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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 7700 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?

For our facility unit **Simulation- and Software Technology** in **Braunschweig**, we wish to recruit a

Student for a Master Thesis (m/f)

Design and Implementation of Multi-core support for an Embedded Real-time Operating System for Space Applications

Your mission:

As part of the project OBC-NG (On-Board-Computer - Next Generation), which is currently being conducted at DLR, the embedded real-time operating system RODOS shall be extended to support multi-core platforms for future space applications. The OBC-NG project targets an ARM Cortex-A9-based dual-core chip. This requires not only modifying the hardware-dependent boot loader and setting the system boot sequence for multi cores, but also involving real-time operating system's task scheduling, time management, synchronization and communication between tasks, memory management, etc.

Your tasks:

- Modification of the hardware-dependent boot loader for system initialization in assembly language
- Analysis of the code and documentation of RODOS real-time kernel and its characteristics, realization of multi-core mutexes and modification of the task management
- Verification of the correctness of the modified kernel
- Creation of a comprehensive master thesis

Your qualifications:

- Master studies in Computer Science, Computer Engineering or similar
- Good programming skills in C/C++, experience with Unix/Linux OS
- Knowledge about operating systems and inter-process communication
- Experience with the ARM platform would be an asset
- Fluency in written and spoken English

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 unparalled 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 Ting Peng (ting.peng@dlr.de) Daniel Lüdtke (daniel.luedtke@dlr.de). Please find further information on this vacancy and details regarding the application procedure, at **www.DLR.de/dlr/jobs/#8687**.

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German Aerospace Center

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