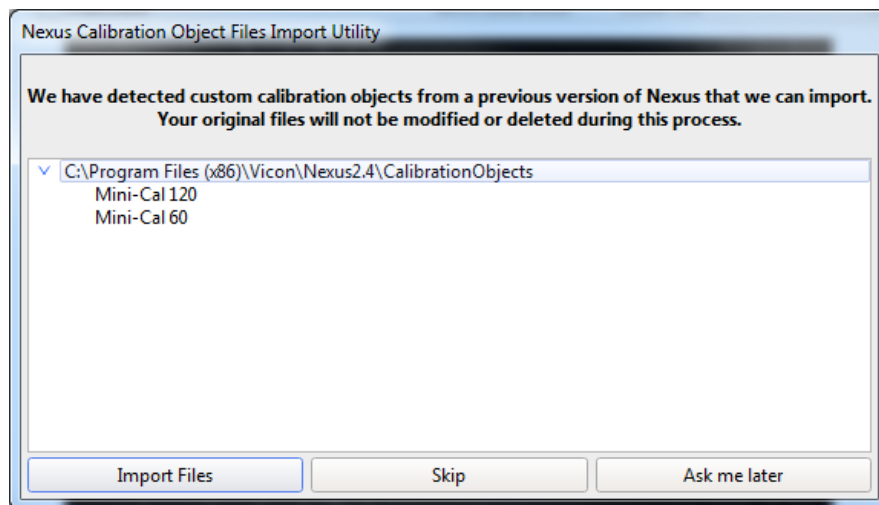
Improvements to camera calibration provided by Nexus 2.7 (for details, see [Support for Vertex cameras on page 34](#)), have the following effects on compatibility of data between releases:

- Data collected in earlier releases of Nexus can be reprocessed in Nexus 2.7 because calibration (.xcp) files that were created in earlier releases are fully compatible with Nexus 2.7. Note that if you load a calibration (.xcp) file that was created in an earlier release of Nexus into Nexus 2.7 and save it, Nexus maintains its compatibility with earlier releases.
- You can use earlier releases of Nexus to view data that was collected in Nexus 2.7 (that is, you can open Nexus 2.7 .c3d files in Nexus 2.6.1 and earlier).
- However, calibration (.xcp) files that are created in Nexus 2.7 are not backward-compatible, that is, they cannot be read or reprocessed by earlier releases of Nexus, and loading will fail if attempted.

### Upgrading from earlier versions of Nexus 2

If you are upgrading from a previous version of Nexus 2, during installation a dialog box gives you the option of adding the **Auto Intelligent Gap Fill** button and/or the **Add to Quick Report** button to your Nexus toolbar. For more information on these features, see Automated gap-filling, in the Vicon Nexus User Guide and Quick Reports, in the Vicon Nexus Reference Guide. To add the additional button(s) to your toolbar, click **Upgrade Files**.

On first launch, Nexus 2.7 scans the installation directories of earlier versions of Nexus 2 and offers to automatically transfer custom objects that it finds.



If you click **Import Files**, Nexus 2.7 copies custom calibration objects from earlier versions of Nexus (2.0 and later) to the **Public Documents** folder (eg `C:\Users\Public\Documents\Vicon\Nexus2.x\CalibrationObjects`).



#### Important

When you create new custom calibration objects, ensure you save them into this folder (not to the Nexus installation folder), so that they are available to future versions of Nexus.

## Upgrading from Nexus 1.x



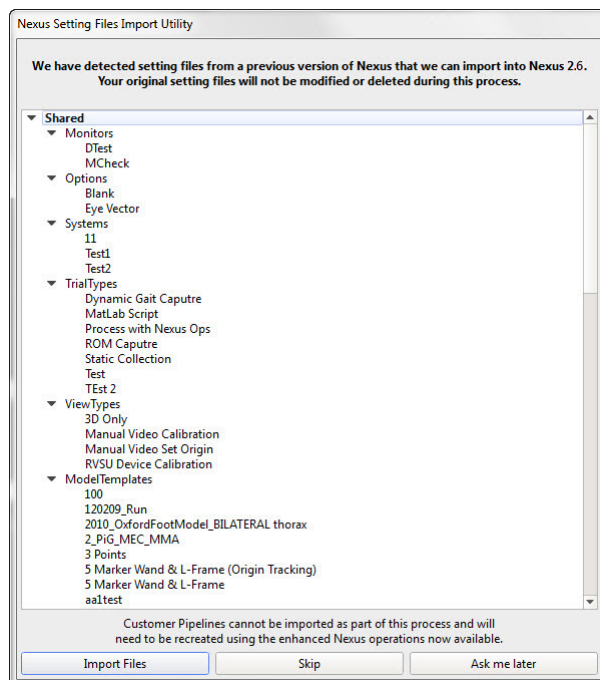
#### Note

This section applies only to versions of Nexus that are earlier than 2.0.

Nexus 2.7 installs into its own folder, called *Nexus2.7*. If you already have Nexus 1.x installed, it will remain installed alongside the new Nexus installation.

On installation, Nexus 2.7 automatically scans for Nexus 1.x files, displays a list of any older files that it finds, and provides an automated system for importing these into Nexus 2.7.





This process copies all the old files and converts the copies, ensuring that original files are not moved, altered, or destroyed.



### Important

Custom pipelines are not copied from earlier versions of Nexus, so if you want to use your old pipelines, copy them from the following Vicon product installation folder (by default in *C:\Program Files (x86)\Vicon* or *C:\Program Files\Vicon*):

*\Nexus\WorkstationPlugins*

and paste them to the following location in the Vicon production installation folder (by default in *C:\Program Files (x86)\Vicon* or *C:\Program Files\Vicon*):

*\Nexus2.#\LegacyPlugins*

They will then be available in the **Legacy** pipeline operations in Nexus 2.7.

For more information on the installation and licensing process, see *Installing and licensing Vicon Nexus*.

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## Regulatory information

For Vicon Nexus regulatory details, see Vicon Nexus regulatory information in the Nexus documentation area of the Vicon website ([docs.vicon.com](https://docs.vicon.com)).

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## Vicon Nexus 2.7 new features and functions

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For information on the new features and enhancements provided by Nexus 2.7, see the following topics:

- [Cycle visualization in the time bar on page 12](#)
- [Display selected components in Quick Reports on page 13](#)
- [Improved feedback for camera calibration on page 14](#)
- [Enhanced Log notifications on page 17](#)
- [New ProCalc pipeline operation on page 18](#)
- [Stream and capture IMU data on page 20](#)
- [Other enhancements in Nexus 2.7 on page 31](#)

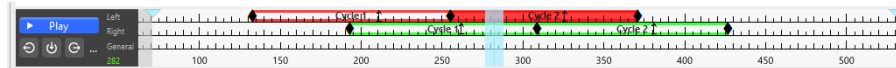


For more detail on the new functionality, watch the Vicon video, [What's New in Nexus 2.7?](#), available on YouTube.

## Cycle visualization in the time bar

Location: Nexus time bar and **Options** dialog box (F7)

By default, all the cycles (gait or other) that have been defined by sets of time bar events, are displayed on the time bar.



This provides an easy way to identify:

- How many cycles are defined
- Where they are temporally
- Whether they are associated with force plate activity (indicated by solid color instead of colored outline only)
- How large they are (number of frames)
- Whether the left or right side is indicated:
  - Left = Red
  - Right = Green

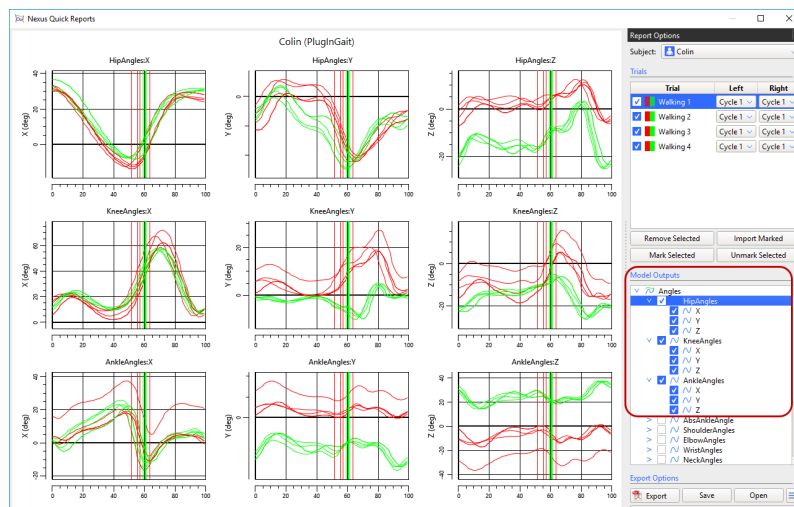
To turn the visual display on or off or to change the default color options and other visual indicators, in the **Options** dialog box (press F7), on the left side click **Time Bar** and change the required properties on the right.

To turn on or off the display of the frame count, right-click on the time bar and select or clear **Show Cycle Frame Count**.

## Display selected components in Quick Reports

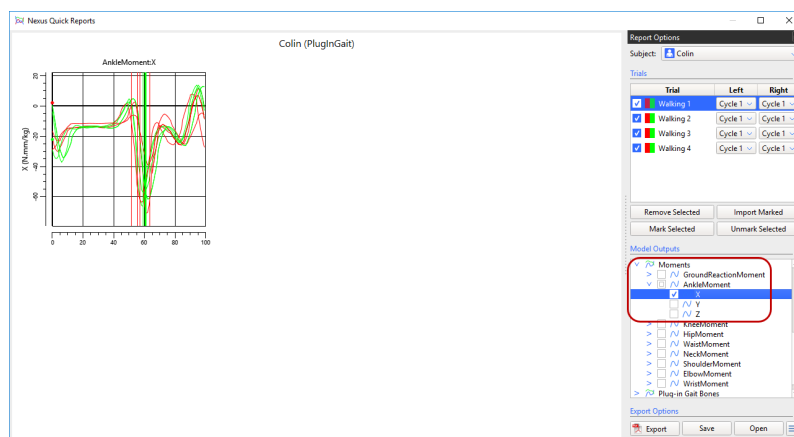
Location: Window menu > Quick Reports (or F4)

When you create a Quick Report, you can now select and display individual components and outputs, - x, y or z, in addition to displaying all three simultaneously:



To display only the required components, in the **Model Outputs** tree, clear the check boxes for the unwanted components.

For example, if you are interested in Ankle Moment X only, you can select this only.



## Improved feedback for camera calibration

Location: Tools pane > System Calibration tab > Camera Calibration Feedback section

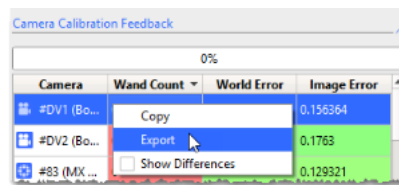
You can now use the new features in the **Camera Calibration Feedback** section of the **System Calibration Tools** pane to export your calibration, to identify calibration issues or to ensure that the current calibration conforms to an established standard.

### Export a calibration as a CSV file

You can now export the current calibration as a .csv file. This helps you to monitor your calibration standards over time.

To export a calibration as a CSV file:

1. In the **Camera Calibration Feedback** section, right-click and then click **Export**.



2. Enter a file name, ensure the file extension is .csv and click **Save**.

### Compare calibrations

New functionality in the **Camera Calibration Feedback** section enables you to compare the current calibration results with the results from the previous calibration.

To compare the current and last calibrations:

1. In the **Camera Calibration Feedback** section, right-click and then select **Show Differences**.

The **World Error** and **Image Error** columns display the differences between the two calibrations.

If the results from the latest calibration are better (ie produce smaller errors) than the previous one, the columns are displayed in green to yellow.

If the results from the latest calibration are worse (ie produce larger errors) than the previous one, the columns are displayed in red to orange.

## Set calibration error threshold

A new feature enables you to specify a maximum calibration error, above which cameras are flagged as having an error that is higher than the threshold that you have set. To use this feature, at the bottom of the the **Camera Calibration Feedback** section, you can set the error threshold (**World** or **Image**). After calibration, in the **Camera Calibration Feedback** section, cameras with an error greater than this value are displayed with a yellow warning icon instead of the normal blue camera icon. The default setting (0.000) disables any warnings.

In the following example, the error threshold is set to 0.5mm, so that the three cameras with a calibration error greater than this are displayed with a warning icon:

Camera	Wand Count	World Error	Image Error
#DV1 (Vue)	0	3.0977	0.322513
#DV2 (Vue)	0	2.69009	0.730195
#8 (Vanta...	0	0.553546	0.219503
#9 (Vanta...	0	0.475983	0.178538
#7 (Vanta...	0	0.442393	0.204011
#5 (Vanta...	0	0.428778	0.236003
#2 (Vanta...	0	0.418332	0.183402
#11 (Vanta...	0	0.328350	0.157013

Threshold: 0.500    ☒ World    ☐ Image

## Sort columns

If you are working with a large number of cameras, it is useful to be able to sort the results to enable you to quickly identify problematic cameras. You can now sort the columns in the **Camera Calibration Feedback** section by clicking on the required column heading.

The default sorting is on the camera number (low to high):

Camera	Wand Count	World Error	Image Error
#DV1 (Vue)	0	3.0977	0.322513
#DV2 (Vue)	0	2.69009	0.730195
#21 (Vanta...	0	0.418332	0.183402
#22 (Vanta...	0	0.323169	0.128834
#23 (Vanta...	0	0.190085	0.120596
#24 (Vanta...	0	0.328359	0.170131
#25 (Vanta...	0	0.428778	0.236003
#76 (Vanta...	0	0.553546	0.219503

Threshold: 0.000    ☐ World    ☒ Image

To make it easy to find cameras with the highest errors, you can sort on World Error or Image Error, displaying the cameras with the highest errors at the top of the column:

Camera Calibration Feedback

0%

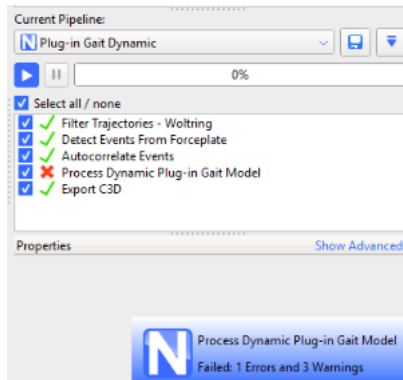
Camera	Wand Count	World Error	Image Error
#DV1 (Vue)	0	3.0977	0.322513
#DV2 (Vue)	0	2.69009	0.730195
#8 (Vantag...	0	0.553546	0.219503
#9 (Vantag...	0	0.475983	0.178538
#7 (Vantag...	0	0.442393	0.204011
#5 (Vantag...	0	0.428778	0.236003
#2 (Vantag...	0	0.418332	0.183402
#11 (Vantag...	0	0.338356	0.171121

Threshold: 0.000    ☒ World    ☐ Image



## Enhanced Log notifications

You are now alerted to important errors by popup notifications that are briefly displayed at the bottom right of the Nexus window.



If you are using the default sounds supplied with Nexus and have audio enabled, a relevant sound clip is also played.

To view further details about the error in the Log, click the notification.

The notification disappears after four seconds.

## New ProCalc pipeline operation

Location: Tools pane > Pipelines tab > Data Processing pipeline operations > Run ProCalc Operation

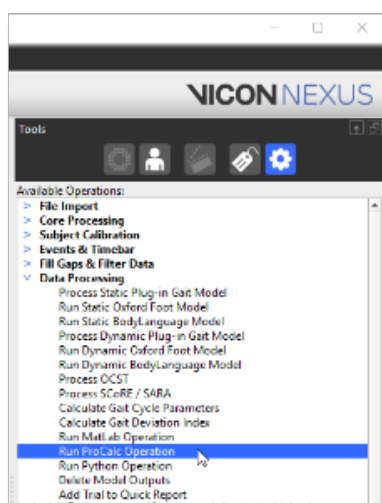
A new pipeline operation enables you to run ProCalc scripts/models directly from Nexus.

### Note

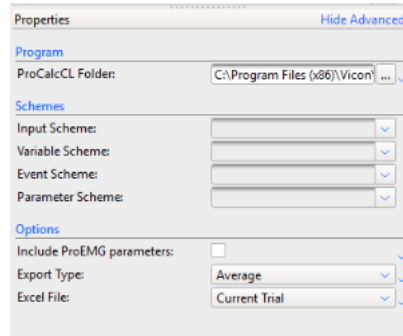
To run ProCalc with Vicon Nexus 2.7, you must install ProCalc 1.2.

To use the new Run ProCalc Operation pipeline operation:

1. On the Pipelines Tools tab, double-click Run ProCalc Operation to add it to the current pipeline in the usual way.



2. In the **Properties** pane, specify the program folder, the operational schemes and other options.

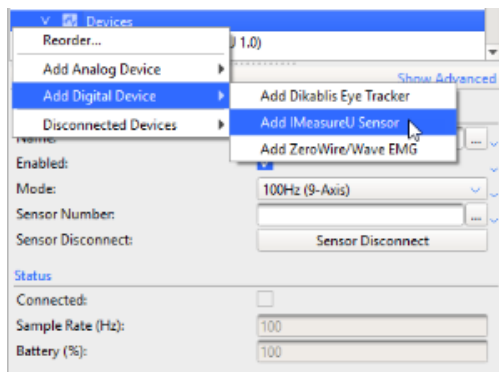


3. Run the ProCalc operation to perform the required calculations.

For more information on Procalc, see the Vicon Procalc documentation .

## Stream and capture IMU data

Location: System Resources pane > Local Vicon System node > Devices node > Add Digital Device > Add IMeasureU Sensor



To enable you to capture data from Vicon IMUs (Inertial Measurement Units) and optical markers simultaneously, you can now use IMUs as digital devices in Nexus to stream and capture data. You can use IMUs to preview data in real time and to capture data onto the IMU's internal memory. You can then plug the IMUs into your PC via USB and use Nexus to download the captured data.



### Important

Vicon IMUs are supported for use with Nexus for research purposes only. For full sensor safety and regulatory details, see the IMeasureU Sensor Safety and Regulatory Information, which is also available as a PDF.

Before you begin using IMUs with Nexus, note the following points:

- Windows 10 and above only is supported. Ensure the latest Windows 10 updates are installed.
- To use IMUs in Nexus, first plug the supplied Bluetooth (BLE) dongle into the relevant Windows PC. Ensure that its drivers have been updated: you can do this using the Windows Device Manager.
- To enable further setup and control of your IMUs after they are paired and recognized by Windows 10, you can download IMU Lightning desktop software. IMU Lightning enables you to see the status of IMUs outside of Nexus and is useful in certain troubleshooting situations.

- IMUs have three collection modes: 100 Hz, 250 Hz or 500 Hz. To accommodate the IMUs, ensure that your Vicon system is running at a compatible frame rate.
- Nexus supports the use of up to four current IMUs.
- You can transfer the data that is collected and stored on your IMUs onto your PC using the new **IMU Transfer** pane in Nexus (see [Transfer data from IMUs into Nexus on page 27](#)).
- To enable transfers to work, ensure you have downloaded and installed the [CP210x USB to UART Bridge VCP Drivers](#).

## Capture data with IMUs

The following are brief notes on working with IMUs with Nexus. For more information on setting up and using IMUs to stream and capture data, see the [IMeasureU documentation](#).



For more detail on working with IMUs and Nexus, watch the Vicon videos, [IMU Unboxing](#), [Introduction to using Vicon IMU with Nexus](#), and [Nexus and the IMU Research app](#), available on YouTube.

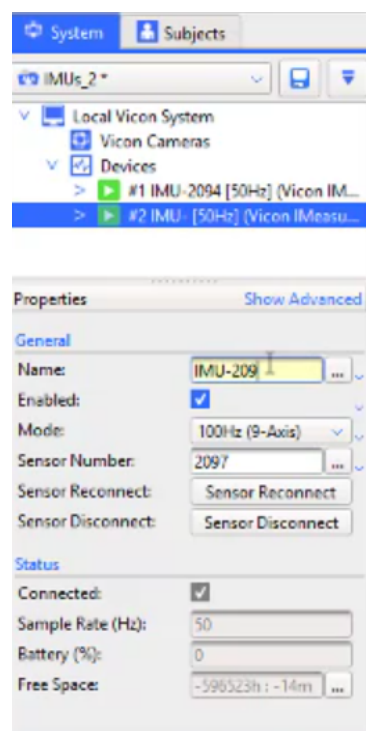
- If necessary (see [previous points on page 20](#)), download and install IMU Lightning.
- Ensure that the Bluetooth dongle is plugged into the PC and that its drivers are up-to-date.
- Turn on the IMUs and pair them to the relevant Windows computer, via Bluetooth settings in Windows 10.
- In Nexus, add the IMUs as digital devices and in the **Properties** pane, specify the required settings:

- a. In the **System Resources** pane, expand the **Local Vicon System** node, then right-click the **Devices** node, point to **Add Digital Device** and click **Add IMeasureU Sensor**.
- b. In the **Properties** pane below, specify a **Name** and **Sensor Number**:

Property	Description
Name	The identifier that you want to give to the IMU.
Sensor Number	The unique serial number of the device, which is found on the tag on the side of the IMU. Although you enter only the digits on the tag, this is an eight-digit number that is padded with four zeros when displayed in the Log.

Note that if the connection to the IMU is lost (the device is displayed as gray in the **System Resources** pane), you can click the **Sensor Reconnect** button to reconnect. This button is not available while you are capturing a trial.

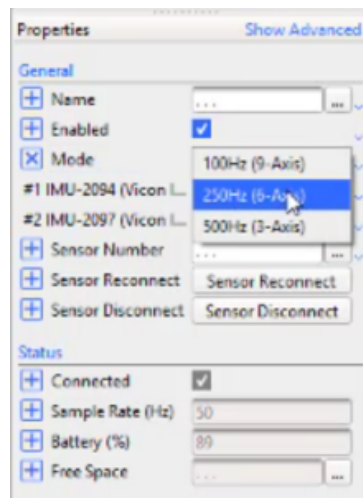
When you have specified a name and number, in the Resources list the Play icon next to the IMU name turns green.



5. If necessary, change the collection mode (frequency) at which the IMUs are to run: 100 Hz, 250 Hz or 500 Hz.

To do this:

- a. In the Resources list, ensure the IMUs are selected.
- b. To display the axes for the IMUs, in the view pane, select Graph view.
- c. In the Properties pane, from the **Mode** list, select the required frequency.



- d. In the Graph view, the graphs change to reflect the selection.

#### Note

If you need to calibrate the IMUs (normally only necessary when you update the camera firmware or if an offset occurs), see [Calibrate IMUs on page 29](#). Note that, for calibration, you must set the collection mode to 100 Hz.

6. Attach the IMUs to the subject.

7. Set up and start capture in the usual way (see Capture the required movement in the *Vicon Nexus User Guide*).

While the IMUs are connected to Nexus, a real-time preview of data streaming from the IMUs is displayed. This preview data stream is supplied to Nexus at 50 Hz, regardless of the trial collection rate (100 Hz, 250 Hz or 500 Hz). You can view this preview data in Live mode in Nexus.

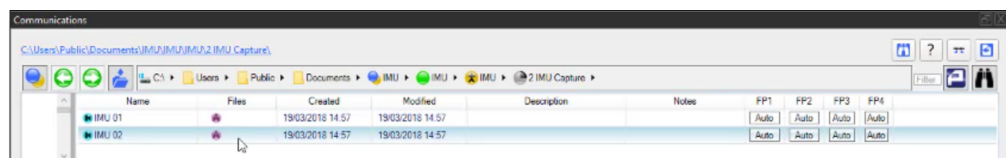
The preview stream is optimized for low latency data visibility and may therefore have small frame gaps where data does not appear.

When trial capture starts, the IMU simultaneously enables the display of preview data at 50 Hz and writes data to its internal memory.

**Note**

Gaps in the preview data do not indicate gaps in the data that is written to memory.

8. When you stop a trial capture, an *.x1d* file that contains the preview data that is displayed in the Graph view is saved into the current Session folder and is displayed with a purple A icon on the Data Management tab.



9. When you have finished capturing data, plug the IMUs into your PC using the supplied USB cables.





## Manage your captured IMU data

After you have finished capturing data and have plugged the IMUs into the PC, you use the buttons in the IMU Transfer pane in Nexus to work with the data and transfer it.

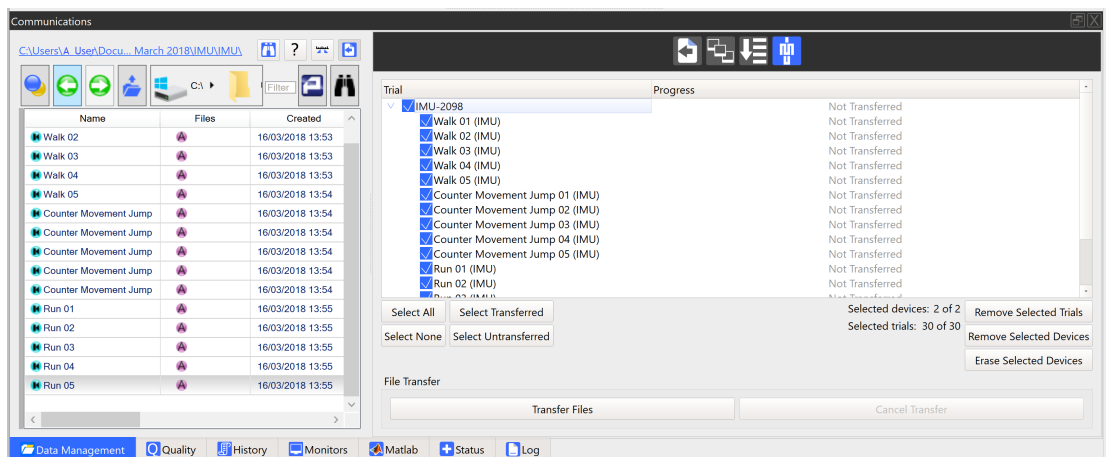


### Tip

To help you decide whether to transfer recorded data, you can check the preview data by playing it in Offline mode first.

To open the IMU Transfer pane, in the Communications pane expand the File Transfer /Batch Processing interface  and click the IMU Transfer button .

The connected IMUs and the trials that were recorded onto them are listed.



Depending on what you want to do with the data that you have captured, choose the appropriate option.

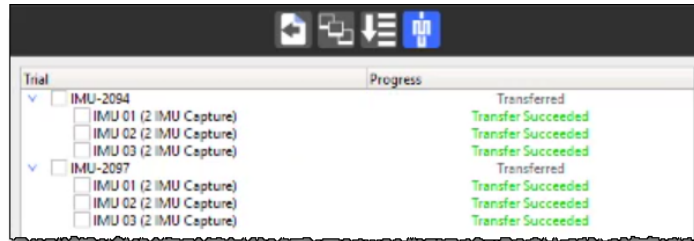
To do this	Take this action
Select one or more trials	Click, SHIFT+click or click <b>Select All</b>  After you have transferred trials (see <a href="#">Transfer data from IMUs on page 27</a> ), you may want to use <b>Select Transferred</b> , or <b>Select Untransferred</b> .
Remove selected trials from the list in the IMU Transfer pane.	Select the trials that you want to remove and click <b>Remove Selected Trials</b> .  The trials are removed from the IMU Transfer list, but remain on the IMU.
Remove from Nexus all references to selected IMUs and their related trials.	Select the the IMUs that you want to remove and click <b>Remove Selected Devices</b> .  The selected IMUs and their trials are removed from the IMU Transfer list, but the trials remain on the IMUs.
Remove from one or more IMUs all collected trials, and remove the IMU and its trials from the list in the IMU Transfer Pane.	Select the the IMU(s) that contains the trials that you want to remove and click <b>Erase Selected Devices</b> .  All data is removed from the selected IMU(s) and the IMU is removed from the IMU Transfer List.
Transfer trial data from the IMUs to the Session folder in Nexus on your PC.	See <a href="#">Transfer data from IMUs. on page 27</a>

## Transfer data from IMUs

To transfer the data from the IMU(s) to the Session folder in Nexus:

1. Ensure you have downloaded and installed the [CP210x USB to UART Bridge VCP Drivers](#).
2. In the IMU Transfer pane, select the required files for transfer to the Session folder.
3. At the bottom of the pane, click the **Transfer Files** button.

When transfer is complete, the Progress column in the IMU Transfer pane changes to Transferred for the IMUs and Transfer Succeeded in green for each successfully transferred trial.



After the transfer operation, for each trial, you can find the following files in the Session folder:

- An *.x1d* containing the preview data (50Hz)
  - An *.imu* file containing the higher quality data (100 Hz, 250 Hz, or 500 Hz) from the IMU
4. You can now view and process the IMU data along with the rest of the trial data.

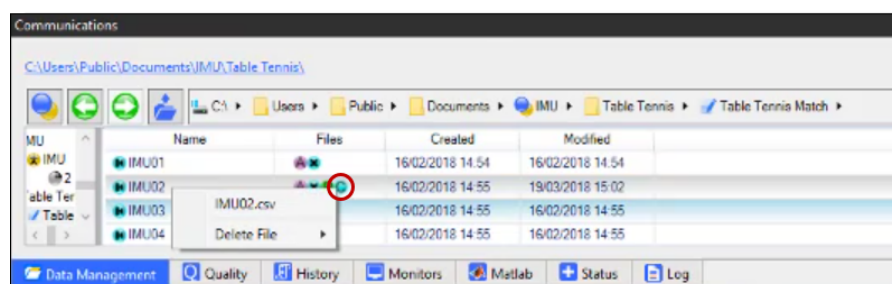
## Export IMU data

You can export data captured using IMUs by running the appropriate pipeline.

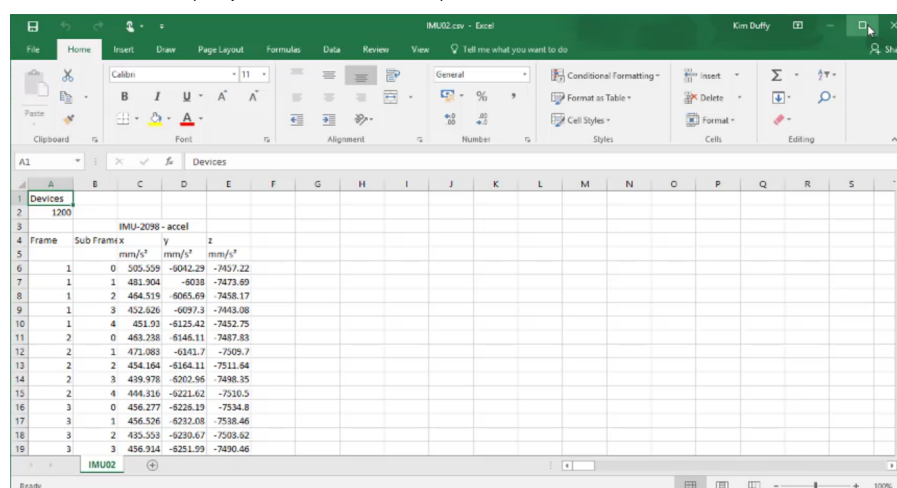
To export IMU data:

1. If you want to select data from only some devices, in the System Resources pane, ensure the required IMUs are selected.
2. In the Pipeline Tools pane, expand **File Export** and double-click **Export ASCII** to add it to the current pipeline.
3. In the Properties pane, ensure that the settings are as required. In the Devices section, if necessary, change the **Devices for Export** list to specify your selection.
4. Run the **Export ASCII** operation.

To open the exported file in Microsoft® Excel®, on the Data Management tab, click the relevant C icon and then click the filename.



The data is displayed in an Excel spreadsheet.



## Calibrate IMUs

IMUs are already calibrated when they are supplied to you, and the calibration is stored on the IMU, so you only need to re-calibrate when you update the camera firmware or if an offset of the IMU occurs.

Note that IMUs can be calibrated at 100 Hz only.

To calibrate IMUs:

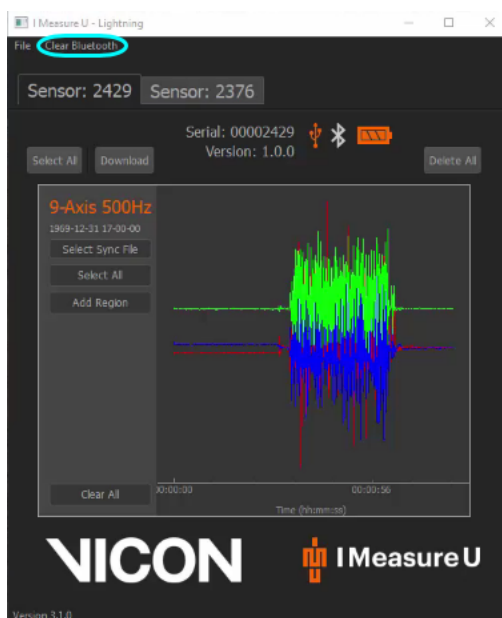
1. Select the IMU(s) that you want to calibrate and in the Properties pane, ensure Advanced properties are displayed.
2. Ensure that the IMUs are static and are not subject to vibration, and positioned with the Z+ axis pointing up or down.
3. In the General section of the Properties pane, click **Calibrate Sensor**.

## Pair an IMU to a different device

After an IMU is paired with a Bluetooth (BLE) dongle (central device), the IMU will only work with that dongle and will reject requests from other central devices (built-in Bluetooth or BLE dongle). To pair the IMU with a different central device (eg a dongle on a different Windows computer), you must erase the stored connection information.

To erase stored connection information:

1. Turn on the IMU and plug it into the PC via USB.
2. Before downloading any data, on the IMeasureU Lightning toolbar, click **Clear Bluetooth**.



This deletes the stored connection information. At the bottom left of the screen a message confirms that the cache has been cleared.

You will not have to repeat a pairing operation unless you:

- Remove or reconfigure your Bluetooth receiver (unplug the dongle etc...)
- Manually remove the pairing

## Other enhancements in Nexus 2.7

In addition to the new features described in [Vicon Nexus 2.7 new features and functions on page 11](#), the following enhancements were also added:

- [High-pass filter on page 31](#)
- [Manage sounds configurations on page 32](#)
- [Quickly check for camera firmware updates on page 32](#)
- [Visualize Plug-in Gait joint centers on page 33](#)
- [Protect system configuration files on page 34](#)
- [Support for Vertex cameras on page 34](#)

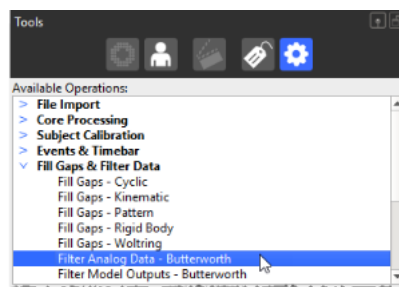
### High-pass filter

Location: Tools pane > Pipelines tab > Fill Gaps & Filter Data pipeline operations > Filter Analog Data - Butterworth operation

A new option for the Butterworth filter pipeline operation now enables you to remove low-frequency noise from your data.

To use the new high-pass filter option:

1. On the Pipelines Tools tab, double-click Filter Analog Data - Butterworth to add it to the current pipeline in the usual way.



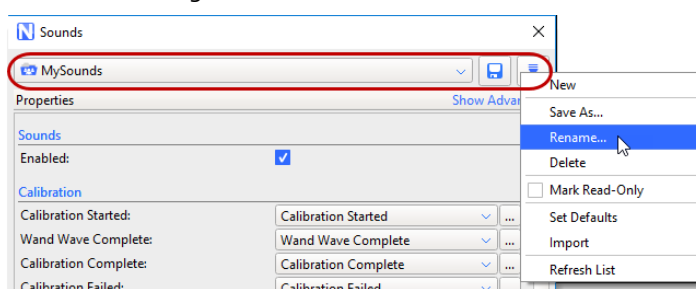
2. In the Properties pane, specify the required options and from the Filter Type list, select High Pass.

When you run the pipeline operation, low-frequency noise is filtered from your data.

## Manage sounds configurations

Location: **Window** menu > **Sounds** (or F6)

You can now use the configuration management area at the top of the **Sounds** dialog box to name, to save, delete and if necessary protect the sounds that you have allocated to Nexus events. After you have saved sounds configuration files, you can select them from the menu at the top of the dialog box and can use the **Configuration menu** to manage them.



The sounds configuration file (\*.AudioScheme) is saved into an *AudioSchemes* folder, in the same location as other Nexus configuration files (see Managing configurations in Vicon Nexus , in the *Vicon Nexus User Guide*).

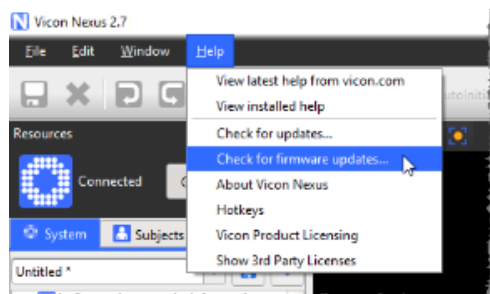
## Quickly check for camera firmware updates

Location: **Help** menu > **Check for firmware updates** option

Nexus 2.7 provides a quick and easy way to check when new firmware is available for your cameras.

To check the latest released firmware version:

- On the **Help** menu, click **Check for firmware updates**.



The **Checking Firmware Version** dialog box displays information about the latest released firmware version.



To check the firmware that your system is using:

- Ensure the system is in Live mode, and in the System Resources pane, right-click Local Vicon System and then click Reprogram Vicon Firmware.  
The firmware version currently used by your system is displayed in the Version column for every connected device.

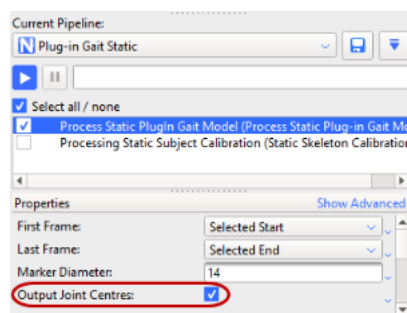
To download the latest firmware, visit [www.vicon.com/downloads/utilities-and-sdk/camera-firmware](http://www.vicon.com/downloads/utilities-and-sdk/camera-firmware).

You can then update your firmware using the Reprogram Firmware dialog box.

## Visualize Plug-in Gait joint centers

Location: Tools pane > Pipelines tab > Data Processing pipeline operations > Process Static Plug-in Gait Model operation

A new option in the Properties for the Process Static Plug-in Gait Model operation enables you to visualize the joint centers that are calculated by Plug-in Gait.



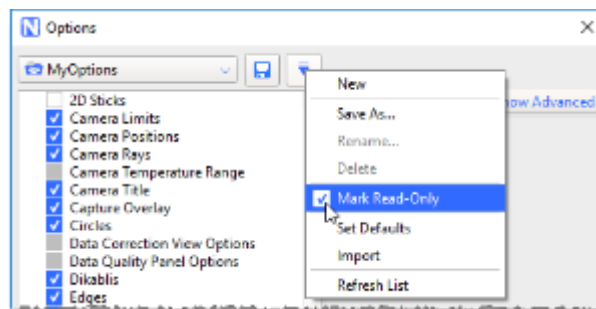
## Protect system configuration files

Location: Various (see *Managing configurations in Vicon Nexus*, in the *Vicon Nexus User Guide*).

The Nexus configuration management menus now contain an additional option to enable you to protect configuration files from accidental changes.

To prevent changes to a configuration file:

1. Ensure the required configuration is selected in the drop-down menu to the left of the configuration management section.
2. In the relevant configuration management section, click the **Configuration menu** button.
3. In the menu, select **Mark Read-Only**.



## Support for Vertex cameras



Nexus 2.7 provides support for Vicon Vertex cameras, which has the added benefit of providing related calibration improvements for other lenses, in particular improved linearization at the edges of lenses.

## Addressed issues

The following issues are among the total that have been addressed in Vicon Nexus 2.7:

- Nexus is more tolerant when loading corrupt C3D files and no longer crashes.
- Monitors no longer place events incorrectly after first trial.
- Videos for trials can now be successfully transferred even if they have been renamed.
- The Nexus 2 Matlab/Python Interface now handles calibration-only markers when the calibration-only markers are removed and the trial is reloaded.
- Issue where Quick Report could show joint forces and moments out of phase has been corrected.
- You can now auto-enable a subject using the Python and Matlab SDK "SetSubjectActive" command when importing into a session.
- Using a database with Session folders that are created outside of Eclipse no longer causes subjects to be displayed in the incorrect session.
- Matlab no longer crashes when running dynamic PiG.m on a dynamic trial, even when required values (eg subject mass) are not set, or set to zero.
- Using more than 255 modeled markers no longer corrupts the C3D.
- When multiple cameras or devices are selected, scrolling the Properties pane no longer changes settings.
- You are now asked whether to save a new subject when you select another session.
- When you lock a horizontal axis in a graph, it now remains locked after positioning the orange triangles to select a marker range and after using Delete Range in Trajectory.
- The timecode displayed in the C3D file now matches that displayed by Nexus and the DataStream SDK.
- Model outputs are no longer deleted after running a Kinematic Fit pipeline operation.
- Running an Autocorrelate Events pipeline operation no longer creates an incorrect foot strike event at the beginning of a trial.

## Known issues

The following legacy issues are known to exist in this release.

Description	Workaround
A crash can occur if any Noraxon EMG error messages are not dismissed before shutting down Nexus.	Dismiss all Noraxon EMG error messages before exiting Nexus.
The Load Trial command in the Python SDK is not able to load a trial.	Run the Python script from IDE or command line.
Some of the latest versions of the FFDShow video encoder fail to work properly.	Vicon recommends the use of <code>ffdshow_rev3562_20100907</code> .
Vue video 3D overlay shows a small offset when calibrated in 1080p but displayed in 720p	Upgrade firmware to FW 702 or later.
If a system contains legacy Vicon MX Controls with two ADCs, the second ADC is not read/recognized by Nexus.	Contact Vicon Support.
Running a legacy VPI operation removes non-standard model outputs.	Use the equivalent native operations.

Description	Workaround
AMTI digital device plugins missing required dependencies.	<p>For AMTI Digital Device V1_00.vdd, download Microsoft Visual C++ 2008 SP1 Redistributable Package (x86) from <a href="https://www.microsoft.com/en-gb/download/details.aspx?id=5582">https://www.microsoft.com/en-gb/download/details.aspx?id=5582</a></p> <p>For AMTI Digital Device V1_10.vdd, download Microsoft Visual C++ 2010 Redistributable Package (x86) from <a href="https://www.microsoft.com/en-gb/download/details.aspx?id=5555">https://www.microsoft.com/en-gb/download/details.aspx?id=5555</a></p>
Basler cameras do not work under Windows 10 with Pylon drivers earlier than Pylon5.	If Basler cameras will be connected to Nexus 2.5, update to the Basler Pylon5 SDK and drivers (v5.0.0), which are available from the Vicon website.
Cometa/Aurion ZeroWire/Wave do not work under Windows 10.	Device drivers are not available for Windows 10. Use Windows 7 instead.
When the system frame rate is set above 80Hz, if you enable Preview mode, no preview is displayed for Vicon Vantage cameras (the <b>Camera</b> view is blank).	To use Preview mode with Vantage cameras, select a system frame rate below 80Hz.
When you right-click the <b>Devices</b> node on the <b>System Resources</b> pane, Noraxon is not available in the <b>Add Digital Device</b> menu.	When you install the Noraxon plug-in (ViconInterfaceForNoraxon - v1.0.2.1.msi), change the installation path to C:\Users\Public\Documents\Vicon\Nexus2.x\DigitalDevices\

Description	Workaround
.NET is turned off by default on Microsoft Windows 8, which stops ProEclipse running.	Enable .NET framework 3.5 on Windows 8 machines. To do this, open the <b>Control Panel</b> , click <b>Programs</b> and then click <b>Programs and Features</b> . Click <b>Turn Windows features on or off</b> and select the Microsoft .NET Framework 3.5.1 check the box. You can do this before or after installing Nexus.
MATLAB/Nexus integration will not operate on Windows 7 unless the .NET framework 4.5 is installed. Attempting to run MATLAB pipeline operations reports:  <code>Error Run MatLab Operation</code> <code>Error using NET.addAssembly</code>	Install .NET framework 4.5 from <a href="http://www.microsoft.com/en-gb/download/details.aspx?id=30653">http://www.microsoft.com/en-gb/download/details.aspx?id=30653</a> .
Noraxon Telymyo DTS device halts camera and analog data delivery when Noraxon devices are housed/not charged.	Digital devices now have an <b>Enabled</b> parameter in their <b>Properties</b> pane. To prevent a given manufacturer's plugin from holding up the rest of Nexus, clear <b>Enabled</b> for ALL devices from that manufacturer.
Unable to run legacy Static Gait Model under Japanese Windows.  Log entry reads:  No parameter file found	The legacy Plug in Gait model does not support international character sets. Instead of using the legacy Plug-in Gait model, use the native Nexus 2 replacement gait model (found under <b>Data Processing</b> pipeline operations: <b>Process Static Plug-in Gait Model</b> and <b>Process Dynamic Plug-in Gait Model</b> ).

Description	Workaround
Export c3d at the end of a pipeline does not clear the trial and leaves the trial with a dirty flag (*).	The <b>Export C3D</b> operation does not write out the subjects associated with the trial. To remove the dirty flag on a trial, save the entire trial, which saves all associated files (x2d, xcp, etc), using the <b>Save Trial - C3D + VSK</b> operation.
Video capture duration can be limited directly after deletion from SSD storage.	After deleting your video files, wait a few seconds before starting your next capture. This is because some Solid State Drives require a few seconds to recover full Write speed after file deletion.
Spaces in variable names can cause BodyLanguage to fail.	When creating subject parameters for use in BodyLanguage modeling, use underscores instead of spaces.
Nexus can suffer many problems if Eclipse databases are created in locations that are Read-only. These problems range from data silently failing to save to crashes.	NEVER create Eclipse databases in locations that require administrator privileges to read or write.
Starting a capture very soon after a change to the system frame rate, or a resynchronization, can result in erratic capture behavior (failure or dropped frames).	Avoid starting captures soon after changing the hardware setup.
PAL or NTSC camcorders are included in Active Wand camera calibration if the MX system is set to run at the same standard (i.e. PAL or NTSC).	Before performing active wand camera calibration, disable the camcorders.