Initial tests are planned concerning the 3D-directional stability with different UAV systems. The 3D-trajectory of UAVs with code-corrected GPS had already been verified with target-tracking total station [Eisenbeiss and Stempfhuber, 2009]. With an economical and very light L1 receiver (weight: ublox receiver incl. ports and a waterproof housing 193g, the Bullet III antenna is 179g plus the WiFi module incl. the data logger with around 350g), this described approach could position the absolute 3D-position in the area of a few centimetres on a real-time basis.

4. OUTLOOK

Through this described system and the Open-Source Code RTKNavi Calculation Software for the real-time solution of the carried phase ambiguity, the possibility exists to control any land-based or airborne objects on a real-time basis. In addition, the analysis and the re-initialization can be optimised for the appropriate motion sequences. Moreover, only the a priori information from the flight planning and the airspeed are necessary. Therefore, an efficient and stable positioning is possible in addition to the RTKNavi parameter [Takasu, 2008]. From the modular system structure (different GNSS boards, GNSS aerials, correction services, etc.), the influence of disturbances can be minimised for each, individual application and therefore, the overall system can be optimised. Presently, this is being carried out on various applications in the described research project. The availability of a stable fix ambiguity solution can additionally be achieved through the introduction of GLONASS on these small and economical OEM-Boards.

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