Master Thesis – Data plane application development

Background
This paragraph In communication networks there are different applications handling data to and from users. An example of such data could be packets originating from a user browsing the Web. The part of a communication network handling such data is called data plane.

In order to reduce the time to implement high quality data plane applications, specialized frameworks for developing data plane applications can be used. Such frameworks bypass network stacks using special drivers in order to reduce interaction with the Operating System to achieve high performance. Packet processing performance can be increased by up to ten times when using such a framework.

Thesis Description
This thesis is about using an existing data plane framework to implement a data plane application simulating an interface of a base station for 5G.

The following steps are envisioned as part of the thesis work:
- Investigate how the data plane framework Fast data—Input/Output Vector Packet Processing can be used for implementing a data plane application. This framework is an open source extensible framework that provides out-of-the-box production quality switch/router functionality.
- Implement an application simulating a data plane interface of a base station for 5G
- Analyze how the usage of Fast data—Input/Output Vector Packet Processing data plane framework turned out

The thesis will be concluded with a result presentation for Ericsson

Qualifications
This project aims at students in computer engineering, computer science, electrical engineering or similar. Knowledge about network protocols is needed.

Extent
1-2 students, 30hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2019

Keywords
Communication network, Data plane, 5G

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