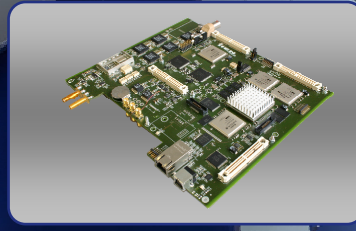
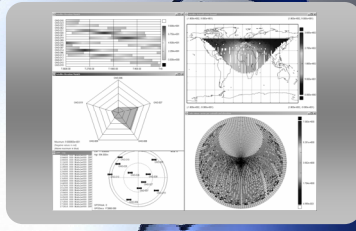


Opportunity for

Master Thesis (6 Months)



Receiver Technologies

Future Multi-GNSS Receiver Data Interface

Thesis Summary

Satellite navigation systems like GPS or Galileo are continuously investigated for future improvements including new signals, service or data messages. Within the Galileo evolution program, the European Space Agency is supporting this process with a flexible GNSS signal generator supporting a variety of possible new signals and data messages as they are discussed within the GNSS community. A flexible GNSS test receiver complements this system allowing to do end-to-end performance demonstrations of the considered signal and data message options.

In order to assess GNSS service performance metrics, the receiver has to output estimated parameters from signal acquisition, tracking and positing in real-time. It includes as minimum: signal parameters, ranging based and code and carrier, Doppler, correlation totals, navigation message, position residuals, integrity information, authentication, signal propagation effects and satellite based information.

Within the proposed thesis, those output formats shall be investigated and matched against the classes of possible navigation signals and data messages supported by the signal generator and receiver. A binary message format shall be proposed for data transmission via TCP/IP and implemented in IFENs software receiver in C++. Finally, testing shall be carried out with exemplary future navigation signal options, showing the difference of the services with respect to the transmitted parameters in MATLAB.

The thesis is carried out in the IFEN premises either in Poing/Germany or in Graz/Austria. It is within the context of the Galileo Evolution program of the European Space Agency.

Requirements

- Master student in Aerospace Engineering, Navigation, Communications Engineering or equivalent sciences
- Programming skills in (C/C++) and willingness to enhance them during the thesis
- Good written and spoken English
- Ability to grasp and learn new concepts quickly and efficiently
- Capacity to approach challenges with a positive attitude and open mind

Application

Please send your resume via Email to careers@ifen.com

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