

Vision-RTK 2 Release Notes

Release v2.77.2

SEPTEMBER, 2023

Table of Contents

1.	Overview	2
2.	Release notes	2
1.1	Positioning	2
1.2	GNSS.....	2
1.3	Web interface.....	2
1.4	Data interface	2
1.5	Other.....	3
1.6	Known limitations.....	3
1.7	Software update instruction	3

1. Overview

This release consists of the following artifact:

- Image: fp_vrtek2-release-vr2_2.77.2-277.d8a8a9ed5bc30ec015e96156f04180cc.swu

At the time of release, the following support documents and code are valid:

- Documentation
 - Release notes (this document): VRTK2_v2.77.2_release notes.pdf
 - Integration manual: VRTK2_integration_manual_v2.1.2.pdf
 - Datasheet: VRTK2_Datasheet_v1.0.pdf
- Support software
 - fixposition_driver-6.1.3: https://github.com/fixposition/fixposition_driver/tree/6.1.3
 - fixposition_gnss_tf-3.0.1: https://github.com/fixposition/fixposition_gnss_tf/tree/3.0.1

For any questions or issues, please contact Fixposition support at support@fixposition.com.

2. Release notes

The changes described here are with respect to the release 2.72.2.

1.1 Positioning

- Fixed a bug where the output translation and rotation parameters were not applied to the Fusion outputs nor the map in the Web Interface until the user rebooted the sensor.
- Added warmstart initialization for the wheelspeed scale factor.
- The internal NTRIP client now uses NMEA-GP-GGA_NTRIP messages instead of NMEA-GP-GGA directly from the GNSS1 receiver. This improves the handling of some VRS implementations.
- Fixed a bug where the output covariances dropped to zero while stationary.
- Improved the handling of IMU timestamps to smooth the output trajectory.

GNSS

- No changes.

1.2 Web interface

- Reworked the display of the Fusion status flags on the Fusion status page.
- Improved tooltips for better guidance.
- The user now cannot enable the same NMEA messages multiple times on one port.
- Improved the NTRIP path input validation. Now it does not accept leading or trailing whitespaces.

1.3 Data interface

- Added 1 Hz, top-of-second, NMEA-GP-GGA-GNSS1TOS and NMEA-GP-RMC-GNSS1TOS messages for time synchronization applications. The timepulse is only available for GNSS1.
- Added a 1 Hz, top-of-second, NMEA-GPS-GGA_NTRIP message for use with NTRIP caster. This message reports the best and last available position (considering GNSS1, GNSS2 and Fusion outputs).

- Fixed the course (COG) and speed (SOG) fields in the NMEA-GP-RMC_FUSION message.

1.4 Other

- Fixed two memory leaks that could lead to a decrease in positioning performance after continuous operation longer than 4 hours.

1.5 Known limitations

- The Fusion autostart configuration is not persistent across software updates.
- Under load, the time synchronization can still jump from good to bad.
- When recording (to external disk) powering off (by cutting power) or unplugging the USB disk too early may lead to data loss in the recording. Use the webinterface to download the recordings, unmount the disk or shutdown the sensor in order to prevent the data loss.
- Wi-Fi client connections might be unreliable with more exotic setups, such as SSIDs with special characters or networks that use the same SSID for multiple bands. For best compatibility, the SSID should only consist of alphanumeric symbols and contain no spaces or punctuation.
- It may take a long time for the sensor to reconnect the Wi-Fi client after losing the connection.
- WPA-PSK ("WPA2") is the only supported Wi-Fi security mode. SAE ("WPA3") or open networks are not supported.
- Wi-Fi client connections are not fully reliable in all situations. Users are recommended to use cable connections (such as Ethernet or UART) for operational use of the sensor.
- Opening multiple tabs of the web interface at the same time can lead to an increase in CPU load, impacting positioning performance.
- Camera may freeze (rarely) during operation causing fusion to diverge/reset.
- The Fixposition CAN message wheelspeed input only works if also the "Record raw CAN" is enabled.

1.6 Software update instruction

Depending on the currently installed version:

- 2.49.0 or later: Upgrade to this release by installing the image.
- 2.48.x or earlier: Do not install the image. Contact Fixposition for upgrade options.

To install the software update image (.swu file):

1. Prepare the sensor for upgrade:
 - Ensure the sensor has a reliable power supply. A power outage during the software update process can make the sensor unusable.
 - Ensure that a reliable network connection is used. Using an ethernet connection is strongly recommended. Using a Wi-Fi connection is strongly discouraged.
2. Go to the web interface (<http://10.0.2.1> in the default ethernet configuration) and go to System → Firmware
3. Load the updated image (the .swu file) into the Software Update form (drag and drop, or click to open the system's file open dialog to select the .swu file).
4. Wait until the update process has completed and the sensor has rebooted.
 - Note that when upgrading from 2.58.0 or earlier the update page will be stuck at "The system will restart. Please be patient, as restarting takes about one minute.". Please wait a minute and then manually open <http://10.0.2.1> to get back to the main interface.
5. Verify that the Configuration → Fusion page settings are correct and adjust them as needed.
6. **Important:** This release resets some configurations, such as the output configuration. Check and update the configuration accordingly.