4.2.1765
Highlights

This release ships a first version of Ensenso Engage - our new GUI for setting up and viewing Ensenso cameras. We will add more features in the next releases, but please try out the existing functionality and send us feedback.

PartFinder is now much easier to use and set up. See the details below.

The new ensenso-cli tool can configure IP addresses and update the firmware of cameras from the command line.

The Ensenso SDK can now be used from a self-contained archive file without any further installation.

Camera Parameters

NxLib: An updated firmware for GigE Vision based N-series, S-series and X-series sensors improves the performance of setting parameters, especially when using multi exposure. [#5819]

NxLib: The maximum exposure and gain allowed for automatic adjustment can now be limited. [#3240]

NxLib: The maximum flash time for B- and C-series cameras was increased to 120ms. The previous limit of 10ms still applies to auto exposure by default to avoid issues with insufficient power supplies. See the illumination specification for more information. [#5532]

PartFinder

Substantial improvements to the PartFinder algorithm make it much easier to use and set up:

Simpler clustering: Collision boxes for clustering and overlap removal have been removed and reduced to a simple overlap percentage.

Less parameters for template generation: The parameters for in-plane template rotations and distance scaling of templates have been removed and will be generated automatically.

No need to choose refinement methods: The refinement method “Combined 2D/3D” has been optimized to give precise results without selecting between different methods.

Presets have been revised to reflect these simplifications and provide improved results in a wide variety of situations and part geometries.

Check out the revised first steps guide.

Detailed list of changes:

The clustering algorithm uses a new proximity measure based on the overlap fraction of 2D projections, see the new Cluster/Overlap parameter for the Find function. The old clustering based on the collision of scaled bounding boxes is deprecated but still supported. [#5623]

The version of PartFinder model dumps is updated to 2.0.0. This breaks compatibility with all previous model dumps. [#5623]

A new non-parametric duplicate removal algorithm is used. The old duplicate removal based on collision of scaled bounding boxes is deprecated but still supported. [#5623]

Combined refinement uses multiple ICP iterations at each step. Standalone 3D refinement is now disabled by default. [#4533]

Add support for a CAD model crop regions, see CropRegions parameter.

Enhance approximate symmetry resolution, see ScoreRegions parameter. [#5722]

Increase the default hypothesis count limit from 20000 to 40000.

Decrease the default hypothesis score threshold from 0.7 to 0.5.

Removed DistanceRatio und InPlaneRotation parameters. The respective values will be generated automatically.

Other New Features

NxLib: With the new PointMap parameter, ComputeNormals can now compute normals for a point cloud transformed by RenderPointMap. See the guide on texturing point clouds for an example. [#4983]

NxLib: A new unified tree structure for information about discovered, but not yet opened devices makes it easier to work with different camera models. This replaces some nodes, which are now deprecated. Please check the upgrade notes for details.

NxLib: Add new BoundingBox, Normals and PointCloud parameters to SaveModel [#5872, #5951]

NxLib: Improved automatic mode for rendering billboards in RenderView. Larger automatic size and size-limited scaling behaviour for close distances. [#5838]

NxLib: Resolve two fold Euler rotation ambiguity by choosing the representation with the smallest sum of absolute values. [#5774]

.NET: Enable deterministic closing of Ensenso::NxLibDebugBlock via the dispose pattern.

NxProfiler: Save the entire file or only the selected portion to a new file. [#3845][#4941]

NxProfiler: Open files totaling 2GiB in size or larger.

Bugfixes

NxLib: File cameras from color sensors with hardware gamma now correctly save and restore their color information. Images loaded from file cameras which were saved with older versions can show incorrect colors. [#5848]

NxLib: Guarantee that the ByEepromId tree is up to date immediately after initializing the NxLib or changing an EEPROM ID. It could previously be necessary to wait for a short time before it was updated. [#5817]

NxLib: Fix the user-defined initialization of camera and pattern pose in hand-eye calibration. [#5860]

.NET: Fix spurious bugs where string parameters to NxLib functions were garbage collected while still being used in the NxLib function. [#5770]