From Eye to Insight

Viventis Deep Microscope Control Software

Release Notes for Viventis Deep Microscope Control Software Version 3.1.3

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Release Documentation for Viventis Deep Microscope Control Software 3.1.3

This document describes the 3.1.3 release of the Viventis Deep Microscope Control Software for image acquisition for advanced 3D imaging research.

Please read this document before installing a copy of this software.

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1. Compatible Microscopes and Technical Requirements

1.1 Compatible Microscopes and Hardware Requirements

The Viventis Deep Microscope Control Software 3.1.3 is a release for the Viventis Deep platform. Accordingly, the Viventis Deep Microscope Control Software is not compatible with any other microscope platform from Leica Microsystems CMS GmbH, i.e., Viventis SCAPE. All Leica-supplied CUDA workstations for the Viventis Deep platform meet the minimum PC requirements of the Viventis Deep Microscope Control Software 3.1.3 control software. Furthermore, for offline processing and analysis we recommend Leica-supplied CUDA workstations for compatibility and product security reasons, too.

Automatic settings import and conversion from previous versions of Viventis Deep Microscope Control Software at application startup is supported from version 2.0.0.5

1.2 Operating System Requirements

Viventis Deep software 3.1.3 is a genuine 64-bit program and runs on Windows 11 64bit.

1.3 Product Performance and Security Recommendations

For optimal performance and the safety of the product, Leica Microsystems CMS GmbH strongly recommends the installation of/upgrade to Viventis Deep software 3.1.3 for systems of the Viventis Deep platform. Furthermore, Leica recommends the installation of all available security updates and hotfixes for Microsoft Windows. Please check regularly on our Product Security web page to get the latest news regarding product security vulnerabilities and mitigation strategies (if applicable). If you need further information or are not sure about security fixes suggested by a system component manufacturer, please get in touch with us.

2. Viventis Deep 3.1.3 Software Release

Viventis Deep Software 3.1.3 is a new release version introducing new functionalities and bug fixes.

3. Recommendations

For optimal performance and the safety of the product, we strongly recommend the installation of/upgrade to Viventis Deep Software 3.1.3 for all systems of the Viventis Deep platform.

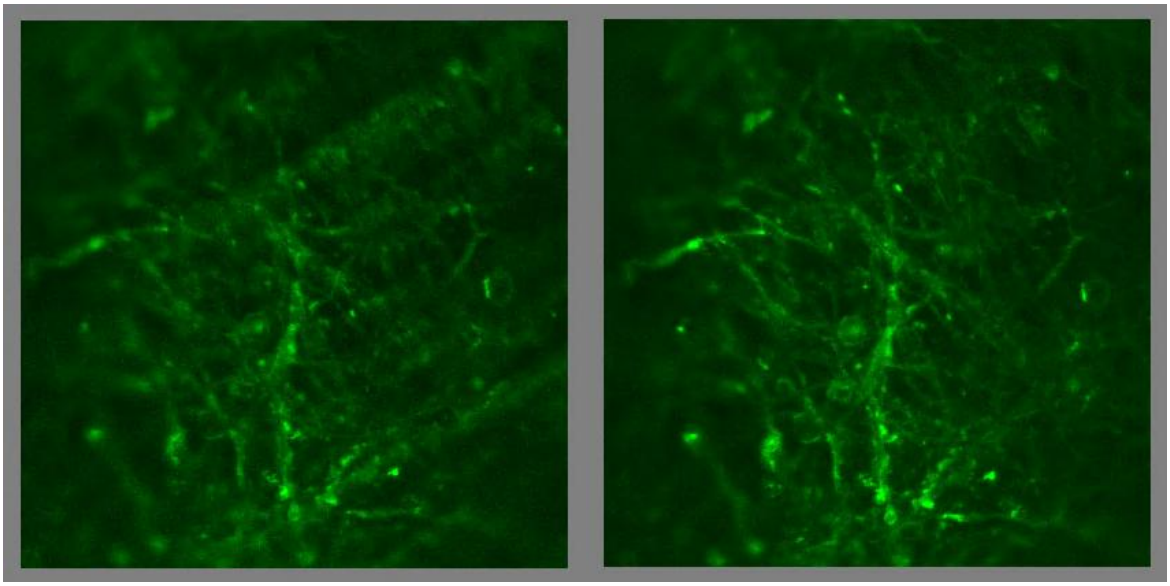
Upgrades from older versions to 3.1.3 need to be done by either of the following paths:

1. Updates from versions older than 2.0.0.5 must be done manually.
2. Updates from version 2.0.0.5 and newer can be done automatically. After installation of a new version, the software will automatically import settings from the older version during the first start.

4. New Functionalities

Beam Pivoting now available for Viventis Deep

- Pivoting of the illumination beam added to mitigate shadowing effects (enable/disable in exposure settings).
- MinRotationX and MaxRotationX to illumination objective user settings added to define the allowed range of rotation for the pivoting (measured during objective block alignment).
- Image without (left) and with (right) pivoting enabled.



Copy settings profiles and channel settings in acquisition settings

- Menu item to copy settings from one profile or channel to another, reducing repetitive manual work.

Experiment size estimation

- Experiment size is now being estimated, and a warning shown if there is not enough disk space.

Faster compression

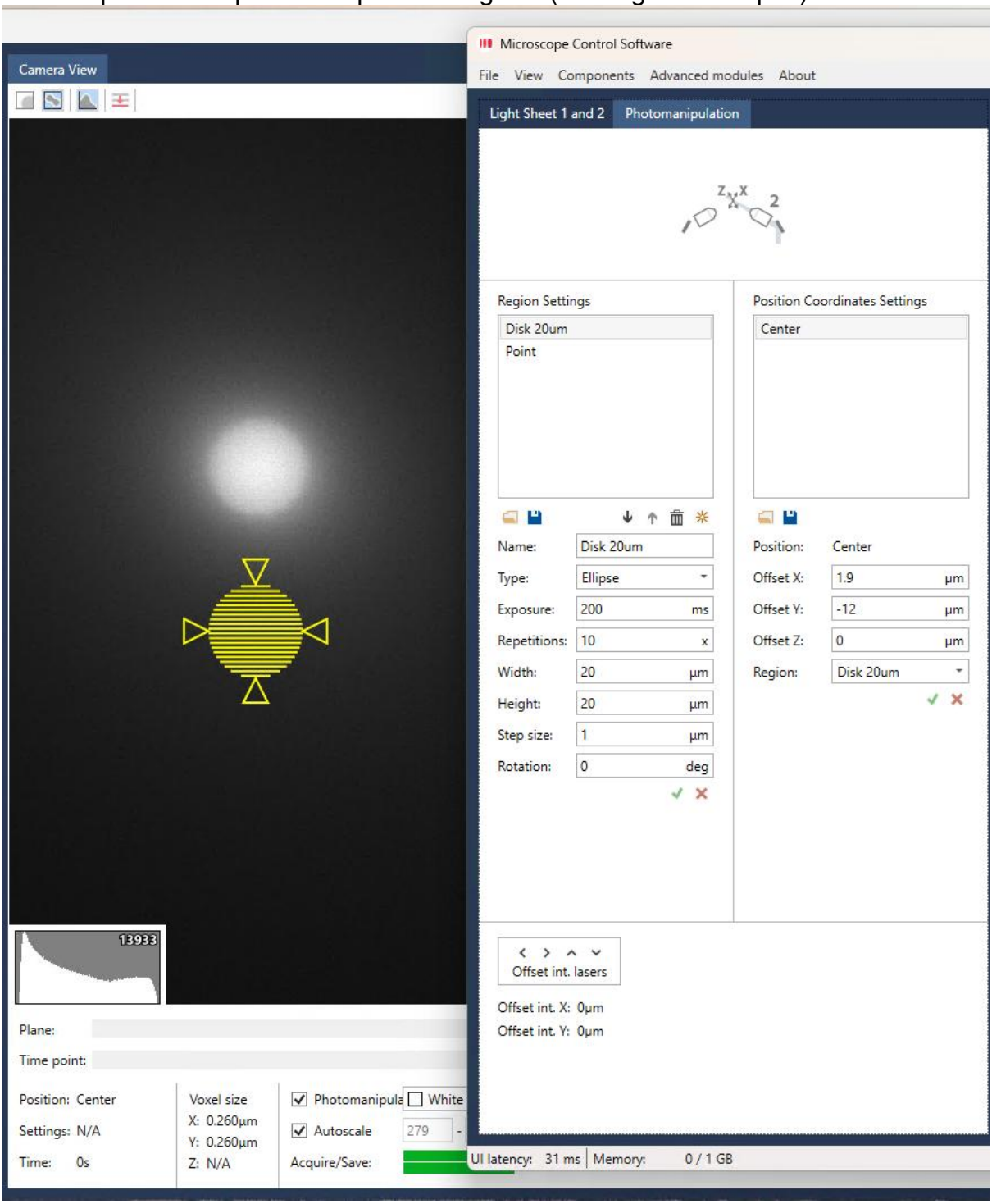
- Fully parallel compression for Zstandard and Jetraw added

Extended Metadata

- Add acquisition time to image metadata.

Extended Photomanipulation Functionalities for 2D photomanipulation regions

- Added option of 2D photomanipulation regions (rectangle and ellipse)



- Step size in photomanipulation regions user settings added to define the step size between lines in the 2D photomanipulation regions.

Illumination & Beam Control

- Shading correction and scan plane alignment advanced modules select automatically the optimal beam.

Enhanced objective block alignment

- In objective block alignment measure for each light sheet a pivoting range

5. Solved Issues / Solved Restrictions

Removed from SW/UI

Acquisition Settings

- Remove the **Z-Stack Synchronization** icon from Acquisition Settings.

Changed in SW/UI

Time-Lapse & Acquisition Control

- Changes to time interval and repetition settings are now applied immediately while waiting between time points.
- The system now automatically returns to the first position at the end of each time point.

Hardware & Compression Management

- Jetraw compression is now automatically enabled or disabled based on the detected camera configuration.
- Increased the maximum supported exposure time to **500 ms**.

Diagnostics & Logging

- Improved logging of JSON settings conversion errors.
- Delay warning messages now include the duration of the previous time point to aid troubleshooting.

Bugs Fixed

Acquisition Reliability

- Fixed delays when cancelling camera operations.
- Fixed acquisition stalls at the end of large tiled Z-stack acquisitions.
- Fixed an infinite wait condition while waiting for camera readout.
- Improved task-cache robustness to prevent acquisition freezes.

System Stability

- Fixed a crash caused by missing histogram data.
- Fixed a crash when aborting an acquisition during data writing.
- Fixed a crash that could occur after filter wheel detection failures.

Positioning & Navigation

- Fixed movement to marked positions:

    - XY moves no longer trigger unnecessary Z movement.
    - Z moves no longer trigger unnecessary XY movement.

Photomanipulation

- Fixed an issue that prevented photomanipulation from running when **All** positions or time points were selected.

Calibration & Alignment Improvements

- Improved robustness of calibration and alignment workflows by reducing failures caused by intermediate calculation errors.

Environment Control

- Fix invalid gas dependency in environment controller: O2 was incorrectly dependent on CO2, the dependency should be reversed.

6. Open Issues / Restrictions

The following list enumerates the known, unresolved anomalies of Viventis Deep Microscope Control Software 3.1.3.

No known open issues.