Master Thesis: Attacks on the Chaos Sensor Network Protocol

Background and Research Area Chaos is a recent, extremely efficient primitive for supports all-to-all data sharing in low-power wireless networks such as sensor networks [1]. One of its salient features is that it does not require a routing protocol. Since sensor networks are becoming ready for critical application they must not only be efficient but also secure and resistant against attacks.

Thesis Objective and Content The aim of this thesis is to investigate what new attacks are possible on Chaos and evaluate their effectiveness. The evaluation would be performed on real hardware on one of the available open sensor networks.

Candidate Requirements and Application For this thesis we are looking for a highly motivated student with very good C programming skills, solid knowledge in security and an interest in performing an experimental study. The student should not be afraid of digging into low level code.

The thesis can be started soon. For the application, please provide us with a CV, your courses and grades. In addition, we appreciate an article, paper, thesis or other relevant documents you have written in your education in order to judge your ability to express yourself in English. Please send your application to thiemo.voigt@it.uu.se as a set of pdf files (no archives, single files, please).

Contact person
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References

[1] Olaf Landsiedel, Federico Ferrari, and Marco Zimmerling. Chaos: Versatile and Efficient All-to-All Data Sharing and In-Network Processing at Scale. In *SenSys'13: Proceedings of the 11th ACM Conference on Embedded Networked Sensor Systems*, November 2013.