Master Thesis Topic Proposal

Institute of Communications and Navigation – Location Neustrelitz
Internship duration: 6-9 months

Contact person: Anja Heßelbarth

Your mission:

Getting precise and continuous correction data plays an important role for precise phase-based positioning. Usually the correction data are provide by a range correction as measured by a nearby reference station. These corrections of the reference station are used directly this approach is classified as an observation state representation (OSR) technique. This typical real-time kinematic (RTK) method is used by almost all commercial geodetic GNSS receiver. Another approach is the decorrelation of different GNSS error components like satellite clock and orbit, atmospheric delays or satellite signal biases, which are determine by a regional reference network. These co-called state space representation (SSR) – technique has the advantage, compared to the OSR approach that less data has to transmit to the user and the correction data are valid for a larger service area. However most of the commercial receiver cannot yet work with these kinds of correction data.

Currently there are some developments which convert the typical SSR-correction into OSR-correction, so that they can apply by commercial GNSS receiver. This master thesis has the task to analyses and evaluates the results which are based on this SSR2OSR conversion by using real measurement data in different environmental conditions.

Your tasks in details:

- Getting familiar with the concepts of Precise Point Positioning, Real-time kinematic and the different types of correction data
- Preparation and realization of different measurement campaigns
- Evaluation, statistical analyses and comparison of different measurement campaigns

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