What's new in Vicon Evoke 1.4?

About the latest release of Evoke

Evoke 1.4 is the fourth point release of the Vicon software that controls Vicon's Origin system.

It includes new features such as the notification of duplicate objects, the ability to calibrate a single selected camera, and support for the use of High Speed mode for Vicon Vantage cameras, as well as fixing a number of issues.

For a more detailed description of these additions and improvements, see New features in Vicon Evoke 1.4.

> ⚠️ **Vicon Evoke 1.4 and retargeting**
>
> - Evoke 1.4 reads both VST 3.5 and 3.6 files, but exports VST 3.5 files. VST 3.4 files, as used with Evoke 1.2, are compatible.
> - Avoid using Evoke 1.4 with Retarget 1.0.2 or earlier as the cluster template from Evoke 1.4 will not load into these earlier versions of Retarget.
> - If you created retarget files in Retarget 1.0.2 or earlier, to benefit from the improved scale estimation and cluster calibration in Evoke 1.3 and later, recreate the retarget files in Retarget 1.1.2 or later.

New features in Evoke 1.4

Evoke 1.4 includes these new features:

- Object evaluation
- Calibrate selected camera
- System panel improvements
- New device status summary
- High Speed mode for Vicon Vantage cameras
- Remove selected devices
- Other updates

Object evaluation

Object evaluation is a new feature that runs automatically in the background to compare similarity in the pattern of markers for each object that is enabled in the Tracking panel with every other enabled object.

When you create, load or change objects, it is important to avoid placing markers in the same position on different similar objects, as this makes it difficult for Evoke to distinguish between the objects. This can result in tracking problems where objects may be confused with each other, leading to object swaps.

To help you to avoid this issue, Evoke evaluates the objects and if there is a high likelihood of confusion between objects, it flags them with a yellow warning triangle on the Tracking panel.

To view more information about the issue, hover the mouse pointer over the warning symbol.
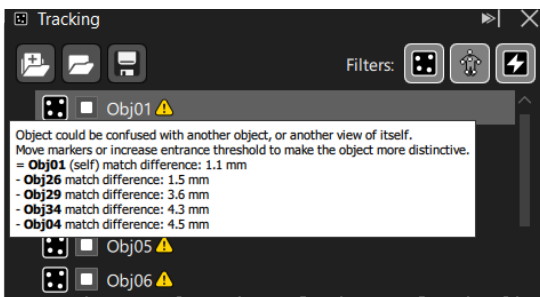
To prevent objects from appearing to be too similar or to reduce the risk, you can either increase the **Entrance Threshold** of the object if possible, or modify the marker positions.

For more information, see Understand object evaluation.

Calibrate selected camera

You can now calibrate or re-calibrate a single camera, without having spend time re-calibrating the whole system. This enables you to add a new camera to your system, or move a single calibrated camera, and calibrate with a shorter wand wave, saving the time it takes to perform a longer wand wave for all the cameras.

ⓘ

> **ⓘ Note**
> You can calibrate only one selected camera at a time. This feature works for both optical and video cameras.

To calibrate a selected camera:

1. With the moved or additional camera positioned in the volume, in the **System** tree, select the relevant camera, which is flagged as Uncalibrated (

) if it is a new camera, or Bumped ( ) if it is a moved camera that was connected when it was moved.

2. On the **Camera Calibration** tab, in the **Auto-Masking** section, click the **Cameras to Mask** list and then click **Selected Cameras**.
3. Click **Start (Selected).**
   The camera masking is updated to include the new or moved camera.
4. In the **System** tree, ensure the relevant camera is still selected.
5. In the **Calibration Wave** section:

   a. To ensure that only the wand wave for the selected camera is required to meet the Auto Stop Minimum Wands value, make sure **Auto Stop** is selected.
   b. Click **Start (Selected)**.
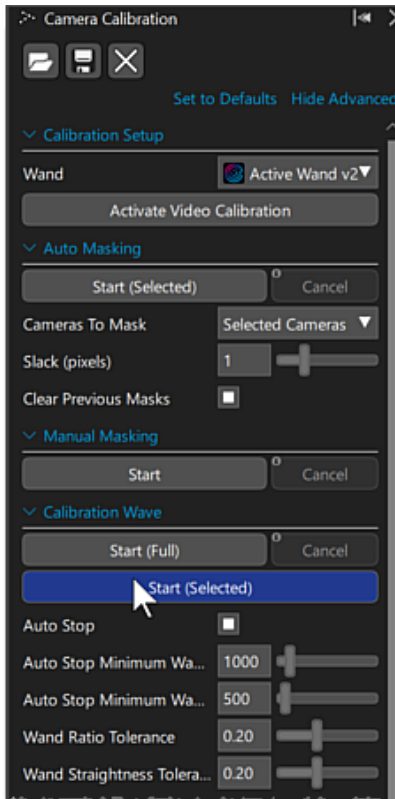
6. In the volume, ensure that the person waving the wand does not stand too close to the new or moved camera, so that the wave can be captured by both the directly affected camera and the adjacent cameras.
   During calibration, the selected camera is at the top of the Wand Count list until its wave is completed, when the list returns to the usual (device number) order.
   Calibration takes noticeably less time than the original full system calibration.

   When calibration is complete, in the **System** tree, the relevant camera is flagged as connected and calibrated, with no other icons ( ).

System panel improvements

The **System** panel has been improved for 1.4, making it more responsive and providing more helpful feedback, especially for large systems.

System and device parameters have been reorganized to make it easier to find the options you need.

System file settings are now available from the **System Settings** menu, to the right of the top menu bar, next to **View Settings**.
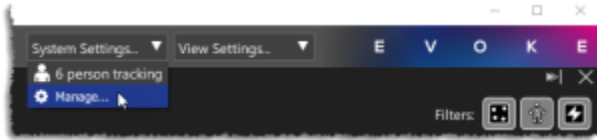

You can now remove disconnected or selected devices from the system (see Remove selected devices).

Most application configuration files are now stored in JSON format rather than XML. Configuration files created in Evoke 1.3.# or earlier are converted on import into Evoke 1.4.

New device status summary

Device category headers are now always visible, and include a summary of device status and warnings. This makes it easier to view the current status of the system and to identify any issues at a glance.

For Pulsars, this includes battery charge level and number of devices on charge.
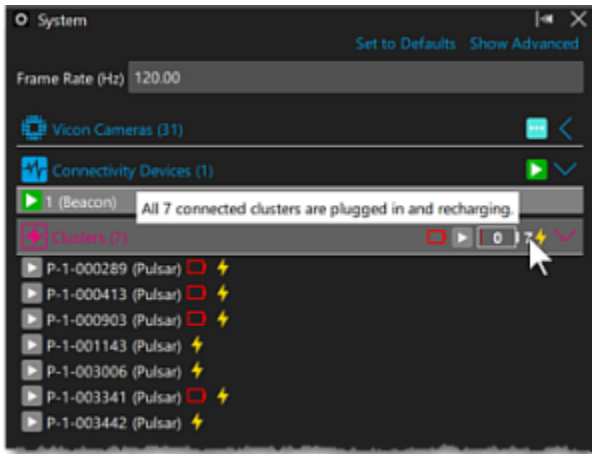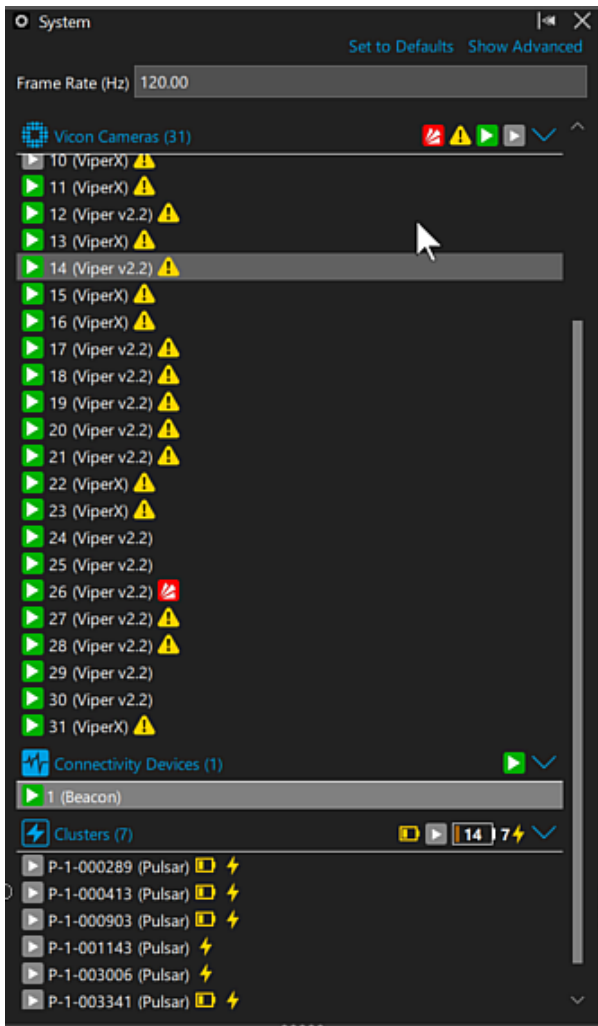
High Speed mode for Vicon Vantage cameras

When upgraded to the latest firmware (Firmware 725 and later), Evoke 1.4 enables you to use **High Speed** mode with your Vantage cameras without having to change the field of view (FOV) or lens. When you capture optical data, subsampling (selectively reducing the pixel count) enables you to run at high camera frame rates without reducing the FOV (frame size).

Previously, to run Vantage cameras at higher frame rates while maintaining their maximum resolution, windowing was used, which reduces the size of the FOV.

Now, in new **High Speed** mode, you can run your Vantage cameras at higher frames rates while maintaining the FOV. You can change frame rates during capture and you don't need to set up your cameras again when you increase the frame rate, as the FOV is unchanged.

Note that because the higher speeds are achieved through subsampling (removing some pixels from the frames), some reduction in resolution is incurred. For details, see High-speed mode in the *Vicon Vantage Reference Guide*.

To select high-speed mode:

1. At the top of the **System** panel, set the frame rate to the speed you want to use in High Speed mode.
   A warning may temporarily be displayed, alerting you to the discrepancy between the requested frame rate and the actual system frame rate, until you select high speed mode for all the relevant cameras, as explained next.
2. In the **System** tree, select one or more cameras.
3. In the Properties pane below, ensure the **Advanced** properties are displayed and in the **Optical Setup** section, click the **Sensor Mode** list and select **High Speed**.
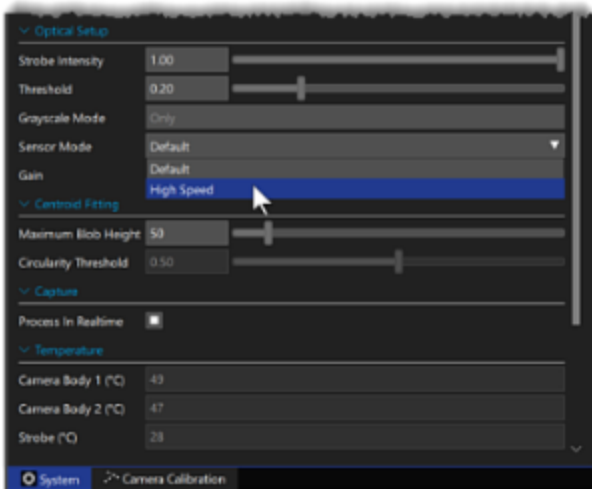
In the **Cameras** view in the Workspace, notice that the High Speed mode icon is displayed to the right of the other information about the selected camera(s).
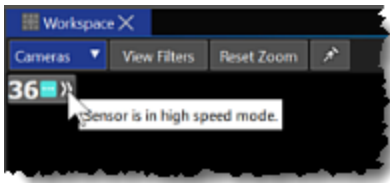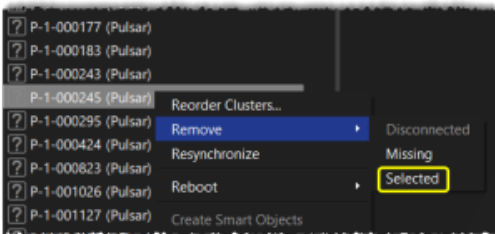

After a few moments, the system runs at the new speed.

Remove selected devices

In Evoke 1.4, a new option enables you to remove selected missing cluster(s) from the list of devices on the **System** tab.

To remove unwanted devices:

1. On the **System** tab, right-click on the device(s) that you want to remove.
2. Point to **Remove**, and then click **Selected**.

Other updates

- **Improved object recognition** For more reliable object recognition, the **Entrance Threshold** has been increased to a default value of 1.0. This ensures that 100% of markers are needed to boot the object, but note that it may take longer to boot than the previous default of 0.00.

  The entrance threshold is set in two places:

  - The overall entrance threshold (**Processing** tab **> Object Tracking** section > **Entrance Threshold** setting) sets the default entrance threshold for all objects.
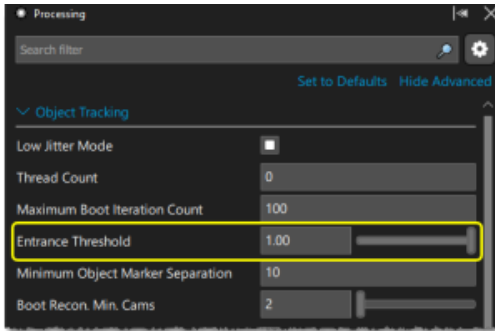
Normally, we recommend that you leave this at its default setting. You can override this setting for individual objects by using an object preset, as described next.

- You can change the entrance threshold for a selected object by using an object preset.
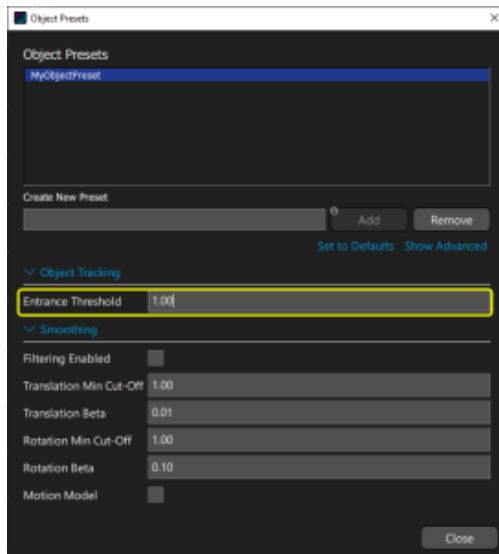
For more information, see Resolve issues with object similarity in *Getting started with Vicon Evoke*.

- **Additional events added to the Log**
- **Firmware update** Evoke 1.4 includes the Pulsar Reprogramming Tool with firmware updated to 727. This update provides stability and connectivty improvements as well as addressing a number of issues.
- **Snap to 90 enabled by default**. To avoid having rotated camera views that don't fit in the camera view grid, **Snap to 90°** is now enabled by default.
  To change this, in the **Cameras** view, display **View Filters** and clear the relevant check box.
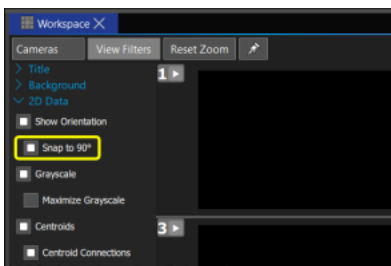
- The **Processing** panel now offers a search facility and other controls that determine the visibility of the component properties.