Master Thesis –
Rust for User Space Packet Processing

Background
Mobile networks are used all over the world and are the corner stone for the networked society, where everything will be connected. To support the vast amount and diversity of data expected in future networks, Ericsson develops products to drive and support the networked society. The subject for this Master Thesis is defined to investigate and develop algorithms, architecture, tools etc. to support huge increase of speech, data, and massive IoT for Radio Access Networks.

Thesis Description
Rust is an up-and-coming language with strong support. It promises type and memory safety with comparable speed as C. Would it be a possible target for packet processing implementations to improve quality and security?

Possible approach is to start with the DPDK testpmd tool and re-implement chosen parts in Rust. Compare for execution overhead and softer qualities around code quality and ease of development.

The thesis will be concluded with a result presentation for the Ericsson team.

Qualifications
This project aims at students in electrical engineering, computer science, computer engineering or similar.

Extent
1-2 students, 30hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2023

Keywords
SW development, Mobile Telecommunication, Optimization.

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