



DLR

Deutsches Zentrum
für Luft- und Raumfahrt
German Aerospace Center

DLR is the Federal Republic of Germany's aerospace research centre. Its research and development work in aeronautics, space travel, energy, transport and security is integrated into national and international collaborations. DLR researches the earth and the solar system, makes knowledge available for the preservation of the environment and develops environmentally compatible technologies for energy supply, mobility, communication and security.

R-Mode - A Radio Navigation System for Marine Applications

Institute of Communications and Navigation –
Location Neustrelitz

Internship duration: up to 9 months

Contact person: Niklas Hehenkamp

Research topic:

Global Navigation Satellite Systems (GNSS) are today a single point of failure for numerous systems in the transport sector which need accurate timing and/or positioning. Especially in the maritime domain many bridge systems depend on the availability of a reliable GNSS based position and time. In areas with high traffic density and/or obstacles near the shipping lane this causes a serious threat for safe operation of the vessels. Therefore, the DLR is developing together with partners a terrestrial maritime backup system, named Ranging Mode (R-Mode), which will be implemented on existing maritime infrastructure. Next steps would be the implementation of a R-Mode receiver and the optimisation of radio beacon ranging signal components which will be added to the legacy radio beacon signal.



Your tasks:

- Get familiar with the R-Mode radio navigation system
- Analysis of measurement data from the R-Mode testbed
- Development of ranging techniques

Your Qualification:

- Study in engineering, mathematics or physics
- Interest in navigation and radio wave propagation
- Knowledge of Python and/or GNURadio

Deutsches Zentrum
für Luft- und Raumfahrt
German Aerospace Center

Institute of Communications and Navigation
Kalkhorstweg 53
17235 Neustrelitz

Niklas Hehenkamp
Phone: +49 3981 480-269
Fax: +49 3981 480-123
Niklas.hehenkamp@dlr.de
www.DLR.de