FIX POSITION

Vision-RTK 2 Release Notes

Release v2.85.3

APRIL, 2024

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1. Overview

This release consists of the following artifact:

- Image: fp_vrtk2-user-vr2_release_releasevr2_2853_df0931f8-315.a023c656f064981de361e24ad3c5546f.swu

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

- Documentation
    - o Release notes (this document): VRTK2_v2.85.3_release notes.pdf
    - o Integration manual: VRTK2_integration_manual_v2.2.6.pdf
    - o Datasheet: VRTK2_Datasheet_v1.0.pdf
- Support software
    - o fixposition_driver-6.1.4: https://github.com/fixposition/fixposition_driver/tree/6.1.4
    - o 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 2.85.2.

2.1. Positioning

- Improved performance and stability in outage conditions.

2.2. GNSS

- No changes.

2.3. Web interface

- Added UI to get/set user data.
- Added UI to use backup and restore functionality (see section 2.5).
- Added UI for the new recording method (see section 2.5).
- Added GNSS baseline check status badge to the Fusion status page.
- Fixed display of South/West coordinates on the GNSS Status page. It now displays "d m s.ss S (or W)" instead of "-d -m -s.ss S (or W)".
- Fixed wheelspeed debug display on System->Info page when using FP_B-MEASUREMENT input stream.

2.4. Data interface

- Added API to store user data (a string and a JSON object).
- Added API to back up and restore (almost) the entire sensor configuration (see section 2.5).
- Added API for the new recording method.
- For more information on using these API commands see: API documentation (fixposition.com)

- The /sys/info API now contains "sw_ver" and deprecates "release_tag" (which is still provided for backward compatibility).
- Added new output messages:
  - FP_A-ODOMENU: Fusion odometry output in the ENU frame.
  - FP_A-TF_ECEFENU0: Transformation from the current position to the ENU0 frame (initial reference frame in ECEF coordinates used to generate the ENU frame).
  - FP_A-ODOMSH: Fusion smooth odometry output (for control purposes).
  - FP_A-TF_POIPOISH: Transformation from the POI output to the smooth odometry output.
- Fixed NMEA-*_FUSION timestamps when fusion is not yet running or initialized.

2.5. Other

- Reworked and improved recording functionality
  - Added recording over ethernet (see section 3.2).
  - Improved stability and performance of recording functionality.
  - Added new recording profiles.
- Added backup and restore sensor configuration functionality (see section 3.4)
  - Added the ability to retrieve and download sensor configuration file.
  - Added the ability to load sensor configuration file to the sensor.
- Added a tool to extract ROS bags from new ".fpl" recordings: https://github.com/fixposition/fixposition_utility/tree/main/fpl2bag
- Added scripts to demonstrate recording over the network: https://github.com/fixposition/fixposition_utility/tree/main/record

2.6. Known limitations

- When recording (to an external disk), powering off (by cutting power) or unplugging the USB disk too early may lead to data loss in the recording. Use the Web interface to download the recordings, unmount the disk, or shut down the sensor to prevent data loss.
- The new recording method is still under development and might contain some bugs. For example, the reported log file size is modulo 4 GiB (2^{32} bytes) for logs > 4 GiB.
- The Web interface's fusion status badges show "wait for WS" and "not used" if a wheelspeed sensor is enabled but selected for not use in Fusion. To disable a wheelspeed sensor properly, use the main "Enable" switch and not the "Use sensor" or "Dimensions" switches.
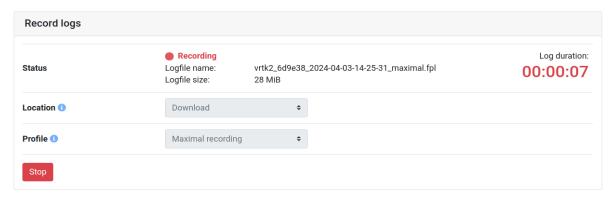
3. Highlights

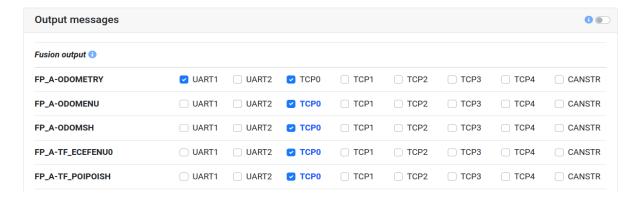## 3.1. Baseline check status badge

Fusion Status

ⓘ Fusion engine	ⓘ Fusion status	ⓘ IMU status	ⓘ IMU noise	ⓘ Wheelspeed status	ⓘ Baseline status
Running (Car)	Initialized (wait for IMU)	Not converged	Low noise	Not configured	Passed

Stop	Reset

3.2. Recording via Ethernet

Log Files

Record logs

Status	🔴 Recording Logfile name: Logfile size:	vrtk2_6d9e38_2024-04-03-14-25-31_maximal.fpl 28 MiB	Log duration: **00:00:07**

Location ⓘ	Download ⇕
Profile ⓘ	Maximal recording ⇕

Stop

3.3. New output messages

Output messages   ⓘ ⬤

Fusion output ⓘ

FP_A-ODOMETRY	☑ UART1	☐ UART2	☑ TCP0	☐ TCP1	☐ TCP2	☐ TCP3	☐ TCP4	☐ CANSTR
FP_A-ODOMENU	☐ UART1	☐ UART2	☑ **TCP0**	☐ TCP1	☐ TCP2	☐ TCP3	☐ TCP4	☐ CANSTR
FP_A-ODOMSH	☐ UART1	☐ UART2	☑ **TCP0**	☐ TCP1	☐ TCP2	☐ TCP3	☐ TCP4	☐ CANSTR
FP_A-TF_ECEFENU0	☐ UART1	☐ UART2	☑ **TCP0**	☐ TCP1	☐ TCP2	☐ TCP3	☐ TCP4	☐ CANSTR
FP_A-TF_POIPOISH	☐ UART1	☐ UART2	☑ **TCP0**	☐ TCP1	☐ TCP2	☐ TCP3	☐ TCP4	☐ CANSTR

3.4. Sensor Configuration Backup and Restore

Backup and restore   ▲

The configuration from the sensor can be backed up and saved as a file. Backup data can be loaded from a file and applied to the sensor. Note that secrets (webinterface password, Wi-Fi passwords) cannot be read from the sensor. The passwords can be manually added to the backup data.

Save to file ⓘ   Load from file ⓘ