SWEDISH ICT **SICS**

Thesis title: *Improving privacy in the authorization framework OAuth 2.0*

Thesis description

Authorization is the process for granting approval to a client to access a resource hosted by a server. The authorization framework OAuth 2.0 is one of the most widely adopted standard for managing authorization of users, services and their devices, by means of dedicated authorization servers. The goal of the project is to design, implement and test new extensions for OAuth 2.0, in order to reduce the information plainly exposed during the authentication process, and so improving the privacy of end users. The designed privacy-enhanced approach will be compared with the original one considered by the standard OAuth 2.0.

SICS will provide background information and the necessary guidance during the course of the thesis. The tasks of the Masters student for this thesis are:

- Study the authorization framework OAuth 2.0.
- Implement, set up and test a simple but real application scenario using OAuth 2.0. A possible software library to be considered for this step is Spring-Security-OAuth.
- Design, implement and test new OAuth extensions for improving user's privacy and limit information exposure during the authorization process. The privacy-enhanced approach will be compared with the original one.
- Document the activities and results as a thesis report.

Competence

We are looking for a bright MSc student who has fulfilled the course requirements. Good programming skills in Java and web scripting languages as PHP and Javascript are required, as is good spoken and written English. Experience with network and communication security is a plus.

Applications should include a brief *personal statement*, *CV*, and a *list of grades*. In the application, make sure to mention previous activities or other projects that you consider relevant for the position. Candidates are encouraged to send in their application as soon as possible. Suitable applicants will be interviewed as applications are received.

Start time: As soon as possible
Location: SICS Swedish ICT AB, Kista, Stockholm

About SICS

SICS Swedish ICT is a leading research institute for applied information and communication technology in Sweden. SICS is a part of Swedish ICT Research AB, a non-profit research organization owned by the Swedish government and industry. SICS' mission is to contribute to the competitive strength of Swedish industry by conducting advanced and focused research in strategic areas of computer science, and actively promote the uptake of new research ideas and results in industry and society at large. SICS is an active participant in collaborative national, European, and other international R&D programs.

Contact person

Dr. Marco Tiloca, SICS Swedish ICT AB, Security Lab (marco@sics.se)
Electrum Building, Isafjordsgatan 22, SE-164 40 Kista, Stockholm