Research Project at Philips Research Europe (The Netherlands)
Security in the IP-based Internet of Things

Organization Description: Philips Research is the source of many advanced developments in Healthcare, Lifestyle and Technology. Building on 90 years' experience in industrial research and our world-leading patent position, we're dedicated to meaningful innovations. In the healthcare domain, we are enhancing imaging and monitoring systems, as well as exploring innovative personal healthcare. In lifestyle, we're helping people see, hear, remember and share content, anywhere and anytime. Our vision focuses on simplicity, making technology an integral – but invisible – part of everyday life.

Background: In the coming years, control systems are going to evolve regarding their needs and capabilities. Recent advances in LED luminaries are leading to highly configurable lighting systems comprising a higher number of light sources. Device to device wireless communication capability will enable advanced operation. In particular, IP-technology will revolutionize the way things are not only locally controlled, but also from the backend, creating the IP-based Internet of Things. Bootstrapping and maintaining the security relationships are key and challenging aspects in these new systems because existing IP-security protocols such as TLS and their underlying cryptoprimitives do not fit the resource constrained nature of lightweight devices and strict operational requirements need to be considered.

Task: During your internship (or Master Thesis), you will get involved in a team doing research into new IP-based control technologies. You will collaborate in the design, implementation, and analysis of new security protocols for small devices. This internship will allow you not only to learn better existing IP protocols, but also to dive into new directions for the Internet.
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Your Profile:

- Knowledge of mathematics, IP protocols, and security protocols.
- Experience in programming C and at least in one of Java, C++, C#.
- Fluent English in speaking and writing.
- Initiative, creativity, analytical skills, organized, and task-oriented.

When you apply to this assignment we require a short motivation letter, CV and grade list.

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