Master Thesis – Using SEI CERT Secure Coding Standard to Reduce Troubles

Background
Mobile networks are used all over the world and are the corner stone for the networked society, where everything shall be connected. To support the vast amount and diversity of data expected in future networks, Ericsson are developing products to drive and support the networked society. The subjects for Master Thesis are 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
Security of future networks is critical. Access to networks and information is a lifeline given our dependence on the services that rely on such networks. We therefore are continually striving to improve the quality of code that we ship into our products. As a part of this journey we believe that adoption of secure coding practices will help us reduce vulnerabilities and improve quality of our products. We want to test the hypothesis if “compliance to SEI CERT secure coding standard can help reduce (trouble reports) TRs”.

The thesis will also help us evaluate if SEI CERT standard is keeping up with the threat evolution.

Task
Studying the industry secure coding standards. They will then study TRs and (root cause analysis) RCA. They will then check if compliance to secure coding standard would have helped avoid the TR in first place. The advantage with this approach is that student/s do not have to spend time on RCA since they will work on historical TRs for which RCS is already performed. Student/s will also perform similar analysis for the vulnerabilities reported in CVE and other vulnerability related databases. Results from analysis with open vulnerability databases will be published in the report. Publication of results from analysis of TRs at Ericsson are subject to clearance from key information security experts within Ericsson.

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

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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 2021

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