Master Thesis – Extending OpenFlow for proprietary protocols

Background
In the networking world today there is a strong push towards Software Defined Networking, SDN for routing of IP traffic. At Ericsson we do specialized routing of packets based on application specific protocols. It would be interesting to understand how we can incorporate this in to SDN architecture.

Thesis Description
Radio user plane protocols are different from the usual IP traffic. Therefore the standard ways of describing flows in OpenFlow might not be suitable. We need more expressive rules to match the type of flows that are in use for radio transport. Investigate the feasibility of extending OpenFlow with application specific protocol matching. Implement a prototype using OpenVSwitch and a suitable SDN controller. The evaluation shall cover scalability, flow setup latency and possibly other metrics. We are interested in suitable integration methods to distribute flow information between application, SDN controller and SDN switch.

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

Extent
1 students, 30hp

Preferred Starting Date
Autumn 2015

Keywords
C++, SDN, Programming, Linux, IP

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