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The German Aerospace Center DLR has a dual mandate as the national research center for aeronautics and space, and as the space agency of the German federal government. Approximately 9000 people work for DLR on a uniquely diverse range of topics spanning the fields of aeronautics, space, energy, transport and security research. They collaborate on projects extending from fundamental research to the development of the innovative applications and products of the future. If the idea of joining a top-class team of researchers working in a supportive, inspirational environment appeals to you, then why not launch your mission with us?

The Institute of Communications and Navigation in Oberpfaffenhofen near Munich is offering a

### Diploma / Master Thesis

#### Distributed Trust in Mobile Environments for Digital Aeronautical Communications

##### Your mission:

With air transportation growing and current civil aeronautical communication systems reaching their capacity limit in high density areas, the need for new aeronautical communication technologies becomes apparent. The biggest challenge in recent years is the transition from analogue voice to digital data communication and the related trend towards an increased autonomous data processing. A promising candidate for the future digital communication infrastructure in continental areas is the terrestrial long-range L-band Digital Aeronautical Communications System (LDACS). As safety and security are strongly intertwined in civil aviation, every installation of LDACS requires protection against cyber-attacks.

The objective of this thesis is to evaluate whether distributed trust approaches prove lighter in terms of communication overhead while also providing a more secured environment for the aeronautical ecosystem. The main steps of this thesis are to (1) evaluate measurement techniques of different trust levels (2) investigate decentralized solutions to place trust upon distributed trust anchors (3) apply distributed trust solutions on mobile environments e.g. LDACS.

##### Your qualifications:

- Enthusiasm for Cybersecurity and IT Security
- Excellent knowledge of ongoing developments in the fields of cryptography and distributed trust
- Excellent knowledge of Python
- Good knowledge of network design and digital communication infrastructure
- Independent working

##### Your benefits:

Look forward to a fulfilling job with an employer who appreciates your commitment and supports your personal and professional development. Our unique infrastructure offers you a working environment in which you have unparalleled scope to develop your creative ideas and accomplish your professional objectives. Disabled applicants with equivalent qualifications will be given preferential treatment. If you have any questions concerning specific aspects of the job, please contact Nils Mäurer by calling **+498153282484** or by email **nils.maeurer@dlr.de**.



**Deutsches Zentrum  
für Luft- und Raumfahrt**  
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