Master Thesis – Data transformation
Trajectories in Embedded Systems

Background
The change is on, we are in the third wave of ICT integration of things in what we call the Networked Society, where location based services are renewing its’ strengths. We are tracking movements in many different parts of the society in the transportation sector, in distribution and healthcare to the benefit of people, business and society. The new technologies give new possibilities to drive mass data from the radio networks to bring new services for the mobile operators and their partners. The opportunity exists to prove processing of massive trace event data from radio base station sites and apply identified algorithms to process and to compute calculations as result of trajectories information output. The output will be collected in a central server system.

Thesis Description
This master thesis will include a prototype implementation with real network equipment in a embedded system part with ARM® Cortex®-A15 MPcore™ processors. The master thesis aims to implement the known algorithms including fetching processing and deliver output to a management system on the runtime environment. The impact on the embedded system will be characterized with regard to trace data, how many cellular coordination data points can be tracked to produce trajectories. The thesis will be concluded with a result presentation for the Ericsson team. The following steps are envisioned as part of the thesis work:

- Investigate and input and output interface specifications for accessing and through the algorithms make required computation for trajectory records.
- Implement the algorithms and the communication interfaces
- Characterize and optimize code to manage mass event data

Qualifications
This project aims at students in electrical engineering, computer science, computer engineering, or similar with experience from distributed systems. Background in wireless communication are preferred.

Extent
1-2 students, 30hp each

Preferred Starting Date
2015 Q1

Keywords
C and C++ in Linux environment, Linux drivers, socket programming, code optimization Linux benchmark, Mobile Telecommunication

Contact Persons
Daniel Jakobsson System Developer
+46 10 711 4290
daniel.jakobsson@ericsson.com

Jerker Ericson, Manager
+46 10 7114669
jerker.ericson@ericsson.com