roboception
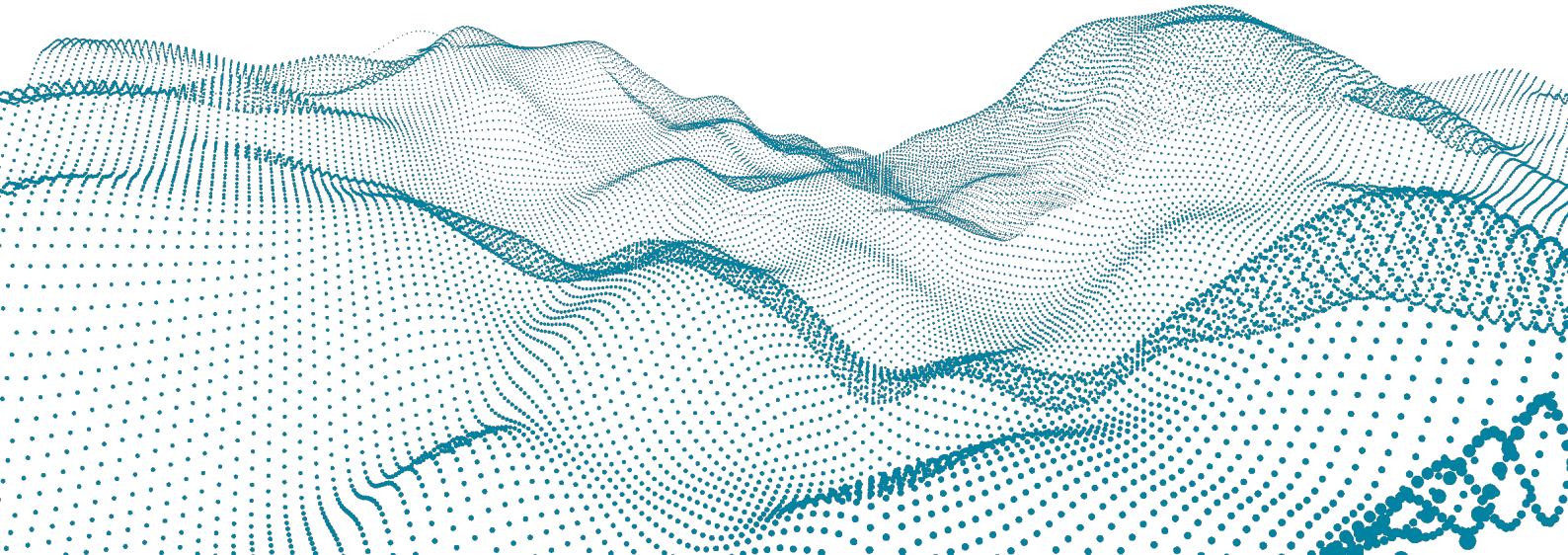
rc_visard_ng 3D Stereo Sensor

FIRMWARE CHANGELOG

Contents

1 24.10.0 (2024-10-24)

1.1 New Features

- ItemPick (`rc_itempick`), BoxPick (`rc_boxpick`) and SilhouetteMatch (`rc_silhouettematch`): New sorting strategy to sort grasps and matches according to their distances from a user-defined point (see e.g. SilhouetteMatch sorting strategies)

- Added UserSpace proxy configuration

- Add CA Certificate upload functionality

- GEV server (`rc_gev_server`):
    - Add RawCombined component and file interface for camera calibration via rc_cube
    - Add registers and chunk data with selfcalibration counter and offset

1.2 Improvements and Fixes

- UserSpace:
    - Limit container logs size.
- Hand-Eye Calibration (`rc_hand_eye_calibration`):
    - Improved robustness of grid detection
- BoxPick+Match (`rc_boxpick`):
    - Fixed untextured rectangles not being returned when minimum coverage is given
- SilhouetteMatch (`rc_silhouettematch`):
    - Improved detection of objects when "Object Plane Detection" is used
- WebGUI:
    - Add button to download model or collision model ply from SilhouetteMatch template
    - Add option to filter database lists
    - Add option to toggle gripper element visibility
    - Rename R, P, Y to Rx, Rz, Rz and Roll/Pitch/Yaw to Rotation
    - Bring back logarithmic slider scaling for exposure times and min/max distances
    - Fixed SilhouetteMatch CAD objects not showing in 3D result visualization
    - Minor layout improvements and fixes

2 24.07.0 (2024-07-26)

2.1 New Features

- Manually configure additional NTP servers
- Allow UserSpace configuration via QR code
- Measure node (`rc_measure`)
    - New Measure node
- BoxPick+Match (`rc_boxpick`)
    - Support detection of 3D boxes by setting z dimension of item model to detect rectangles corresponding to all sides of a box
    - Detection verification when 3D boxes are detected inside a load carrier
    - Visualization of 3D boxes in WebGUI
    - New allow_untextured_detections parameter to also return rectangles with matching dimensions but without matching view
    - possibility to set user-defined names for views for easier reference
- SilhouetteMatch (`rc_silhouettematch`)
    - Add new check_collisions parameter and check_collisions_during_retraction parameter
- WebGUI:
    - Allow SilhouetteMatch base plane calibration in external pose frame
    - New interactive gripper creation by moving elements with the mouse

- – New System Time page for configuring synchronization including additional NTP servers
- – Option to duplicate and rename load carriers, grippers and regions of interest

2.2 Breaking Change

- Stereo Matching (`rc_stereomatching`)
  - – Moved service call `measure_depth` to new node `rc_measure`

2.3 Improvements and Fixes

- BoxPick (`rc_boxpick`)
  - – Return only items corresponding to the returned grasps
  - – Higher matching performance on small or weakly-textured boxes
  - – Improved grasp ellipse computation for partly occluded textured rectangles
- gRPC Interface:
  - – Fix subscribing only to left image
- WebGUI:
  - – Add filter possibility to dropdown fields and support arrow and tab keys
  - – Show more container information on UserSpace page
  - – Remove HDR warning for tag detections
  - – Make "Exact Pose" the default when setting a pose for a load carrier
  - – Add acquire button to hand-eye calibration exposure settings when in software trigger node
  - – Fix cut-off point cloud in 3D result visualization
  - – Show hint in camera calibration and warning bar when self calibration counter gets greater than 0
  - – Support arrow keys to navigate through matches and grasps in 3d result visualizations (Item-Pick, BoxPick, SilhouetteMatch)
  - – Delay hover popups for grasps, matches and load carriers in 3D result visualizations
  - – Bring back progress bar on template and CAD element upload
  - – Add option to duplicate a gripper element or a grasp
  - – Minor layout improvements and fixes

3 24.04.2 (2024-05-15)

3.1 Fixes

- SilhouetteMatch (`rc_silhouettematch`):
  - – Fix collision checking with point cloud for grippers with rotated elements.
- WebGUI:
  - – Minor fixes.

4 24.04.1 (2024-05-08)

4.1 Improvements and Fixes

- Camera (`rc_camera`):
  - – Limit max exposure time to 23ms and set that as default.
  - – Fixed reporting out1 reduction without delay when camera trigger is on.
  - – Fixed turning off triggering and resetting exposure time and gain when enabling / disabling temporary exposure settings (for camera calibration).
- All rc_reason detection modules:
  - – Trigger camera if needed (i.e. when no depth image needed, but camera in trigger mode).
- BoxPick+Match (`rc_boxpick`)':
  - – Fix crash in grasp computation in some corner cases when object is partly outside the image.

- WebGUI:
  - Minor fixes and improvements.
  - Disable exposureAdaptTimeout on DepthImage page when in Continuous mode.
  - Bring back progress bar on template and CAD element upload.

5 24.04.0 (2024-04-23)

5.1 New Features

- Camera (`rc_camera`):
  - Support for triggering camera (software or hardware) via new parameters:
    * acquisition_mode
    * trigger_source
    * trigger_activation
- WebGUI:
  - New collision check visualization: Show contact point and provide collision category (in collision with LoadCarrier, Matches or PointCloud, etc.) in 3D visualisation for all rc_reason modules.

5.2 Improvements and Fixes

- TagDetect (`rc_april_tag_detect`, `rc_qr_code_detect`):
  - Allow setting size also when no ID or only family is given and allow size filtering also in these cases.
- LoadCarrier (`rc_load_carrier`):
  - Improve detection for some corner cases.
  - Add detection timeout of 25s
- BoxPick+Match (`rc_boxpick`)':
  - Allow grasps only on unoccluded item surface.
- WebGUI:
  - SilhouetteMatch: Draw unchecked grasps in yellow color.
  - Gripper: keep global element and TCP pose when changing the parent

6 24.01.1 (2024-03-11)

6.1 Improvements and Fixes

- Ensure gRPC server can always start by adding port to reserved ports.
- Don't scale down visualization images.
- Hand-Eye Calibration (`rc_hand_eye_calibration`)':
  - Forcing detection of whole grid again as partial detection could result in degraded calibration in some corner cases. Instead exclude overexposed grid points from calculation.
  - Excluding grids if more than 16 calibration points (i.e. 4 squares) are over-exposed.
- EKI Bridge (`rceki_bridge`):
  - Log received and sent messages with info level so they show up in WebGUI log for ease of KRL program debugging.
- REST-API:
  - Prevent manually setting time to a date before firmware build time.
- WebGUI:
  - Minor improvements.

7 24.01.0 (2024-01-29)

first public release

roboception

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FIRMWARE CHANGELOG

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