

# What's new in Vicon Nexus 2.10?

Vicon Nexus 2.10 is a point release that provides features and enhancements in addition to those that were included in earlier releases of Nexus 2. For more information, see [Nexus 2.10.2 new features and functions](#), [Nexus 2.10.1 new features and functions](#) and [Nexus 2.10 new features and functions](#).

## Nexus 2.10.2 new features and functions

Nexus 2.10.2 provides the following new features and enhancements:

- [Improved Autocorrelate Events pipeline operation](#)

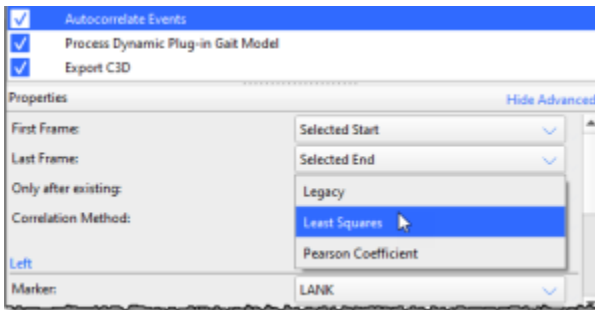
### Improved Autocorrelate Events pipeline operation

Location: **Pipeline Tools** pane > **Events & Timebar** > **Autocorrelate Events** pipeline operation > **Advanced Properties** > **Correlation Method**

You can now choose the correlation method to automatically place events at the correct location in the time bar.

To choose the required correlation method:

1. With a trial loaded in Nexus, in the **Pipeline Tools** pane, either
  - Expand **Events & Timebar** and add the **Autocorrelate Events** pipeline operation to the current pipeline.
  - or
  - Select the **Plug-in Gait Dynamic** pipeline and then select the **Autocorrelate Events** operation.
2. With **Autocorrelate Events** selected, in the **Properties** pane, ensure that Advanced properties are displayed and then click in the **Correlation Method** field to select from the options:



- **Legacy** (reproduces the behavior from Nexus 2.5 and earlier)  
Maximizes the value of:

$$\frac{2 \sum xy}{\sum x^2 + \sum y^2}$$

- **Least Squares** (default)  
Minimizes the value of:

$$\frac{\sum (x - y)^2}{n}$$

- **Pearson Coefficient**  
Maximizes the value of:

$$\frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2} \sqrt{\sum (y - \bar{y})^2}}$$

Where  $\bar{x}$  indicates the mean of x over the sample range

3. Ensure the other properties are as required and then run the pipeline.

## Nexus 2.10.1 new features and functions

Nexus 2.10.1 provides the following new features and enhancements:

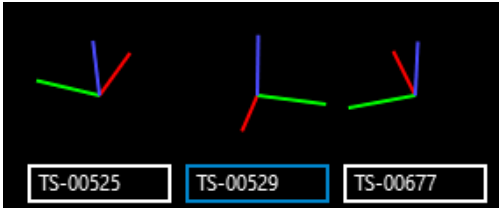
- [Ability to identify selected Blue Trident devices in the 3D workspace](#)

## Ability to identify selected Blue Trident devices in the 3D workspace

In the 3D Perspective view pane, Nexus 2.10.1 indicates the Blue Trident devices you've selected so that you can identify which set of axes correspond to each device when the names of the devices are not visible.

When a Blue Trident is selected, the color of the border around the label of the selected device changes from white to the color selected in the **General View Options** (see below), in the following example, blue (the default color).

Blue Trident devices that aren't selected are displayed with a white border.



**To change the color for selected devices:**

- In the Options dialog box (F7), select **General View Options** in the left column and in the **Properties** on the right, under **General Colors** click the **Selected** color to change it.

## Nexus 2.10 new features and functions

Nexus 2.10 provides the following new features and enhancements:

- [Full integration of Blue Trident sensor \(IMU\) data](#)
- [Ability to include Tobii Eye Tracker](#)
- [Stream data in Open Sound Control format](#)

For a description of the other features and enhancements that have been released since Nexus 2.0, see the other [Nexus What's New PDFs](#).

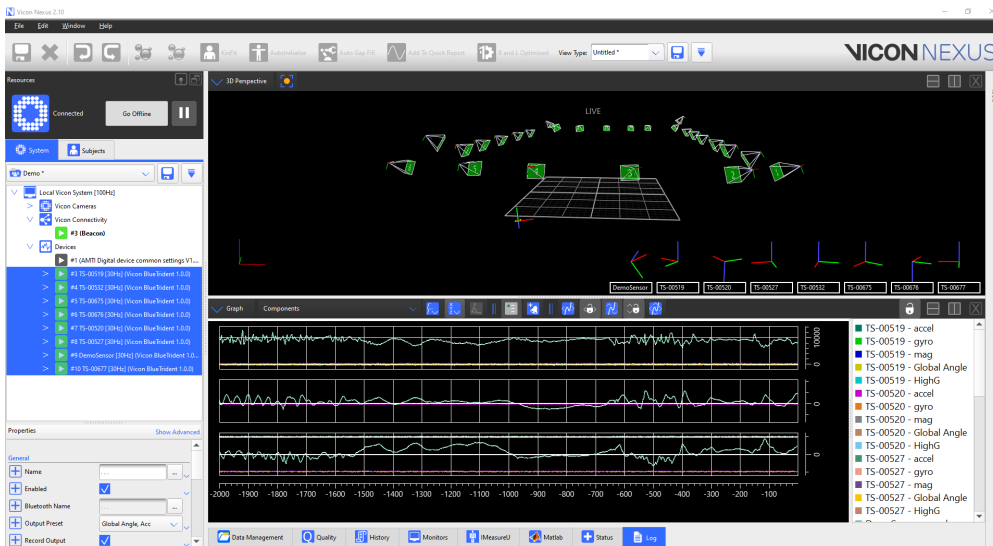
## Full integration of Blue Trident sensor (IMU) data

Location: **System Resources** tab > **Devices**

Blue Trident is the latest Vicon Inertial Measurement Unit (IMU).

Nexus 2.10 provides full integration of Blue Trident sensor data, enabling you to:


- Use a higher number of sensors (up to 18) than was previously possible.
- Stream and capture Blue Trident data including global angles.
- Synchronize your IMU sensor data to your Vicon system:
  - Use hard sync for a high degree of precision, and with high sensor counts (Vicon Beacon required)
  - Use soft sync via Bluetooth, for systems where no Beacon is present
- Within Nexus, align IMUs to the Vicon world.



For information on how to use Blue Trident sensors with Nexus 2.10, see:

### Vicon Nexus User Guide

- [Configure Vicon IMUs](#)
- [Work with Vicon IMUs](#)

 To find out more about Blue Trident sensors, see the Vicon video, [Capture.U Tutorial - Unboxing Blue Trident](#), available on YouTube.

#### Blue Trident sensors

- Windows 10 and above only is supported. Ensure the latest Windows 10 updates are installed.

#### Blue Thunder sensors

- Blue Thunder IMU sensors are not supported in Nexus 2.10. If you want to capture Blue Thunder data, use Nexus 2.9.x.
- You can load existing processed trials with Blue Thunder data into Nexus 2.10 and view the captured IMU data.
- The IMeasureU plug-in is not available in Nexus 2.10.

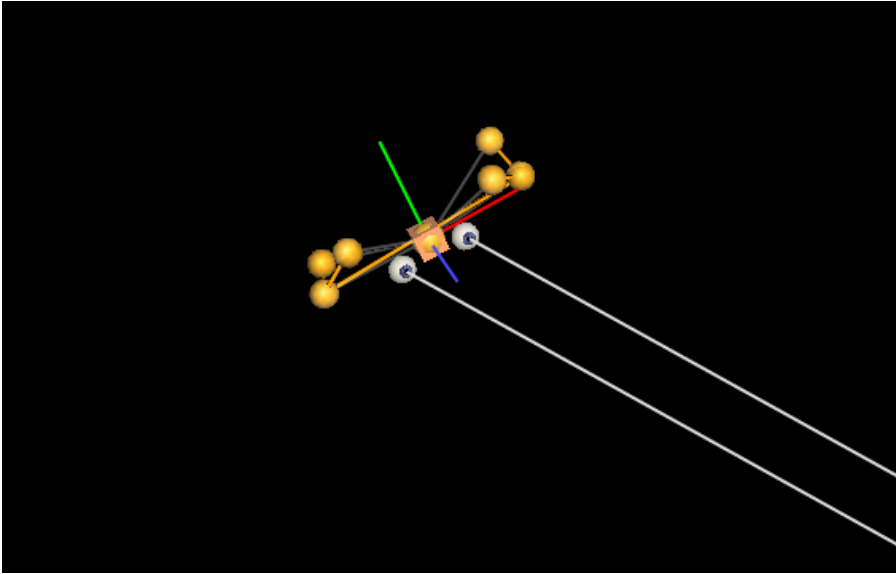
## Ability to include Tobii Eye Tracker

Location: **System Resources** tab > **Devices** > **Add Digital Device** > **Add Tobii Pro Glasses 2**

Nexus 2.10 lets you directly integrate a Tobii Eye Tracker in your Vicon system, enabling you to output eye tracker position and gaze direction, with binocular gaze tracking.

#### Restrictions:

- Tobii integration for only the Tobii Pro Glasses 2.
- Supports only one pair of glasses at a time.



For information about setting up and using Tobii Pro Glasses 2 with Nexus, see [Use Tobii Eye Tracker with Nexus](#) in the *Vicon Nexus Reference Guide*.

## Stream data in Open Sound Control format

Location: **System Resources** tab > **Local Vicon System** > **Advanced** properties > **OSC Stream** section

Nexus 2.10 enables you to stream data from Nexus over UDP using the Open Sound Control format, so that you can access live data in your OSC server application.

For more information, see [OSC Stream section](#) in the *Vicon Nexus Reference Guide*.