

# roboception

Roboception GmbH | July 2024

## rc\_visard\_ng 3D Stereo Sensor

FIRMWARE CHANGELOG



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## 1 24.07.0 (2024-07-26)

### 1.1 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

### 1.2 Breaking Change

- Stereo Matching (rc\_stereomatching)
  - Moved service call `measure_depth` to new node `rc_measure`

### 1.3 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 (ItemPick, 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

## 2 24.04.2 (2024-05-15)

## 2.1 Fixes

- SilhouetteMatch (rc\_silhouettematch):
  - Fix collision checking with point cloud for grippers with rotated elements.
- WebGUI:
  - Minor fixes.

## 3 24.04.1 (2024-05-08)

### 3.1 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.

## 4 24.04.0 (2024-04-23)

### 4.1 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.

### 4.2 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

## 5 24.01.1 (2024-03-11)

### 5.1 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.

## 6 24.01.0 (2024-01-29)

first public release

# roboception

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FIRMWARE CHANGELOG

### Roboception GmbH

Kaflerstrasse 2  
81241 Munich  
Germany

info@roboception.de  
www.roboception.com

**Tutorials:** <https://tutorials.roboception.com>  
**GitHub:** <https://github.com/roboception>  
**Documentation:** <https://doc.rc-visard-ng.com>  
<https://doc.rc-visard.com>  
<https://doc.rc-viscore.com>  
<https://doc.rc-cube.com>  
<https://doc.rc-random.com>  
**Shop:** <https://roboception.com/shop>

### For customer support, contact

+49 89 889 50 790  
(09:00-17:00 CET)

support@roboception.de

