Master Thesis – Study strategies for using a multi-CPU, multi-core Linux system for telecommunication applications

Background
A trend in telecommunication platforms is to use multi-CPU, multi-core systems. This causes a need for an investigation of how applications can be implemented to use such hardware in the best way.

Thesis Description
The purpose of this master thesis work is to study different strategies for how a multi-CPU, multi-core Linux system can be used for telecommunication applications.

A current implementation of one of our systems uses the C++ programming language, the OSE real-time operating system and single-threaded processes in a multi-CPU, multi-core platform. A next generation platform will use the Linux operating system instead of OSE.

The master thesis work should study different strategies for how applications can benefit from a multi-CPU, multi-core Linux platform with the aim to answer the following questions:

- What principles shall be used for design and implementation of applications so that high productivity and quality can be achieved?
- How can high execution performance for applications be achieved?
- How can applications be debugged in both a simulated- and a target environment?

Applications do not have to be implemented in the C++ programming language; this master thesis may consider other programming languages.

If time allows, some experimental implementations of the proposed concepts can be made and evaluated.

Qualifications

Extent
1–2 Master thesis of 30p each

Preferred starting date
As soon as possible

Keyword
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