Introduction

QGIS or Quantum GIS is a popular free and open source modular desktop Geographic Information System used by the geospatial community to access and analyse geospatial information. The Open Geospatial Consortium (OGC) is an international standardization organization with 500+ members that ensures through their work that access to geospatial information is interoperable. The standards program of the OGC comprises of encoding and web services standards. Within the implementation program of the OGC, annual Testbeds are conducted that have the objective to improve standards by extending existing software based on new requirements or ideas.

For the Testbed 13 activities of the OGC, which run from April until December 2017, one objective is to extend the QGIS desktop application with enterprise security to be able to handle OAuth2/OpenID Connect and SAML2 (Security Assertion Markup Language) based authentication. In detail, the objective is to extend the existing WMS/WMTS plugin with OAuth2/SAML based authentication and test with Testbed 13 services.

Objectives of the IDP

The objectives of this IDP are linked with the objectives of the Testbed 13 as described above and results from the previous OGC Testbed: The security aware extension of the QGIS plugin for WMS/WMTS should (i) become capable to parse security requirements described in a service capabilities document; (ii) extend the existing authentication support (currently only HTTP Basic Authentication is supported) for OAuth2 and SAML2 - Enhanced Client Profile. OAuth2 is a RFC from the IETF and SAML2 is a specification from OASIS.

Motivation

The security extension to be implemented will be made available as open source on Github. This gives you an excellent change to gain credits and reputation in the open source community. The project also offers the opportunity to communicate and collaborate with experts worldwide. Attendance of the OGC Technical Committee meetings scheduled in Southampton, UK for 11-14 September 2017 might be an option if interested.
**Required Skills**

You have the right skills if you can program in C++ and know how to parse an XML document leveraging the DOM interfaces. A good understand of the Github concept would be helpful but not required. As QGIS is implemented in QT, it would be ideal if you knew about QT. It would be expected that you train yourself on the authentication standard SAML2 (ECP Profile only) and the authorization framework OAuth2 to understand the security concept to be implemented.

**References**

- Open Geospatial Consortium: [http://www.opengeospatial.org](http://www.opengeospatial.org)
- QT: [https://www.qt.io/](https://www.qt.io/)
- QGIS: [http://www.qgis.org](http://www.qgis.org)

**Contact Information**

TUM
Chair of Geoinformatics
Prof. Thomas H. Kolbe
Arcisstr. 21
80333 München
andreas.donaubauer@tum.de

In cooperation with
Secure Dimensions GmbH
am@secure-dimensions.de