

# Changelog for Roboception rc\_visard firmware image

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## 1.4.0 (2018-10-19)

### New Components

- ItemPick (`rc_itempick`): The optionally available software component provides an out-of-the-box and model-free perception solution for robotic pick-and-place applications with suction grippers.
  - documentation: <https://doc.rc-visard.com/latest/en/itempick.html>
  - access via REST-API
  - configurable via Web GUI

### New Features

- Web GUI redesign:
  - additional modules pages:
    - ItemPick
    - AprilTag and QRCode Detect
    - IOControl
  - camera page:
    - set gain manually
    - set white balance manually for color cameras
- GigE Vision/GenICam:
  - support for GigE Vision 2.1 MultiPart
  - add `DepthAcquisitionMode` and `DepthAcquisitionTrigger`
  - add SFNC 2.4 category `PtpControl` with
    - `PtpEnable`
    - `PtpDataSetLatch`
    - `PtpStatus`
    - `PtpOffsetFromMaster`
  - add `AcquisitionMultiPartMode` enum with
    - `SingleComponent`: Immediately send one single component per frame/buffer when it becomes available.
    - `SynchronizedComponents`: Only send a multipart frame/buffer iff all enabled components are available for that time.
- Improved auto exposure for reducing overexposure

### Fixes

- REST-API:
  - return 400 error if parameter is out of min/max range
  - update Swagger UI to get correct cURL examples for Windows

### Other Changes

- Web GUI:
  - removed French and Chinese translations

## 1.3.1 (2018-08-28)

### Fixes

- REST-API:
  - fix error messages on service call failures (when some messages fields are of wrong type)
- GigE Vision/GenICam:
  - only reset block id when a new stream channel is opened
  - reduce latency on changing enabled components
- Web-GUI:
  - make doc links work in proxied environment

## 1.3.0 (2018-07-25)

### New Components

- IO and projector control (`rc_iocontrol`): The optionally available software component allows read and write access to the `rc_visard`'s GPIOs, e.g. to synchronize with external pattern projectors.
  - documentation: <https://doc.rc-visard.com/latest/en/iocontrol.html>
  - access via REST-API
  - access via GigE Vision/GenICam interface:
    - category: `DigitalIOControl`, features: `LineStyle`, `LineSource`, etc.
    - custom `AcquisitionAlternateFilter` which makes it possible to receive only images with/without projector(gpio) on

### New Features

- TagDetect (`rc_april_tag_detect` and `rc_qr_code_detect`):
  - add `detect_inverted_tags` parameter that allows detection of negative, i.e. black/white inverted QRcodes and AprilTags in front of black background.
  - possibility to specify approximate tag size to resolve ambiguous stereo tag matching
- GigE Vision/GenICam:
  - add support for setting exposure region:
    - `ExposureRegionWidth`, `ExposureRegionHeight`, `ExposureRegionOffsetX`, `ExposureRegionOffsetY`
  - support extended chunk mode
  - new SFNC 2.4 features:
    - `Scan3dFocalLegth`, `Scan3dBaseline`, `Scan3dPrincipalPointU`, `Scan3dPrincipalPointV`
- SLAM (`rc_slam`):
  - add services to persist and load onboard created maps (`save_map`, `load_map`, `remove_map`)

### Other Changes

- `rc_stereomatching`:
  - remove `force_on` parameter from public interface
- `rc_itempick`:
  - add `clustering_max_surface_rmse` parameter
  - performance improvements

## Fixes

- `rc_stereo_ins`:
  - fixed correction offsets in case of long vision outages
- `rc_april_tag_detect` and `rc_qr_code_detect`:
  - fix memory leak
  - improved matching between left and right image
- REST-API:
  - fix locking of service calls if module is not licensed
  - make log download work in tunneled/proxied environment
  - fix persistent storage of boolean parameters
- GigE Vision/GenICam:
  - fixes for better compatibility with some clients
  - some nodes like PixelFormat, Width, Height now correctly depend on ComponentSelector
  - DeviceVersion: report image version instead of `rc_gev_server` version

## 1.2.1 (2018-05-04)

### Changes

- `rc_gev_server`:
  - add `packet_size` to status values in REST-API

### Fixes

- `rc_slam`:
  - fixed map localization
  - fixed various internal issues
  - do "restart" when "start"ed in HALTED, so the internal state is cleared.
- `rc_stereo_ins` and `rc_dynamics`
  - fixes for communication timeouts
  - Use start on SLAM, not always restart (which drops the map)
- GigE Vision/GenICam:
  - fix race on (un)subscribing to images on heartbeat timeout
- REST-API:
  - fix loading of saved boolean parameters at startup

## 1.2.0.1 (2018-04-05)

### Fixes

- `rc_itempick`:
  - Make sure that the grasp z-axis points into item (according to the camera z-axis)

## 1.2.0 (2018-03-29)

### New modules

- `rc_itempick`

- `rc_april_tag_detection`
- `rc_qr_code_detection`

## Changes

- `rc_hand_eye_calibration`
  - add `remove_calibration` service

## Fixes

- request NTP servers from DHCP
- `rc_stereocalib`
  - Force syncing of calibration files and images to disc
- Web GUI:
  - show hand-eye calibration images again
  - update chinese translation

### 1.1.1 (2018-02-22)

## New Features

- `rc_stereocamera`:
  - added parameters to select a rectangular region used for calculating auto exposure:
    - `exp_offset_x`, `exp_offset_y`, `exp_width` and `exp_height`

## Changes

- `rc_hand_eye_calibration`:
  - provide `robot_mounted` bool with `get_calibration` service
- REST API:
  - include detailed info for all nodes (status, parameters, services) in log tarball
  - limit to 10 destinations per datastream

## Fixes

- GigE Vision/GenICam:
  - immediately sync network settings to disk after changes
- Web GUI:
  - minor update to chinese translations
- fix switching of partitions via magic packet (via `rcdiscover`)
- improve system robustness under high load
- REST API:
  - fixes for ros service call response to API mappings
  - fix: correctly boot into new image if sensor is power-cycled immediately after update
- `rc_stereo_ins`:
  - fix initialization when camera doesn't see anything
  - improve robustness
- `rc_slam`:
  - autorecovery now also recovers the map

- `rc_dynamics`:
  - improve performance and robustness

## 1.1.0 (2018-01-19)

- Web GUI now also in French and Chinese
- new "producer" field in `rc_dynamics_msgs` Frame and Dynamics
- REST API:
  - fix bool parameters, actually return true/false and validate input correctly
- first release of SLAM
- `rc_dynamics`:
  - add `start_slam`, `stop_slam`, `restart_slam` services